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**THIRD REPORT
ON THE
WORLD HEALTH SITUATION
1961 - 1964**

**WORLD HEALTH ORGANIZATION
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NOTE

In May 1962 the Fifteenth World Health Assembly, after discussing the Second Report on the World Health Situation¹ prepared by the Director-General, invited Members to provide, as a further step towards fulfilment of their obligations under Article 61 of the Constitution, information for the preparation of a third report covering as far as possible the period 1961 to 1964.² In the same resolution the Director-General was requested to prepare for the Nineteenth World Health Assembly the Third Report on the World Health Situation.

In May 1966 the Nineteenth World Health Assembly discussed and noted the Third Report, thanked Member States and Associate Members for their assistance in providing material and requested them to submit any additional information or amendments that they wished to include in the Third Report.³

The "general survey" presented as Part I of this volume contains an analytical review, under broad subject headings, of certain aspects of the material contained in the reports received from Member States and Associate Members. The reports themselves, with the additions and amendments submitted by the governments, are reproduced in Part II.

¹ Off. Rec. Wld Hlth Org. 122.

² Resolution WHA15.43: Off. Rec. Wld Hlth Org. 118, 20.

³ Resolution WHA19.52: Off. Rec. Wld Hlth Org. 151, 25.

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PREFACE

THE present review, covering the period 1961-1964, is the Third Report on the World Health Situation. Taken together, the three reports survey a period of eleven years, from 1954 to 1964, during which the world has witnessed great achievements in the fields of science and technology, the creation of many new independent States and the strengthening of the bonds of international co-operation.

In keeping with this progress and in its own sphere of influence, the World Health Organization at the end of 1964 had 121 Member States and Associate Members, as compared with 84 in 1954. It had also incurred and willingly accepted wider responsibilities not only as a consequence of this enlarged membership, but in meeting other claims upon its services. Pertinent to this situation was the fact that the world population had increased by nearly 600 million during the period.

The list of WHO's own tasks and achievements is recorded year by year in the Annual Reports of the Director-General, now nineteen in number. These reflect much that is going on in the health field in individual countries throughout the world but they are not intended—at any rate under present conditions—to describe national health situations in detail or the progress in health service provision in the various Member States.

Yet it is important that the situation in these countries should be available for study and not only in the national records. There is a recognized need for a single comprehensive volume, where, within a standardized framework of reference, both statistical and narrative, the essential facts can be presented.

This mode of presentation is not intended to suggest comparisons between countries and territories because the vast differences in national resources, area and geographical features, population and political and administrative experience obviously preclude any such possibility.

It is important, nevertheless, that the facts should be readily accessible and presented clearly and succinctly, and this the series of world health situation reports and supplements has attempted to do.

On the present occasion, largely because a decade is a sizable period of time over which a country can take stock of its own progress and achievements, governments were invited to provide certain additional information in their replies to the questionnaire upon which the Report is based. The information which governments were requested to furnish included an up-to-date statement of the administrative structure of their health services, an account of any activities in national health planning and a review of such of the social, cultural and economic developments occurring during the decade as had been of significance to their health services.

A slightly smaller number of replies to the questionnaire, namely 147, were received from governments, as compared with 157 for the First Report and 163 for the Second. Broadly speaking, however, the replies received were more detailed and provided ample material for the drawing of a comprehensive picture of the national health situation. The individual reviews by country and territory which summarize the information in the replies are to be found in Part II of this Report. It is the function of Part I of the Report to present—in great part on the basis of this material but not overlooking relevant facts from other sources—the salient features of the world health situation and to suggest some broad conclusions which may be derived from them.

There are favourable features to report; the declining death rate in many countries, the apparent suppression of certain communicable diseases, an increase in the manpower and institutions of several health services. But every one of these statements is subject to some qualification. Death rates have not declined universally. There are a few countries in which the crude death rate has actually increased. Similarly, there are certain diseases which have taken a heightened toll in mortality. Certain communicable diseases which have been regarded as controllable, if not controlled, have shown resistance to the agents which were used against them. Certain other diseases, ones regarded as disappearing or

in abeyance, have manifested a recrudescence. The sanitary fundamentals—potable water, waste disposal, good housing—upon which so much can be built to improve the health situation, are probably only available to a fraction of the world's population. There are also the very great deficiencies in manpower and institutions in almost all developing countries, which are accentuated in some by the added burden caused through population growth. Above all there is the lack of financial resources which in many countries gravely limits the provision of services to the bare minimum.

But against this somewhat sombre background one must see and acknowledge the formidable efforts which have been made by Members to strengthen, to consolidate and often to extend their health services. One must also note the support that men and women, individually and in communities, are now giving to these efforts. This, in itself, is a most promising augury for the future of world health.

It is one of the functions, and also one of the privileges, of the World Health Organization and its staff to collaborate with Member States and Associate Members in the attainment of their aims and targets in the health field. The improvement in world health during the decade—though falling short of all our optimistic hopes and desires—has nevertheless been notable. If the Third Report on the World Health Situation is able to underline that fact, and yet at the same time shows how much there is still to do, it will have served a useful purpose.

It remains for me to extend my personal thanks to all the Member States and Associate Members for their most valuable contributions to the Report, which make it not only a statement of their activities on behalf of their fellow citizens but also an indication of their interest in the promotion of world health.

A handwritten signature in black ink, appearing to read "M. G. Caudan".

Director-General

Part I

GENERAL SURVEY

CHAPTER 1

INTRODUCTION

The responsibility of governments for the health of their peoples is explicitly stated in the Constitution of the World Health Organization. Member States are also under an obligation to report annually on the progress they have achieved in discharge of that responsibility. Their obligation in this respect is set out in detail in Articles 61 and 62 of the Constitution, which state:

Each Member shall report annually to the Organization on the action taken and progress achieved in improving the health of its people.

(Article 61)

Each Member shall report annually on the action taken with respect to recommendations made to it by the Organization and with respect to conventions, agreements and regulations.

(Article 62)

In the early days of the Organization, it was envisaged that from the material so provided it would be possible to compile what would be in effect an annual record and review of the work of governments in the health field. In fact, the Rules of Procedure of the Health Assembly at one time carried a requirement that the provisional agenda should include "a summary analysis of annual reports from Members under Articles 61 and 62 of the Constitution". But it was soon realized, as difficulties in compilation became apparent, that the occasion for such an ambitious undertaking had not yet arrived. The idea, therefore, though not definitely abandoned, was allowed to lie fallow.

In 1954, however, the Economic and Social Council decided to consider the world economic and social situation. It accordingly asked for an assessment of the health situation in the world, which would take its place in the framework of a review of the world social situation and the progress achieved in that sphere.

After considering this request, the Executive Board at its fifteenth session and the Eighth World Health

Assembly reached the conclusion that the Organization should make arrangements for the preparation of reports on the world health situation, not only to meet the immediate purpose of the Economic and Social Council, but also periodically for study by the Assembly.

It was left for the Ninth World Health Assembly to invite Members of the Organization to fulfil their obligation under the Constitution by providing the material for a report covering as far as possible the period 1954-1956. The Assembly also suggested that the task of Members that were already Members of the Pan American Health Organization might be facilitated by their adopting, with necessary adjustments, portions of the questionnaire already in use in that organization for the compilation of its four-year reports on health conditions in the Americas. It further requested the Director-General to prepare the First Report on the World Health Situation for the Eleventh World Health Assembly in Minneapolis, at the time when, as a contribution to the celebration of the tenth anniversary of the World Health Organization, the commemorative volume *The First Ten Years of the World Health Organization* was due to appear.

The First Report on the World Health Situation was prepared and presented in the form which was subsequently followed for the Second Report and its supplement, and is continued in the present report. Each report consists of two parts — Part I, entitled "General Survey", and Part II, containing the review by country and territory. The former, though by no means a summary of the contents of the review by country and territory, is concerned to present a general description of the world health situation. This description is supported and illustrated by demographic and other statistical data and by a comparison of such mortality and morbidity facts as are available and of the trends which they disclose. In continuation of this factual comparison there is a recital of the residual health problems experienced by governments, and a review of the developments envisaged for the solution of these problems. The aim is to see these problems and developments as a whole and against the background of the economic and

social development of countries both as independent units and as members of the world community.

The country reviews are based in the main on the information supplied by governments in reply to a questionnaire, but are supplemented occasionally from other official sources and documents. Very often the actual words of the government's reply to the questionnaire are quoted. These short, synoptic reviews are set out, by region, in the alphabetical order of countries and territories.

The Eleventh World Health Assembly noted the First Report on the World Health Situation and invited Member States to prepare a second report covering as far as possible the period 1957-1960, using as a guide for its preparation a questionnaire prepared by the Director-General.

This questionnaire differed materially from the questionnaire of the Pan American Health Organization used in the preparation of the First Report. It sought information about recent administrative, legislative or economic changes and requested a brief summary of medical and public health research and field investigations. Member States were invited to enumerate their public health problems in order of magnitude, indicating at the same time how the order of priority had been determined. Furthermore, the number of statistical tables was increased. The questionnaire aimed at a wider and deeper study of the facts of the national health situation and of the multifarious activities of the health administrations.

Out of this material the Second Report on the World Health Situation was compiled, and subsequently submitted to the Fifteenth World Health Assembly. On this occasion the Report was not only noted but the future periodicity of such reports was discussed. It was agreed that the ordinary sequence of four-year reports should be maintained, but that in addition supplements to these reports should be prepared at two-year intervals. The supplementary reports would be specially concerned to review the health situation of new countries, while at the same time incorporating amendments and additions to country reviews already published. In addition, each supplementary report would carry a review of a special topic — a study in depth of some such subject as medical research or education and training of health service personnel. At the same time the Fifteenth World Health Assembly invited Member States to co-operate in the preparation of the Third Report, covering the period 1961-1964, which would be submitted to the Nineteenth World Health Assembly.

In the interval, the supplement to the Second Report with its special topic, "Education and training of health service personnel", was to be prepared and presented to the Seventeenth World Health Assembly.

With increasing experience in the compilation of these documents, steps were taken to simplify the questionnaire for the Third Report. Efforts were made, for example, to avoid asking for statistical information already provided annually to the Organization, and to restrict the sub-division of questions. On the other hand, it was felt that the opportunity should be taken not only to review the period 1961-1964 in detail but also to take a retrospective glance at the decade ending in 1964. And this was to be done, more particularly, against the background of the economic and social changes which had become obvious and which were reflected in the national health situation. This task was relatively easy because for many countries there were now available sequences of statistical data which had been collected by the World Health Organization. By means of these records, it was possible to mark the progress and the achievement within the national field. Linked with the interest in planning for economic and social development was the widespread activity in national health planning. Member States were accordingly invited to give an account of their experience of and participation in this new and dynamic process. Governments were also requested to provide a description of their national health administration at its central, intermediate and local levels. Finally, a new *pro forma* for the part of the questionnaire concerning the national expenditure on health services was prepared. It was intended to obtain a more striking presentation of certain important financial facts—the health percentage of the national government consumption expenditure, and the *per caput* outlay on the health services.

In the General Survey of the Third Report an attempt has been made to present these new features in a logical sequence, together with the customary sections of the Report which deal with vital statistics, the world epidemiological scene, and the various national health problems which are persistent and even refractory. The objective is, in short, a conspectus of the world health situation with the changes occurring during the past four years and often over a longer period, even a decade. It is a moving panorama, for in these days of scientific advances, population growth, and great activity in the political and socio-economic spheres there can be no static period.

Apart from providing a contemporary commentary on the changing pattern of the health situation, the Report serves other purposes. It is essentially a book of reference, a compendium of information, sometimes incomplete, but always validated by the country under review. It takes its place alongside annuals, digests, directories and manuals which emanate from the United Nations, the World Health Organization and other specialized agencies, and which form an invaluable international library of reference.

It is also a repository of resource material for teaching purposes which may be useful to public health schools in many parts of the world. In these same schools and elsewhere it has provided a research tool and has contributed to studies in many fields, including demography, vital statistics, manpower assessment, health planning and the organizational and adminis-

trative structures upon which all health services are based.

And finally it serves both to provide the continuity of record and to illustrate the steadfastness of purpose which are among the characteristics of great corporate bodies — and not least of the World Health Organization.

CHAPTER 2

STATISTICAL REVIEW

The science of statistics has been defined as the study of series of numerical data. By derivation it is also concerned with States and their characteristics, the numbers and occupations of their populations, their territories, buildings, fortunes and other possessions. In practice, statistics are one of the tools employed to define national problems and situations and to assess their magnitude. As a result of the application of the tool, the problems and situations can be ranked more precisely according to their importance and placed in an appropriate order of priority for action.

Statistics are therefore essential for the efficient working of any organized system of health services. They can be of assistance in delineating the health situation, in indicating trends, in the measurement of results, and in the overall evaluation of the work of the services.

Unfortunately, there are countries for which there is no body of statistical information available, and many where the data are incomplete or defective in coverage and quality. Often these deficiencies occur in countries where the need for adequate statistical material is greatest, because of their desire to formulate plans for economic and social development. Nevertheless, statistics which fall short of the recognized desiderata may serve a useful purpose, first by indicating the gaps which exist in the data which have been collected and subsequently by stimulating the necessary improvement.

But the more complete the statistical data in the appropriate fields, the easier it will be to obtain a clear picture of a health situation or of the operation of a health service, and the more detailed and precise the content of any plan which is formulated.

The primary source of a country's demographic data is the material collected during the taking of the periodic national census. Some indication of the development in census-taking throughout the world during the course of 110 years is given in Table 1.

The fundamental use of the population census, as has been recognized since Roman times, and even earlier, is to provide the facts for governmental policy and administration. It also provides the numerical background against which the annual rates for

births, deaths and morbidity and the natural increase can be calculated.

TABLE 1. NATIONAL CENSUS-TAKING ACTIVITY
1855-1964

Period	Number of countries taking at least one census ^a during the decade	Population	
		Number	Per cent. ^b
1855-1864	51	197 744 000	17
1865-1874	53	246 523 000	18
1875-1884	71	564 786 000	39
1885-1894	73	614 155 000	41
1895-1904	90	839 447 000	55
1905-1914	103	770 698 000	46
1915-1924	122	904 667 000	51
1925-1934	120	1 265 684 000	60
1935-1944	100	1 275 432 000	54
1945-1954	186	2 056 592 000	78
1955-1964	208	2 226 620 000	69 ^c

^a Including censuses of minor ethnic segments.

^b Population as percentage of estimated world total at end of decade.

^c This decrease is due primarily to the fact that the population of Mainland China was last enumerated in 1953.

It is a truism that the health administrator has to rely upon and be guided by the information which is available, and which cannot be improved at short notice.

The commonly available statistics are:

(1) mortality data in the form of crude death rates and infant mortality rates;

(2) the morbidity data which can be extracted from the records of notified communicable disease.

More refined and precise mortality and morbidity statistics, where they exist, are of course utilized by national health authorities and enable them to make a more analytical study of their health situation. Examples of such additional data are the specific death and incidence rates by age and sex for individual diseases, perinatal death rates, and the expectation of life.

Mortality Statistics

The crude death rate will almost certainly be known in many areas where information regarding the infant mortality rate and the expectation of life are not available or are of dubious value. It demonstrates the overall intensity of mortality in a particular community or country and is valuable for year-by-year comparisons within a specific area for a period during which factors affecting the structure of the population do not play an important role.

This information is not available in all countries of the world, and for many countries it exists only in an incomplete and unorganized form. The degree of completeness of registration and the coverage may not be the same for every country and may change with time.

The usefulness of the crude death rate for purposes of international comparison is restricted because of the part played by the age-sex structure of a population in determining that population's mortality. Nevertheless, it would be unwise not to make use of the crude death rate, especially when it may be the only available measure which can serve as an indicator of progress in developing countries. Many such countries have been able to show a decline in the crude death rate during the past decade and, provided that the structure of the population, e.g., the age-sex composition, has not changed substantially, the decline can be regarded to some extent as a measure of the advance that has been made. It can also, in fact, be assumed that as a rule the degree of completeness of registration improves with time.

The crude death rates made available by countries in the six regions of the World Health Organization for the ten-year period 1954-1963 point to the occurrence of certain regional differences in mortality trends.

The majority of the countries in the African, Eastern Mediterranean, South-East Asia and Western Pacific Regions and in Central and South America whose death rates were relatively high at the beginning of the decade, i.e., in 1954, show a declining trend in their record of mortality. In most of the countries of Europe, in North America and Oceania, however, where death rates were relatively low in 1954, there has been a levelling process and in some cases even an increase in their annual death rates over the same ten-year period.

In the paragraphs which follow, the situation in each region will be described in somewhat greater detail, although in three of the regions the number of countries for which information is available is small. In every instance, however, the period referred to is the decade 1954-1963.

Out of seven countries in the African Region for which data are available, six registered a decline in mortality during the period. In one country an increase was recorded. Where reductions in the death rates were recorded they were frequently quite extensive, amounting to between 25 per cent. and 40 per cent.

In the Region of the Americas, data for the period are available from 36 countries, of which 30 show a decline in mortality. In the other six there is again a tendency for the rates to level off, or to increase slightly. The 30 countries with declining death rates fall into four groups. In five, including Bolivia and British Guiana, the percentage reduction was between 30 per cent. and 50 per cent., in seven, for example Barbados and El Salvador, between 20 per cent. and 30 per cent., and in ten between 10 per cent. and 20 per cent. Honduras is representative of this last group. In the remainder the percentage reduction was less than 10 per cent. Canada is to be found here. Its crude death rate was 8.2 per 1000 in 1954, and 7.8 in 1963. Three of the six countries with higher death rates in 1963 than in 1954 are island territories with populations of less than 9000. The other three countries are Argentina, Cuba and the United States of America. In all three of the latter the increases were small. The actual rates were: Argentina, 8.3 per 1000 in 1954, 8.6 in 1963; Cuba, 5.9 per 1000 in 1954, 6.8 in 1963; United States of America, 9.2 per 1000 in 1954, and 9.6 in 1963.

In the South-East Asia Region annual death rates were available only for Ceylon, Indonesia and Thailand. For all three, however, a declining trend can be reported. In the case of Indonesia, the reduction over the decade was rather more than 25 per cent. For Ceylon and Thailand it was 15.7 per cent. and 18.2 per cent. respectively.

In the European Region 13 countries had somewhat higher rates at the end of the decade than they had at its commencement. On the other hand, 16 had rather lower rates. In no case, however, was the reduction more than 27.2 per cent. Nor did the increase exceed 17.4 per cent.

In five out of six countries in the Eastern Mediterranean Region for which annual death rates could be calculated, the declining trend was evident, the reduction varying from about ten per cent. to nearly 40 per cent., which was the percentage reduction in Jordan.

Nineteen countries in the Western Pacific Region had statistical data covering the period and 16 of them showed reductions. In 14 of them the reduction was marked, ranging from 10 per cent. in the Ryukyu Islands to 50.9 per cent. in the Cook Islands. In the other two, namely Australia and New Zealand, the decline in the death rate was much smaller, being

4.4 per cent. for the former country and 2.3 per cent. for the latter.

The simple statement of changes in the national death rate over a period gives some idea of the improvement or otherwise in the health situation of a country. Much more informative is the study of variations in the actual causes of death. But mortality statistics by causes of death are not available in all the countries of the world, and in some countries are of questionable quality even if recorded. Nevertheless, where the information has been obtained, and provided that it is studied with caution, it can be of considerable importance. Its usefulness lies in that it can direct attention to specific areas of the health field where immediate public health action is required. It can also be of assistance in the initiation and later the evaluation of health programmes.

One particular comparison has been much used in times past, and even now can be very significant. It is the relationship, on a percentage basis, between deaths due to infective and parasitic diseases and the total mortality from all causes. In the majority of the developing countries in Africa, Asia and Central and South America, deaths from the infective and parasitic diseases amount to at least three per cent. and in some cases to as much as 15 per cent. of the total mortality. In the majority of the developed countries of Europe, North America and Oceania the percentage is generally of the order of one per cent.

In the group of developing countries the leading causes of death are to be found under the following headings: infections of the gastro-intestinal tract, influenza, pneumonia, and nutritional disorders. In the developed countries of Europe and North America the three main causes of death are cardiovascular disease in its various manifestations, malignant neoplasms and accidents.

The infant mortality rate, i.e., deaths under one year of age per 1000 live births, has been traditionally and rightly regarded as a good measure of the sanitary condition—in the broadest sense—of a town, an area or a country. The “late” infant mortality rate, which takes into account the deaths from the end of the first month of life to the end of the first year, may be even more sensitive to environmental and social conditions.

However, this refinement is likely to be available only in countries with well-developed statistical systems, and in consequence the customary infant mortality rate continues to be used. But even this rate is not universally available, and under any circumstances must be regarded cautiously if it is to be employed for purposes of international comparisons. Care must be taken to make allowances not only for differences in the completeness of the data, but also for a possible lack of comparability in technical defini-

tions and registration procedures. Nevertheless, the infant mortality rate can be used to show trends in individual countries and even to make comparisons between countries if the necessary allowances and adjustments have been made, and no changes in definition or procedure have occurred during the period under review.

Five out of the six countries in the African Region with fairly comparable annual infant mortality rates throughout the period 1954-1963 were able to record improvement. The 1963 rates were lower than those for 1954 by 20 to 30 per cent. for some of these countries, notably Réunion and Mauritius, but in others the reduction was very small indeed, ranging from one per cent. to five per cent.

In the Region of the Americas reduction of the infant mortality rate was just as frequent, and the degree of improvement equally variable. Twenty-five out of 31 countries which had made their data for the period available experienced declining trends in their infant mortality rates. The decline was 59 per cent. and 66 per cent. for two countries and between 20 and 45 per cent. for 11. For three countries the decline was less than ten per cent.

The two countries in South-East Asia for which data are available (Indonesia and Thailand) recorded substantial reductions of 28 per cent. and almost 40 per cent. respectively.

In practically every one of the countries in the European Region, there was a decline in infant mortality, but the low rates already reached in certain countries made further improvement less dramatic in its impact.

Five countries in the Eastern Mediterranean experienced a declining trend in their infant mortality. But here again the percentage reduction was considerable in some countries, and small in others. The two extremes were 44 per cent. (Cyprus and Jordan) and six per cent. (United Arab Republic).

The experience of the countries and territories in the Western Pacific was comparable with those of the Eastern Mediterranean Region and the Region of the Americas. In 15 out of 18 countries a decline, in no case less than ten per cent., was recorded. In some cases the infant mortality rate was more than halved.

To summarize, it may be said that during the decade 1954-1963 there has been a decline in infant mortality in most countries, although in varying degree. Among countries which had high rates in 1954, two different trends can be noted. In some the improvement has been very substantial and infant mortality rates are now at two-thirds or even half of their previous level. In others the reduction is only small, and the opportunity for much greater improvement has still to be grasped.

Attention must also be directed to the fact that in many developed countries which have achieved a

relatively low infant mortality rate an even further reduction appears to be possible. The relevant rates in Canada, New Zealand and Sweden for 1954 and 1963 illustrate this fact. They are set out in the following table, which also gives the percentage reduction.

	Rates *		Reduction %
	1954	1963	
Canada	31.9	26.3	17.6
New Zealand	24.1	19.6	18.7
Sweden	18.7	15.4	17.6

* Per 1000 live births.

The available statistics, in spite of their limitation, give some indication of the causes of infant deaths. Comparisons over a period of years of the trend of mortality from certain of these causes may help in the evaluation of the efficacy of the health services which have been organized to deal with them. The haemorrhagic and haemolytic diseases of the newborn and the neo-natal disorders arising from certain diseases of the mother during pregnancy can act as such indicators.

Morbidity Statistics

The identification and the knowledge of the incidence and prevalence of illness can provide information which is useful in describing and assessing the health situation in a country. This information is particularly important when it relates to the causes of permanent or temporary incapacity, and is therefore relevant to a country's industrial or agricultural production. Such comprehensive morbidity statistics are unfortunately not available in many countries. The most widely available data are those for the notifiable (and usually communicable) diseases, which constitute only a fraction of the multitude of the "departures from health" which are encountered in a community. Furthermore, even in the field of notifiable diseases, the list of diseases varies from country to country, as do the completeness and accuracy of notification. Nevertheless, valuable information can be gleaned from a study of the data provided by the notification of these diseases. In addition the records of hospital and general practitioners are beginning to supply morbidity statistics of chronic and degenerative diseases and of accidents. For the development of health services such information complements that already available from the mortality records, and is essential for the health planner and administrator. It will therefore be useful to discuss briefly the existing trends in the mortality and morbidity of certain of these conditions, commencing with three of the more important communicable diseases.

Cholera

During the nineteenth century vast pandemics of classical cholera swept for the first time across Asia, Europe and the Americas. This sudden transformation in the character of the disease, which previously had tended to be more or less endemic, occurred at a time when developments in transportation encouraged the rapid movement of people. In the twentieth century cholera has not been observed in the Americas, and since 1923 Europe has remained free from the disease. In 1947, however, cholera broke out in Egypt, where the disease had not been seen since the beginning of the century. With its decline, cholera disappeared also from Africa, and during the past decade has receded to its original endemic foci in the delta of the Ganges and Brahmaputra. Since then the disease has flared up from time to time in India and Pakistan, and in a few other neighbouring Asian countries also. Nevertheless, classical cholera had shown a tendency to decline, even on the Indian sub-continent. The number of recorded cases from all countries and territories was 211 943 in 1950, 64 910 in 1957 and 32 857 in 1960. However, this decline was suddenly reversed in 1961. In addition to classical cholera, cholera caused by the El Tor vibrio began to appear in new areas. This form of the disease, which previously had been endemic only on Sulawesi Island, spread to other islands of Indonesia and appeared in the Philippines and Hong Kong. It then spread north and east, reaching Korea in 1963. Finally, it turned west towards Iran where it arrived in 1965. Table 2 gives some indication of the variations in the incidence of the disease during the period 1960-1964.

The socio-economic implications of cholera are numerous. More than any other disease, perhaps, it is a disease of the low socio-economic groups. The case fatality rate is higher in malnourished communities than amongst well-to-do people, and in the former groups children are particularly liable to fall victims.

The epidemic of cholera which occurred in Hong Kong between 11 August and 12 October 1961 can be quoted to show the nature of the economic burden which may have to be met. A total of 76 notified cases involved the following expenditure:

	US \$
Treatment of cases	68 620
Sanitary services	257 170
Prophylactic vaccinations	66 010
TOTAL	391 800

In addition, there were great economic losses which have to be expressed in lives, production, exports and trade. Cholera control implies improvement of the standards of personal and communal hygiene, the

provision of safe drinking-water, proper waste disposal, and good sanitation in overcrowded urban and rural areas stricken by poverty and ignorance. The application of these measures may help to improve socio-economic conditions and lead to a better standard of living.

Increased traffic and speedy communications, a relatively large number of mild cases and of carriers, the

limited effectiveness of cholera vaccines and other preventive measures, have all contributed to the recent spread of cholera. In the presence of poor sanitation, poverty and the rapid modes of transit of modern times, it is still uncertain what the future may bring. There is no doubt, however, that cholera is once again an actual threat to the health of the world.

TABLE 2. REPORTED CASES OF CHOLERA, 1960-1964

Region	1960	1961	1962	1963	1964
South-East Asia					
countries	5	3	3	4	4
cases	17 083	49 783	26 302	56 238	55 217
of which: India	(15 895)	(48 040)	(25 566)	(51 082)	(53 011)
Eastern Mediterranean					
country (Pakistan)	1	1	1	1	1
cases	15 774	1 319	2 616	4 098	2 040
Western Pacific					
countries	—	4	7	10	—
cases	—	10 354	12 657	4 932	36 391
of which: Philippines	—	(9 908)	(10 842)	(3 953)	(15 647)
World total					
countries	6	8	11	15	14
cases *	32 857	61 456	41 575	65 157	93 648

* In 1953 the world total of cholera cases was 233 922.

Smallpox

Smallpox has ceased to be endemic in Europe, North America and the Western Pacific. It is still endemic in Africa, South-East Asia and part of the Eastern Mediterranean and its endemic foci have not yet been completely eliminated in South America. By far the largest number of cases are reported from South-East Asia, with Africa following considerably behind. Table 3 shows the world incidence of smallpox as reported to the World Health Organization during the period 1950 to 1964. There were two distinct peaks for epidemics; one was in 1951, when 489 922 cases were reported, and the other in 1958, with 243 160 cases. There has been a downward trend which can be regarded as partly due to the effect of smallpox control in individual countries. However, this finding should be carefully analysed, taking into consideration incomplete or delayed reporting from many countries and the long-term cycle of smallpox epidemics.

The ability of smallpox to become more prevalent in endemic countries and to re-establish itself in countries where it has been eradicated should not be under-

estimated. In addition, experience shows that the cost of vaccination programmes, as well as of control measures, is high. Czechoslovakia has estimated that its normal annual expenditure is over US \$1 million and the United States of America has estimated the annual cost to be US \$20 million. It should be realized that after smallpox has been eradicated from the world, the non-endemic countries as well as the endemic countries will not only be free from the danger of smallpox but will also make a long-term saving. These considerations serve to emphasize the importance of a global effort for the eradication of the disease, which it is WHO's proclaimed desire to achieve.

In the African Region, where smallpox is endemic in most of the countries of the sub-Saharan region, the eradication programme has not yet been developed on a regional basis. In consequence, the advantages inherent in the effective synchronization of programmes in a group of individual countries are not enjoyed. From 13 000 to 23 000 cases were reported annually during the period 1959-1963. However, some countries have developed systematic vaccination programmes and, consequently, a substantial reduction

TABLE 3. REPORTED CASES OF SMALLPOX, 1950-1964

Year	Africa		The Americas		South-East Asia		Europe		Eastern Mediterranean		Western Pacific		Total, all countries	
	Cases	Countries *	Cases	Countries *	Cases	Countries *	Cases	Countries *	Cases	Countries *	Cases	Countries *	Cases	Countries *
1950	40 801	31	21 485	16	245 628	7	279	9	23 784	14	3 231	8	335 208	85
1951	25 454	32	9 221	16	363 541	7	420	7	44 602	11	46 684	7	489 922	80
1952	27 372	30	9 301	14	89 597	7	344	7	16 324	7	5 419	9	148 357	74
1953	18 217	28	8 930	13	41 884	7	96	5	8 854	5	6 759	5	84 740	63
1954	20 229	30	11 979	12	50 264	7	124	4	8 087	6	4 825	8	95 508	67
1955	21 374	29	8 348	9	46 349	6	163	4	5 981	6	1 412	5	83 627	59
1956	17 989	31	6 389	8	51 411	6	18	1	10 290	10	789	4	86 886	60
1957	33 214	28	6 220	8	83 475	7	150	5	31 169	14	218	3	154 446	65
1958	13 603	30	4 339	6	174 004	7	27	3	51 131	8	56	5	243 160	59
1959	13 789	27	4 896	7	49 763	6	25	3	9 419	9	68	4	77 960	56
1960	15 597	27	5 158	7	36 805	6	54	3	3 480	8	15	3	61 109	54
1961	23 744	30	8 175	5	50 836	8	31	5	4 076	8	2	2	86 864	58
1962	23 988	33	7 858	7	59 593	7	137	5	4 629	9	0	0	96 205	61
1963	16 535	31	7 126	5	93 088	6	129	5	6 190	6	0	0	123 068	53
1964	12 434	29	3 218	8	38 811	5	0	0	1 128	4	0	0	55 591	46

* I.e., countries reporting cases.

in the number of reported cases has been observed. These countries include Ivory Coast and Upper Volta. In the Americas the eradication effort started in 1950 and many countries became smallpox-free. At present, Brazil remains the principal endemic country. In recent years Argentina, Bolivia, Colombia, Ecuador, Paraguay, Peru and Uruguay have reported endemic or imported cases in limited areas. Endemic smallpox was reintroduced into Peru after it had been free from the disease between 1955 and 1962. In South-East Asia, Ceylon and Thailand have become smallpox-free. The remaining endemic countries are Afghanistan, Burma, India, Indonesia and Nepal, but here smallpox eradication or control programmes have been organized on a regional basis. In Burma there has been a substantial reduction in cases and in India the campaign achieved 420 million vaccinations during 1962-1965. In the Eastern Mediterranean Region smallpox control or eradication programmes are under way in Pakistan, Saudi Arabia, Sudan and Yemen. The programme in Ethiopia is being planned. Of these endemic countries, Pakistan has reported a substantial number of cases in recent years. The rest of the Eastern Mediterranean countries have reported only a few endemic cases. In the Western Pacific, Cambodia has become free from smallpox.

However, despite the efforts of the endemic countries towards eradication, as mentioned above, progress till now has been slow. In 1964 the WHO Expert Committee on Smallpox met in Geneva and reviewed comprehensively the smallpox situation, including the eradication programme. It was re-

affirmed that, as the only source of the virus is man and as vaccination provides good protection for a number of years, the eradication of smallpox in endemic areas is well within the compass of modern preventive medicine.

Tuberculosis

One of the most outstanding achievements of the decade and an example of how major health problems can be approached both by preventive and curative methods has been the relegation of tuberculosis in some countries—but only in some countries—to a place of relatively minor importance.

In certain of the countries referred to—and they are in the main developed countries—the slow decline of tuberculosis as a cause of death has been apparent from the beginning of the present century. But during the course of the last ten years it has become almost precipitous. Of these countries, England and Wales are perhaps as typical as any. In the early years of the century tuberculosis ranked as the leading cause of death, and was responsible for one death in nine. By the quinquennium 1950-1954 that ratio had fallen to one in 20. Between 1960 and 1964 only one in 180 deaths was due to tuberculosis.

Table 4 gives the record of ten countries, both developed and developing, over a period of nearly 20 years. It will be seen that in certain of the developing countries during the period under review the death rates per 100 000 still remained high, and that although they were decreasing, their rate of decline was less than

TABLE 4. TUBERCULOSIS (ALL FORMS): DEATHS AND DEATH RATES IN SELECTED COUNTRIES, 1937-1964

Country	Number of deaths and (in brackets) death rates per 100 000 population							
	Annual averages			1960	1961	1962	1963	1964
	1937-1939	1947-1949	1957-1959					
Australia	2 707 (39.2)	2 132 (27.6)	557 (5.7)	489 (4.8)	447 (4.3)	475 (4.4)	440 (4.0)	413 (3.7)
Canada	6 257 (56.2)	4 744 (37.1)	1 056 (6.2)	823 (4.6)	769 (4.2)	785 (4.2)	756 (4.0)	670 (3.5)
Ceylon	3 591 (61.8)	4 017 (56.7)	1 874 (21.0)	1 619 (16.4)	1 523 (15.0)	1 740 (16.7)
Chile	12 434 (253.0)	12 197 (209.9)	4 084 (54.7)	4 040 (56.1)	4 004 (50.4)	3 898 (47.9)	4 407 (53.6)	3 853 (45.4)
Denmark	1 503 (39.8)	1 021 (24.4)	195 (4.3)	191 (4.2)	176 (3.8)	182 (3.9)	144 (3.1)	113 (2.4)
France	49 480 (118.1)	30 099 (73.5)	11 136 (25.0)	10 086 (22.1)	9 348 (20.3)	9 003 (19.2)	8 744 (18.3)	7 552 (15.6)
Japan	149 272 (208.9)	142 754 (178.0)	37 328 (40.6)	31 959 (34.2)	27 916 (29.6)	27 852 (29.3)	23 302 (24.2)	22 929 (23.7)
Mexico	10 755 (56.4)	11 585 (47.4)	9 353 (28.4)	9 525 (27.2)	9 403 (26.1)	9 799 (26.3)	9 648 (25.1)	9 535 (24.1)
New Zealand	954 (59.4)	774 (42.2)	197 (8.6)	114 (4.8)	134 (5.5)	135 (5.4)	94 (3.7)	96 (3.7)
United States of America	64 889 (50.0)	43 666 (29.9)	12 380 (7.1)	10 866 (6.1)	9 938 (5.4)	9 506 (5.1)	9 311 (4.9)	8 303 (4.3)

for certain developed countries, where the rates were already much lower. It will be noted that no country in either the African or the Eastern Mediterranean Region is included in the list because data of the same completeness were not available. Nevertheless eleven countries in the former region and six in the latter regarded tuberculosis as amongst their present major health problems.

The mortality records of tuberculosis, however, do not give a true picture of the continuing prevalence of the disease. In many of the countries where the tuberculosis death rate is now of the order of four or five per 100 000 per annum, the number of new cases brought to light each year is from 30 to 40 per 100 000 population.

In summarizing the global tuberculosis situation it is probably true to say that there are in the world at present some 15 to 20 million infectious cases of tuberculosis and that the disease causes from two to three million deaths each year. Also, more than 80

per cent. of this burden falls upon the developing countries.

The comment of the most recent WHO expert committee on the subject was as follows:

The Committee noted that the specific tools now available for preventing and curing tuberculosis make it possible to plan and execute effective anti-tuberculosis programmes under practically any epidemiological or socio-economic conditions.¹

Major tactical advances have been made in the fight against tuberculosis since the Second World War. Research in chemotherapy has led to dramatic changes of emphasis and direction in tuberculosis policies. It is clear that in the majority of cases institutional treatment does not have any particular advantage over chemotherapy carried out according to the standard ambulatory schedule. Recent advances

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1964, 290, 3.

in ambulatory treatment have made it even more adaptable to the needs of the average patient.

Similarly, BCG continues to maintain its place as the most effective positive preventive measure against tuberculosis, particularly after the demonstration of the long-lasting and substantial protection it can give under the conditions which obtain in developing countries.

Furthermore, it has been shown that BCG vaccination can be carried out safely without a previous screening tuberculin test and simultaneously with smallpox vaccination. This fact has been useful in facilitating the conversion of BCG vaccination from a mass campaign activity into a routine procedure of the basic health services.

Despite these favourable indications and these new resources, tuberculosis is an important health problem. It is also one of particular relevance to the socio-economic situation of many countries.

Cardiovascular Diseases

Cardiovascular diseases are becoming a universal health problem. There is no doubt that the prolongation of the active life span of man in developed communities depends mainly on the ability to prevent and control the development of arteriosclerosis and its complications in the heart and in the brain. Moreover, rapid social and economic development and changes in the mode of living already foreshadow a similar trend in developing countries.

The chief and usually identifiable cardiovascular diseases are grouped in the following categories in the International Classification of Diseases, and are presented in the order of numerical importance in which they are found in the majority of countries at the present time.

- (1) Arteriosclerotic and degenerative heart disease;
- (2) Vascular lesions affecting the central nervous system;
- (3) Diseases of arteries;
- (4) Other diseases of the heart (excluding those mentioned below);
- (5) Hypertensive heart disease;
- (6) Chronic rheumatic heart disease;
- (7) Hypertensive disease (excluding hypertensive heart disease);
- (8) Congenital malformations of circulatory system;
- (9) Diseases of veins and other diseases of circulatory system;
- (10) Cardiovascular syphilis;
- (11) Rheumatic fever.

In developed countries these diseases probably account for approximately 40 per cent. of the total mortality and this proportion is fairly uniform amongst them. In developing countries, where the incidence of the communicable diseases is still very great, the cardiovascular diseases account for a small proportion of the total mortality, and the relative amount is more variable from country to country.

Arteriosclerotic and degenerative heart disease is responsible in general for about half of all deaths due to cardiovascular disease in the majority of developed countries. In other words, it causes approximately one death in five. The available data show that on the average the death rate from arteriosclerotic and degenerative heart disease is higher for males than for females. The mortality rate becomes appreciable in the age-group 35-44 years. In the succeeding age-group, 45-54 years, it is five times as great, and continues to increase progressively with advancing age.

Several factors have been suggested as being associated with the development of arteriosclerosis and ischaemic heart disease, the pathological catastrophe which has usurped the role of tuberculosis as the modern captain of the men of death. Dietary faults, lack of exercise, tobacco and continuing stress conditions have been assigned some share in the etiological complex. Control of these factors has failed so far to improve the prognosis of subjects with ischaemic heart disease.

Vascular lesions affecting the central nervous system are on the average the cause of over a quarter of the deaths attributed to cardiovascular disease. The proportion is less in some countries but is as high as 60 per cent. in Japan, where they are the leading cause of death. In China (Taiwan) and India, and amongst certain African tribes, they are thought to be a more important cause of death than heart disease of arteriosclerotic origin.

Arterial hypertension is almost universal, affecting every ethnic group at every socio-economic level. It is also the commonest disorder of the circulatory system. Available evidence suggests that infections of the urinary tract and pyelonephritis in hot climates may increase the proportion of hypertension associated with renal dysfunction. Apart from a small number of very primitive populations, hypertension seems to be less common only in native populations which reside at high altitudes. In certain areas with a traditionally high incidence of arteriosclerotic disease, hypertension can accelerate the appearance of vascular changes and increase the risk of coronary heart disease in the middle-aged.

Rheumatic fever has declined considerably in recent years in countries at a high socio-economic level. But it is still prevalent in several European countries,

and is a growing problem in a number of tropical and subtropical areas. Increased movement of individuals and overcrowding with inadequate conditions of hygiene—the slum environment which has followed much recent urbanization—seem to be of greater importance than climate. The disease, though differing from the classical type has, nevertheless, the same sequelae—carditis with serious valvular lesions and subsequent stenosis. Fortunately, modern surgery can correct these disabilities, and should do so before the hazards of adult life have to be faced.

A generation ago syphilis ranked as a major cause of heart disease, but with the advent of penicillin it has become of minor importance. Nevertheless, if the reappearance of the vascular and neurological conditions which characterized the earlier manifestations of the disease is to be avoided, it is essential that syphilis be actively and adequately treated.

There remain a number of rarer cardiovascular diseases of obscure causation which occur predominantly in the tropical belt of Africa, and occasionally in the similar zones of the American and Asian continents. Amongst them—although the infecting agent is known—are the late sequelae of Chagas' disease, the American trypanosomiasis due to infection by *Trypanosoma cruzi*. Many of these conditions are currently the subject of active research which, because of the relative novelty of the pathology disclosed, may help to shed light on the phenomena of the commoner cardiovascular diseases.

The outlook for the subjects of cardiovascular disease is not altogether sombre. Rheumatic fever and its sequelae can be prevented by penicillin. Essential hypertension can be so treated that the incidence of its serious complications, such as ischaemic heart disease and the cerebral catastrophes, can be reduced. The majority of the victims of acute myocardial infarction can be successfully rehabilitated and resume their previous activities.

But the inescapable fact that cardiovascular disease is a major cause of premature death and disability still remains with all its implications for individuals and its impact upon the social and economic life of communities.

Malignant Neoplasms of Trachea, Bronchus and Lungs

One of the most significant developments of the past two decades has been the emergence of the malignant neoplasms of the respiratory system as an increasingly important and even a major health hazard in many countries of the world. The phenomenon has been described as an epidemic, and undoubtedly the increased incidence of these cancers has been or is becoming manifest in more and more countries and in almost every continent. Males are admittedly

more affected than are females, approximately in the ratio of five to one, but the evidence from such countries as the United Kingdom shows that this disparity is beginning to diminish. The ratio of deaths from these malignant conditions to deaths from all causes, and also the specific death rates quoted below, vary considerably from country to country, even when allowance is made for differences in the age and sex structure of the populations. Taking first the overall global situation, in 1963, malignant neoplasms of the trachea, bronchus and lungs were responsible on the average for more than 13 per cent. of deaths due to cancers of all sites and the corresponding average death rate was over 18 per 100 000 population. This information is derived from data made available to WHO by 23 countries in Europe, two in North America, 13 in Central and South America, two in Africa, six in Asia and two in Oceania. There has been an upward trend in mortality for countries in the several regions of the world.

The average death rate for malignant neoplasms of the trachea, bronchus and lungs for the European countries in 1963 was 26.5 per 100 000 population, and on the average 14.6 per cent. of all cancer deaths were due to these forms of malignant neoplasm. For some countries the 1963 rates were more than double those of 1953, and in no European country for which data were available was the increase less than about 40 per cent. It may be interesting to quote specific examples of such increases, and in particular for males. In 1950, the United Kingdom crude male death rate for this group of cancers was 53.6 per 100 000. In 1963 it was 90.2, an increase of approximately 69 per cent. It is also possible to point to countries with very similar social and economic conditions where a striking difference between the respective death rates can be noted. In three of the nordic group of countries the order of male death rates in 1963 was as follows: Finland (58.1 per 100 000); Denmark (46.8); and Norway (18.7). In 1950, the comparable rates for Finland, Denmark and Norway were respectively 38.4, 18.1 and 10.7.

In 1963, the death rates for the two sexes in Canada and the United States of America were approximately 17 per 100 000 population for the former and 23 for the latter country. These rates were respectively 55 per cent. and 56 per cent. higher than the comparable rates in 1953.

The 1963 death rates for Australia and New Zealand were about equal, being 19.4 per 100 000 population for the former and 21.5 for the latter country. In 1953, the rates were respectively 12.0 and 13.7 per 100 000, indicating a relatively greater increase in Australia.

The 1963 death rates for countries in Africa and Asia whose data were available to WHO were low, but the

rates for Israel, Hong Kong, Singapore and Japan were higher, being 10.8, 10.8, 11.4 and 7.0 per 100 000 population respectively. As in other regions of the world, a definite upward trend in mortality has been noticed.

For thirteen Central and South American countries, the average death rate in 1963 for the two sexes was about four per 100 000 population. Here again, an upward trend in mortality is seen. Compared with the early 'fifties, the death rates for Venezuela, Puerto Rico and Mexico were from 50 per cent. to 70 per cent. higher in 1963. The increase in Colombia and Chile over the same period was 8.7 per cent. and 35.0 per cent. respectively.

There is thus evidence of a continuous upward trend. This higher incidence may be partly due to more accurate diagnosis associated with a greater awareness of the existence of the disease. It is difficult to say what portion of the recorded mortality is due to these factors, and it will obviously vary from country to country. It is inescapable, however, that in the majority of countries an appreciable part of the increased incidence is real. The etiological factors are known—they are, in order of importance, the smoking of tobacco, more particularly in the form of cigarettes, and atmospheric pollution. The means of reducing this mortality are also obvious.

Accidents

Reductions in the morbidity and mortality rates due to improvements in the prevention, treatment and control of many diseases, particularly of the respiratory and intestinal infections of childhood and adolescence, have increased the importance—both actual and relative—of accidents as causes of disability and death. In fact, it can be stated that in the great majority of developed countries accidents have established such a dominance that in the age-group from

one to 35 years they now rank as the leading cause of death.

Over the whole life span accidents now rank fourth in order amongst the chief causes of death in many developed countries, and are headed only by the arteriosclerotic and degenerative heart diseases, the cancers, and vascular cerebral catastrophes. Even in the developing countries, they are beginning to increase in importance, and sometimes rank as the sixth or seventh commonest cause of mortality.

Accidents due to motor-vehicles are taking a larger share in the sum total of fatal accidents. They increase in importance with economic and social development, with the opening-up of highways and expanding motorization. In developed countries the proportion of deaths from this cause is in general over 40 per cent. of that attributable to accidents from all causes. In developing countries the proportion is usually lower, ranging from ten to 30 per cent.

But accidents at home are still a frequent cause of death or disability at the extremes of life. Throughout childhood, after the first year of life, they are the outstanding cause of death in most developed countries.

The significance of accidents for individuals and families is hardly measurable in concrete terms. But they also deprive the community as a whole of useful lives and of lives with an expectation of many years of productive work. They are a sad example of economic waste.

As with so many other of the ills to which human beings are exposed, it is not only the fact of death which has to be taken into consideration. The disabilities, permanent or temporary, which result from road traffic accidents constitute an enormous burden on individuals, hospitals, and the national economy. The experience of Great Britain is typical. For every person killed, from ten to 15 are seriously injured and from 30 to 40 can be regarded as minor, but definite casualties.

CHAPTER 3

SOME ASPECTS OF THE EPIDEMIOLOGICAL SITUATION

The five individual or grouped diseases, together with accidents, which were discussed in the previous chapter fall into two separate and contrasting categories. Cholera, smallpox and tuberculosis are still currently and potentially major causes of death and morbidity. It is too early to regard them as being only of historical significance. They are, however, causes of mortality whose powers have been enormously diminished. They are also communicable diseases which have proved to be susceptible of control or, perhaps, even of eradication. They have been replaced by the diseases of the cardiovascular system, the malignant neoplasms and accidents, which have become in their turn the modern "captains of the men of death". At present cardiovascular diseases, cancer and accidents are the most important causes of death in developed countries, and even in developing countries are beginning to overtake and to replace some of the other causes of mortality. Their ranking in the tables of mortality will be maintained until methods of control and prevention have been perfected.

But important and even outstanding as the cardiovascular diseases, cancer and accidents are as causes of death, they are responsible only for a fraction of the ill health and sickness which is the daily experience of millions of individuals in every part of the world. It was said over a hundred years ago that men in general are not greatly troubled by the inevitable fact of their ultimate end, or of its probable cause, but are particularly interested in the diseases which interfere with their daily lives, and therefore with their work and earning capacity. The following sections of this chapter will seek to place on record the present world situation of several diseases which are major causes of sickness and continued ill health—many of them microbiological in origin. Taken together they are responsible for an enormous amount of sickness, disability, and loss of working time. They detract from that enjoyment of health which is the right and inheritance of every human being; and they lay upon governments to an increasing extent the responsibility for providing for their citizens the necessary means of treatment, rehabilitation and prevention.

Communicable Diseases

Malaria

On the basis of the rapid interruption of transmission by the application of residual insecticides which had been demonstrated in the late nineteen-forties and early nineteen-fifties, and taking into account, on the other hand, the danger of the development in anopheline mosquitos of resistance to insecticides, the concept of continent-wide and global malaria eradication through co-ordinated time-limited campaigns was formulated. It was finally adopted and affirmed by the Eighth World Health Assembly in 1955.

The First Report on the World Health Situation, which was nearest in time to the Eighth World Health Assembly, discussed the whole question of malaria and of the eradication of the disease as contrasted with its control. By the time of the Second Report further information had become available on the development of the world-wide malaria eradication programme and in the present report the data are brought up to 31 December 1964.

Malaria is still the chief health problem in many tropical and subtropical countries and of significant importance in the majority of the rest. Half of these countries, covering three-quarters of the population of the originally malarious areas of the world, are already engaged on or have completed malaria eradication campaigns. Many of the administrations are now somewhat less concerned with the morbidity and mortality caused by the disease and are concentrating their attention on the operational requirements inherent in the successful conclusion of any eradication programme. These include, at the later stages, the epidemiological services needed to track down and eliminate the disease in the remaining human carriers.

The years 1957-1961 witnessed the implementation of the resolution of the Eighth World Health Assembly. The majority of malaria eradication programmes now in operation were started in 1957 and important additions were made from 1958 onwards, notably the very large eradication programmes in India, Indonesia and Pakistan. The operational status of malaria

eradication programmes on 31 December 1964 is shown in Table 5. From this table it will be seen that of the total population of 1560 million in the originally malarious areas of the world from which information is available,¹ 444 million (i.e., 28.5 per cent.) live in areas from which malaria has been eradicated and a further 723 million (46.3 per cent.) are covered by malaria eradication programmes; but 25.2 per cent. are not yet protected. A large proportion of this unprotected population is in Africa, where

some 185 million people out of the population of approximately 207 million in the malarious areas are not yet benefiting from an eradication programme. Not only are the technical problems in Africa very considerable, but the majority of the emerging independent countries in this continent are not yet in a position to embark on eradication programmes because of a lack of trained staff and health facilities, and because of other administrative problems and difficulties.

TABLE 5. STATUS OF MALARIA ERADICATION AT 31 DECEMBER 1964¹

	Originally malarious area	Malaria claimed to be eradicated	Malaria eradication programme under way			No eradication programme under way	
			In attack and consolidation phase	In preparatory phase	Total	Total	But with pre-eradication programmes
Population (in millions)	1560	444 ^a (28.5%)	657	66 ^b	723 (46.3%)	393 (25.2%)	195
Number of countries	147	24 ^c (16%)	56	1 ^d	57 (39%)	66 (45%)	25

^a Including the population of malaria-free areas in countries where eradication is not complete.

^b Including the population of areas where the programme in the country is partially in the preparatory phase.

^c Includes only countries where eradication is claimed to be total.

^d Wholly in preparatory phase.

In order to build up the facilities, pre-eradication programmes are being undertaken in these countries. They will have as their objective the creation of the health infrastructure which will ultimately serve to carry the full malaria eradication campaign.

While, as has been said above, health administrations of countries with malaria eradication programmes are not free from worries arising from the conduct of the campaigns, the reduction of malaria morbidity under the impact of the world-wide eradication campaign has been tremendous. The statistical presentation of this fact is fraught with some difficulty; official morbidity statistics based on ordinary notification are neither complete nor reliable, particularly in regard to malaria. On the other hand, malaria eradication programmes comprise among their activities in the later stages special malaria case-detection procedures as a part of surveillance operations. During the phase of total coverage with insecticide spraying (attack phase), these case-detection procedures are gradually built up, and attain comprehensiveness and excellence during the last year of the phase. When spraying is withdrawn they continue as a part of surveillance operations in the next phase, the consolidation phase, which is followed by the main-

tenance phase in the areas where full eradication has been achieved.

For the withdrawal of spraying and the commencement of the consolidation phase, rigorous epidemiological criteria have been established and are being followed. Amongst other criteria is the requirement that the annual parasite incidence should not exceed one case per 10 000 of the population, of whom about 10 per cent. have had a blood slide examination during the year.

Taking these facts into consideration, the trend of malaria morbidity is presented in Table 6 in terms of population covered by programmes which reached the consolidation or maintenance phase during the thirteen-year period 1952-1964. The table shows, by WHO regions, the populations of all countries with malaria eradication programmes which have reached these terminal phases, either for a part or for the whole of the country. Some countries in which consolidation or full eradication has been reached in large areas have not been included if the major progress towards consolidation was achieved before

¹ Information not available from Mainland China, North Korea and North Viet-Nam.

1953. The United States of America and Venezuela are examples of such countries. Table 6 shows that, in the countries to which it refers, areas with a total population of approximately 700 million have reached the consolidation phase and beyond.

It can be stated with confidence that malaria incidence before the era of country-wide spraying or eradication programmes was at least 20-100 per 1000 per year in areas of temperate and subtropical climate, and at least 100-200 per 1000 in tropical areas.

TABLE 6. MALARIA ERADICATION:
POPULATION OF AREAS IN CONSOLIDATION AND
MAINTENANCE PHASES, 1964

Countries and territories * in	Originally malarious areas	Areas in consol- idation phase	Areas in main- tenance phase	Areas in consol- idation and main- tenance phases: total
(population in thousands)				
Africa	929	462	378	840
The Americas	47 851	29 447	2 059	31 516
South-East Asia	494 727	252 703	94 638	347 753
Europe	299 457	29 934	260 639	290 673
Eastern Mediterranean	22 253	9 030	4 594	13 624
Western Pacific	22 263	4 537	12 335	16 872
Total	887 480	326 113	374 753	700 866

* Countries and territories included:

Africa — Mauritius, Swaziland;

The Americas — Argentina, Bolivia, British Guiana, British Honduras, Canal Zone, Colombia, Costa Rica, Dominica, Ecuador, Grenada, Guadeloupe, Guatemala, Honduras, Jamaica, Mexico, Peru, St. Lucia, Surinam, Trinidad and Tobago;

South-East Asia — Afghanistan, Burma, Ceylon, India;

Europe — Albania, Bulgaria, Greece, Hungary, Portugal, Romania, Spain, Turkey, Union of Soviet Socialist Republics, Yugoslavia;

Eastern Mediterranean — Iran, Israel, Jordan, Lebanon, Syria;

Western Pacific — China (Taiwan), Malaysia (Sabah and Sarawak), Philippines.

The annual number of malaria cases before eradication campaigns were initiated can therefore be estimated, for the population of approximately 700 million defined above, as at least 35 million, assuming a minimum annual incidence of 50 per 1000. As against this, the annual number of cases in the same population in 1964 can be safely estimated as a maximum of 65 200, on the basis of an incidence of 0.2 per 1000 per year in areas under consolidation only.

Leprosy

In the First Report on the World Health Situation it was suggested that in the year 1957 the number of sufferers from leprosy throughout the world was probably 12 million, and possibly as high as 15 million.

But such figures were, and remain, largely conjectural, as accurate information regarding the prevalence of the disease is only available in a relatively small number of countries.

The latest available information indicates that there are in the world over 2 800 000 registered sufferers from leprosy, of whom about 1 928 000 are under treatment, regular or otherwise. The estimated number of leprosy cases, however, is over 10 500 000.

It is the expressed opinion of the WHO Expert Committee on Leprosy in its third report that, where the prevalence rate of known cases is around one per 1000 population or higher, leprosy becomes an important public health problem.¹ It can therefore be assumed that in 67 countries and territories in which the prevalence rate is at least five per 1000, leprosy is a matter of major concern to the health authorities. In these countries nearly 740 million people are exposed to the risk of infection.

The control of leprosy is based primarily on the early detection and treatment of infectious cases, mainly on an ambulatory basis, so as to reduce the load of infection in the community. Early treatment also helps to prevent disabilities. Emphasis is placed on rehabilitation, and health education is essential. Nowadays there is only a very limited place for the old and indiscriminate practice of the permanent segregation of patients, though provision must still be made for the temporary isolation of infectious cases.

Because of the slow action of sulfone therapy and the practical question of keeping patients under regular treatment for sufficiently long periods, the control of leprosy is difficult. However, in the 37 countries which had UNICEF/WHO-assisted projects in January 1965 certain positive results have been obtained. The infectiousness of the disease has been reduced, early treatment has prevented disabilities in a significant number of patients, and over 169 000 persons have been released from treatment because it was no longer required.

Nevertheless, it seems to be a fact that where control measures are not applied efficiently, the tendency is towards an increase in the number of cases.

There is an urgent need to expand research into every aspect of leprosy. Trials on the preventive value of BCG vaccination and chemoprophylaxis in leprosy are in progress, and may provide additional measures for the control of the disease.

Trachoma

Trachoma remains the greatest single world cause of progressive loss of sight. Ten years ago it was estimated that approximately 400 million people were afflicted with the disease. This estimate tends to rise

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1966, 319, 12.

(a) because cases of trachoma have been found, sometimes in large numbers, in population groups not previously surveyed and (b) because of the ever increasing number of young children who survive and are exposed to infection in endemic areas.

Intensive microbiological, epidemiological and therapeutic research is being directed towards the development of effective methods of control. Although early studies with experimental trachoma vaccines gave promising results, there has been little further progress and the outlook for active immunization in the control of trachoma is at present discouraging. However, simplified treatment schedules with antibiotics have been evolved and these, combined with health education, are being widely and effectively applied in many countries. But, because of the huge numbers affected or at risk and the vast geographical areas to be covered, only a fraction has as yet been touched by organized campaigns.

It is encouraging to note that in a number of developing countries trachoma, although remaining highly endemic, is changing progressively to a milder form with fewer disabling complications. This phenomenon can most probably be attributed to a gradual improvement in standards of living, health consciousness and hygiene. In many endemic areas, however, trachoma remains a major socio-economic and public health problem.

Yet apart from estimates as to the prevalence of the disease, the number of cases actually notified is formidable. In 1962 in Sudan, with a population of nearly 13 million, 294 595 cases of trachoma were reported. In Iraq in the same year (population seven million) the total number of notifications was 193 588.

Yaws

Yaws, though less widespread in its destruction than malaria, leprosy and trachoma, is of great importance in the world's tropical belt. The intensive mass penicillin campaigns of the period 1957-1960 have undoubtedly resulted in a substantial reduction in the prevalence of the disease, and certainly of its overt clinical manifestations. Nevertheless, though yaws is no longer the most serious public health problem in any country, it is still a disease giving rise to concern in at least ten.

During the mass campaigns assisted by UNICEF and WHO some 150 million people in 45 countries were examined and 30 million were treated with long-acting penicillin. At present the results of these campaigns are being subjected to epidemiological evaluation, and the residual yaws problem is being reviewed so that future policy to deal with it may be determined.

From the outset and as a matter of general principle, WHO has stressed the importance of developing rural health services which can participate in or take over the surveillance and consolidation phases which mark the conclusion of a mass eradication campaign. It is obviously uneconomical to use the machinery of the mass campaign when the prevalence of a disease has been reduced to a low level. Actually this transfer of responsibility was first highlighted as an indispensable objective in the case of the mass campaigns against yaws. However, the operation has not always been completely successful. The availability of the rural health services has varied. They have often been slow to develop and in some cases, although established and functioning, they have not been able to accept the responsibility for conducting one or more surveillance programmes. As a result, in certain instances the mass campaign has had to be continued for several years, or even—though rarely—to be reinstated.

One other factor has recently appeared to influence yaws control policy. The improvement in environmental conditions has been relatively slow in many countries and in consequence has not contributed to the interruption of the transmission of infection to the extent which had been expected. Recent research has also shown that treponemes may persist in lymph glands following treatment and apparent cure. Furthermore such treponemes are viable, and are capable, at any rate, of infecting laboratory animals. This combination of facts gives cause for concern. It indicates the persistence of infection in the individual and in the population, notwithstanding community-wide penicillin treatment, and suggests the possibility of the recrudescence of yaws on a smaller or even a larger scale. It emphasizes the need for the assessment by epidemiological and serological studies of the present prevalence of yaws infection in the countries which have reached the consolidation phase of the eradication programme. Such studies in Eastern Nigeria, the Philippines and Thailand have shown that transmission of infection continues to take place in the child population at large at a time when the available health services have been reporting only isolated clinical cases. It is becoming clear that, while reporting of clinical cases of certain diseases by health services can never be more accurate than the disease awareness of the population itself, serological studies can throw light on the continuing prevalence not only of yaws, but of many other infections, through multi-subject exploitation of serum samples.

Bilharziasis

In the ranking of parasitic diseases, bilharziasis is now regarded as second only in importance to malaria

as a cause more particularly of ill health, but also of death. While its prevalence is on the wane in some countries, as for example in Israel and Japan, this progress is minor when account is taken of the areas involved elsewhere and the number of their inhabitants at risk. In the Second Report on the World Health Situation it was stated that at least 20 countries regarded the disease with marked concern, if not as a major public health problem. In their replies to the questionnaire for the Third Report a similar opinion was still expressed by 20 countries.

In the majority of endemic areas, the infection is either static or is actually spreading. Recent surveys have established three facts. First, there is an increased prevalence in some known endemic areas. Secondly, the infection has been spreading to immigrants in newly developed areas. Finally, the existence of foci not previously reported has been proved, as for example, a small focus of what appears to be *Schistosoma haematobium* in the Ratnagiri District of Maharashtra State in India, a focus of *S. japonicum* in southern Thailand, and foci of *S. haematobium* in Lebanon and Libya. Such discoveries will continue to be made in relation to the large-scale irrigation and hydro-electric schemes which are a necessary feature of economic development, for example in Brazil and in many African and Eastern Mediterranean countries.

There is increasing evidence to suggest that bilharziasis is an important cause both of morbidity and of mortality, particularly among young people. Systematic studies of individuals and communities have established that severe and even fatal lesions of the urinary tract, liver and lungs due to bilharziasis are very common in the United Arab Republic. It is known also that in parts of South America as many as 12 per cent. of hospital autopsies show that death was a consequence of bilharzial infection. In the United Republic of Tanzania, about 20 per cent. of its young people have already suffered what could prove to be serious and irreversible damage to the urinary tract. All these pathological changes are common in young children, but their effects become more serious in adolescent and early adult life.

Despite these facts and the knowledge that probably some 180-200 million persons throughout the world are infected by schistosomes, the public health importance and economic significance of bilharziasis have not hitherto been fully appreciated. It was known that bilharziasis control must be based on comprehensive epidemiological surveys of molluscs as well as of human beings and other vertebrate hosts and on improved irrigation and drainage coupled with the use of molluscicides, and that health education was essential. Nevertheless, control of the disease tended to be difficult and disappointing. Recently, however, two possibly major discoveries have been made. In 1965,

proof was obtained through large-scale control trials in the United Arab Republic, that transmission can be interrupted in irrigated areas by twice-yearly applications of molluscicides. In the same year encouraging results were obtained in patients by the administration of a nitro-thiazole derivative which might possibly be used in mass chemotherapy.

Filariasis

Filariasis is also a parasitism of major public health importance in many countries. It is of particular concern in India, where over 120 million people live in endemic areas and over five million people are estimated to be affected clinically. In the Pacific area, the disease is to be found on almost every one of the tropical and subtropical islands. At present, the infection due to *Wuchereria bancrofti* is the major filarial problem. In Ceylon a population of approximately 2 250 000 is exposed to the risk of this infection. In Japan, where filariasis has been successfully controlled in the main islands, about 2 per cent. of the population in the remaining areas have been found to harbour microfilariae. Similarly, in China (Taiwan) the microfilarial rate was 3.8 per cent. in 85 000 individuals examined, while clinical manifestations were found in 3.3 per cent. of a population of 30 000 persons. Microfilarial rates obtained in other recent surveys indicated such incidences as: 4.4 per cent. amongst approximately 250 000 persons in the Philippines, 6.8 per cent. in a population of 25 000 in Tahiti, and 14 per cent. in 51 000 inhabitants of the Ryukyu Islands. *W. bancrofti* is also a problem of increasing importance in Africa.

In Malaysia, it is estimated that 350 000 persons live in *Brugia malayi* areas. About half this number inhabit heavily infected areas and 30 to 40 per cent. of them have microfilaraemia and 3 to 4 per cent. elephantiasis of the legs.

Present control measures for filariasis are based mainly on mass administration of diethylcarbamazine. Vector control, usually by means of insecticides, is used in some countries, while others have had recourse to a combination of these methods. They have proved satisfactory in some but not in all countries.

Trypanosomiasis

In 1962, when the World Health Organization decided to take a more active part in the fight against African trypanosomiasis, a warning was sounded which has unfortunately proved to be justified. The slowing-down, if not the complete interruption of surveillance and control activities in some countries following the withdrawal of experienced trained personnel has almost certainly been a factor in the rapid

progression of the disease in some parts of the African continent. In areas of the Democratic Republic of the Congo, where the prevalence rate had fallen to an extremely low level, namely 0.1 per cent., the number of infected people according to recent surveys has increased forty-fold. In certain foci, as many as 14 per cent. of the population examined were found to show signs of infection. If this advance were to continue at the same rate, the situation would become catastrophic.

The movement of population in Africa has greatly increased since 1962. Large-scale economic development schemes have caused the massive migration of people to some areas, while in others whole population groups have moved for economic or other reasons. Implicit in these movements is the risk of trypanosomiasis spreading into new territories or creating an epidemic situation in areas which were previously hypoendemic. In East Africa, for example, localized but severe epidemics have occurred recently around Lake Victoria Nyanza, and a permanent *Trypanosoma rhodesiense* focus has now formed in Muhinga Province, Burundi. In the countries of West Africa where continuous surveillance is carried out by an intergovernmental organization, the disease is receding progressively. However, dangerous conditions continue to prevail in certain parts of West Africa, for instance, in Northern Nigeria and in the Guinean and Liberian portions of Kissi Land.

Apart from its effects on the health of human beings and animals, trypanosomiasis can have disastrous consequences on the economy of infected areas, often frustrating all the efforts which have been made to improve the deficient diet of African populations. In order to achieve and consolidate control of the disease, it is necessary to gather more precise information than is at present available as to its epidemiology, to develop simple mass diagnostic techniques, to find better drugs for its treatment, and to evolve more efficacious and economical methods of eliminating the tsetse fly.

Mention must also be made of the American trypanosomiasis (Chagas' disease). It is regarded by at least four South American countries as being of public health and economic significance, especially because of the cardiac sequelae in middle life.

Helminthiasis

One of the features of the replies to the questionnaire for the Third Report on the World Health Situation has been the frequency with which countries have included the helminthiases amongst their public health problems. No fewer than 19 countries in describing the situation used the general term of "intestinal parasitoses", but an additional eleven

specifically referred to *ancylostomiasis* and its increased incidence.

The helminthiases with the widest and most general distribution are those whose infective stages are generated in soil. Specific information as to their incidence is now available from certain countries. In a recent investigation of 8000 faecal specimens carried out in Texas, United States of America, 33 per cent. were found to be positive for *Ancylostoma*. In Puerto Rico a similar faecal study yielded infection rates of 80 per cent. for *Trichuris*, 31 per cent. for *Ascaris*, 37 per cent. for hookworm and five per cent. for *Strongyloides*. In Cuba the principal cause of diarrhoea and enteritis among infants under two years is *Trichuris*, with a 100 per cent. infection rate in certain areas of the country. In the United Arab Republic about ten per cent. of the whole rural population are considered to be infected with hookworm. These examples, although quoted from a limited number of countries, nevertheless give a rough indication of the situation in many parts of the world.

To define the situation precisely it is necessary to obtain better basic data from a larger number of countries as to the identity, distribution, and prevalence of these various helminths and the intensity of infection caused by them. When this information has been properly collected it often shows that these soil-transmitted helminthic infections cause an amount of disease and ill health which materially reduces the working capacity of large numbers of people. Under such circumstances control becomes a necessity. The classical approach to the control of these infections is through environmental sanitation. However, it will be several years before a satisfactory level of environmental sanitation can be achieved in many parts of the world. An alternative and more immediate possible solution is therefore the development and application of effective therapeutic drugs.

Other Parasitic Diseases

Among other parasitic diseases which are considered by a number of countries as being of public health importance are onchocerciasis—which has been called the "blinding" filariasis—leishmaniasis and the mycotic diseases. The last group includes *tinea capitis*, which in some areas affects 20 per cent. or more of schoolchildren and pre-school children.

Enteric Fevers and Dysenteries

Although no country has placed either the enteric fevers or the dysenteries at the head of its list of major health problems, no fewer than 45 countries in their replies to the questionnaire for the Third Report on

the World Health Situation regard the enteric fevers as infections which cause them varying degrees of concern, and 46 are of a similar opinion with regard to the dysenteries. Moreover, these countries are to be found in every one of the six WHO regions.

The enteric fevers are undoubtedly more prevalent in the developing countries of Africa and South America, where they are a relatively common infection of all age-groups. On the other hand 16 of the 30 countries in the European Region regarded these infections as important causes of morbidity, and two of them had undertaken mass vaccination on a large scale. In the developing countries, however, it is apparent that such mass vaccination campaigns are rarely possible because of the lack of facilities and staff.

Both amoebic and bacillary dysentery have a high incidence in many of the developing countries, affecting young and old, and causing considerable loss both of working capacity and, to some extent, of lives. Bacillary dysentery is also very prevalent in certain central European countries, but here it is possible that increased epidemiological and laboratory activity have contributed to its wider recognition.

Studies in a number of countries have shown that enteric infection and diarrhoeal diseases are one of the most important causes of high infant mortality. It has been proved also that wherever mortality in children up to five years old is high, there is a concomitant heavy incidence of the diarrhoeal diseases and the dysenteries. This is the experience of the majority of developing countries, where the mortality from these infections in children up to five years old may be ten times greater than in economically more advanced countries.

Early rehydration treatment is being used to an increasing extent, and is saving many lives, but the further extension of its availability depends upon the existence of staff with the appropriate skills, and the necessary equipment.

Prevention of these diseases calls for improved water supplies and waste disposal, better food control, higher standards of personal hygiene and health education.

Infectious Hepatitis

To some extent better reporting also accounts for the apparent increase in infectious hepatitis. More than 50 countries and territories in their replies to the questionnaire for this report regarded it as a disease of epidemiological significance, and of these countries no fewer than 22 were in the European Region. It is therefore clear that viral hepatitis remains an important cause of illness and loss of working time. It is also one of the few communicable diseases in

which little advance is being made with regard to epidemiology or to methods of prevention. Many countries have reported increases in the incidence in the past decade, while others, particularly in Scandinavia, have noted its decline. Long-term changes in incidence have been observed at intervals over the past century, and part of the decrease or the increase may be explained in this way. Occasionally outbreaks associated with contaminated food (especially shellfish) or water supplies are reported and are sometimes extensive. Serum hepatitis associated with transfusion of blood and blood products or with contaminated medical or dental equipment continues to occur. The contribution which such specific hazards make to the grand total of cases is probably small and mainly preventable. With regard to control measures, the second report of the WHO Expert Committee on Hepatitis¹ pointed out that the relative resistance of the virus to heat and chemicals creates special problems in dealing with contaminated articles and with water supplies. Until the etiological agent or agents are isolated and the pathogenesis of the disease is more clearly understood, much change in the present incidence of the disease cannot be expected. Here again the best means of prevention lies in good sanitation and personal hygiene, with particular emphasis on the disposal of excreta.

Poliomyelitis

As was pointed out in the Second Report on the World Health Situation, the decline of poliomyelitis morbidity during the period 1957-1960 had been noted in a number of countries where the specific inactivated vaccine had been used on a large scale. But a sharp change in the poliomyelitis situation in many countries followed the introduction of the oral vaccine containing attenuated poliovirus, mostly from Sabin's strains. Very large mass trials of the Sabin vaccine in the USSR in 1959-1960² had proved its safety and effectiveness. In 1960-1964 immunization with live poliovaccine was introduced on a large scale in many European countries, the United States of America,

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1964, 285.

² Smorodintsev, A. A. et al. (1959) Virological and immunological characteristics of vaccinal infection in children inoculated *per os* with a live poliomyelitis vaccine made from the Sabin strains. In: Pan American Sanitary Bureau, *Live poliovirus vaccines*, Washington, D.C., p. 312.

Chumakov, M. P. et al. (1960) On the course of mass immunization of the population of the Soviet Union with the live poliovirus vaccine from Albert B. Sabin's strains. In: Pan American Health Organization, *Live poliovirus vaccines*, Washington, D.C., p. 413.

Chumakov, M. P. et al. (1961) Some results of the work on mass immunization of the population in the Soviet Union with live poliovirus vaccine from Albert B. Sabin's strains. In: Academy of Medical Sciences of the USSR: Institute of Poliomyelitis and Virus Encephalitis, *Oral live poliovirus vaccines*, Moscow, p. 19.

Japan and in some territories in Africa, Asia, and Central and South America. Approximately 350 million people in all parts of the world have now received oral vaccine, including more than 100 million in the USSR and about 100 million in the United States of America.¹ As a result of these great efforts, poliomyelitis is no longer a problem in most European countries, the United States of America and in a few other countries. This is well illustrated by Table 7. There are even countries and territories, for example Czechoslovakia and the Baltic republics in the USSR, which have remained free of paralytic poliomyelitis for three to four years.

In many tropical and semi-tropical countries the incidence of poliomyelitis is increasing both clinically and also as shown by serological studies. For example, out of 68 countries for which information was available, a morbidity rate of at least five per 100 000 population was reported in 33 in the period 1950-1956, whereas in 1957-1964 such rates were reported in 38. Again, in 20 countries in Africa, Asia, and Central and South America, the curve of incidence followed a continuing upward trend from 1951 to 1964.

As to the age incidence of poliomyelitis, more than 70 per cent. of cases in tropical and subtropical countries occur in children under four years of age, but in the United States of America and Canada only 30-35 per cent. of cases are to be found in this age-group.

TABLE 7. POLIOMYELITIS SITUATION IN SOME EUROPEAN AND NORTH AMERICAN COUNTRIES IN 1964, COMPARED WITH ANNUAL AVERAGES FOR 1951-1955

Country	Number of cases	
	1964	Averages 1951-1955
Austria	6	607
Belgium	2	475
Czechoslovakia	0	1 081
Denmark	2	1 614
Finland	4	342
Netherlands	16	601
Norway	21	981
Switzerland	6	956
United Kingdom (England and Wales)	37	3 872
Canada	21	3 922
United States of America	122	37 864
Total	237	52 315

¹ Sabin, A. B. (1965) Oral poliovirus vaccine: history of its development and prospects for eradication of poliomyelitis. *J. Amer. med. Ass.*, **194**, 872.

Respiratory Virus Infections

In the Second Report on the World Health Situation the reference to respiratory viruses was limited to influenza and the three pandemics of 1950-1951, 1952-1953, and 1957. In their replies to the questionnaire for the present report only a few countries laid stress upon influenza as an important health problem, and where they did so they tended to refer to influenza-like disease rather than to specify an influenza virus strain. An additional feature was the frequent reference to the effects of respiratory viruses in general and their causal relationship to other pathological conditions in the patients affected. No fewer than 54 countries, however, included the influenza virus and the other respiratory viruses in their lists of infections liable to give rise to some concern, both private and public.

Recent developments in laboratory techniques for the isolation and identification of respiratory viruses have greatly extended knowledge of their importance.

Studies in developed countries have shown that these viruses cause infections which are often severe in young children, though they are less severe in adults. However, because they occur and recur so frequently—one person may have two or more infections in a year—the respiratory viruses cause much absenteeism among adults and when they assume epidemic form as, for instance, happens with influenza, may even disorganize the normal life of a part or even the whole of a country.

Recent studies organized by WHO in tropical areas have shown that the viral pathogens responsible for respiratory infections in these areas are similar to those responsible for infections in temperate climates. The old belief that respiratory infections were much more frequent and severe in cold or temperate climates than in warmer areas does not seem to be true, and measures effective for the control of these diseases will—when developed—be applicable to persons in warm as well as temperate climates.

Venereal Diseases

The Executive Board, at its thirty-fourth session in May 1964, adopted a resolution on the subject of endemic treponematoses of childhood and venereal diseases. This resolution urged Member States "to exert a determined effort to maintain adequate and effective measures to reduce the incidence of the endemic treponematoses, particularly those of childhood, and the venereal diseases, and, where indicated, to increase their efforts to combat, at the national level, the recrudescence of these infections;" and requested Member States "to report to the Organization the extent of present programmes and the nature of planned activities to achieve these objectives".

This resolution was brought to the notice of governments in August 1964, and stimulated the provision of a considerable body of information which has since been supplemented by the replies to the questionnaire for the Third Report on the World Health Situation. All the information available to WHO from these and other official sources is utilized and to some extent consolidated in the paragraphs which follow. At the outset it can be said that approximately half of the 147 governments whose country reviews are presented in Part II of this report expressed their disquiet at the trend of the venereal diseases in recent years. This trend and the concern it engendered are world wide, and can be noted in every WHO region to an almost equal extent.

In the listing of their major public health problems, at least six governments—those of Australia, Barbados, Denmark, France, Greece and Poland—gave the venereal diseases a high place, either for their country as a whole or for some part of it. In 13 countries or territories—Antigua, Basutoland, Bechuanaland, British Guiana, Cambodia, Canada, Canal Zone, Falkland Islands (Malvinas), Jamaica, St Lucia, Surinam, Sweden and the United Republic of Tanzania—gonorrhoea was the most frequently notified of all the communicable diseases in 1963-1964, and in nine—Australia, Belgium, Chad, Colombia, France, St Pierre and Miquelon, Trinidad and Tobago, United Kingdom (England and Wales), and the Virgin Islands of the United States of America—it was given the second place. Syphilis was placed first in only three—British Honduras, Mauritania and the Virgin Islands of the United States of America—but it was the second most frequently notified communicable disease in seven: Antigua, Cambodia, Canal Zone, Comoro Archipelago, Jamaica, Madagascar and Malawi.

On the basis of these notifications and information from other sources, the prevalence would appear to be high. For example, in the Seychelles in 1964 approximately 40 per 1000 of the population received treatment for gonorrhoea, and in Cambodia in 1963 the notification rate was 20.5 per 1000. Notification rates for syphilis were lower. In 1963 the reported incidence of new syphilitic infection was 7.4 per 1000 population in the Virgin Islands of the United States, and in the following year 7.7 per 1000 in British Honduras. The notifications for all forms of syphilis amongst the 780 000 inhabitants of Mauritania numbered 40 094 in 1963 and are to be contrasted with the 35 062 notifications of malaria. The situation in Mauritania has persisted for several years and is probably unique.

Apart from any presentation of statistical data, a government's views on the existing situation were often expressed in terms of general concern at the increased incidence of venereal disease, and its pre-

valence amongst young people was particularly stressed. In Australia, for example, it was stated that 24 per cent. of all cases of gonorrhoea and syphilis occurred in the 15-29 years age-group. In Canada in 1963 five per cent. of all cases of syphilis and 14 per cent. of gonorrhoeal infections were found in the earlier age-group of from 15 to 19 years. For the next age-group, namely 20-29, the comparable percentages for syphilis and gonorrhoea were 42 per cent. and 66 per cent. respectively. In more general terms, the experience of India was to the effect that among communicable diseases, venereal disease is a major problem, next only to malaria and tuberculosis.

In addition to the 34 countries and territories already mentioned, concern about the venereal disease situation was also registered, more particularly with regard to the recrudescence of syphilis, by Czechoslovakia, Fiji, Finland, Indonesia, Iran, Israel, Italy, Japan, Kuwait, Niger, Norway, Pacific Islands Trust Territory, Puerto Rico, Republic of Viet-Nam, Thailand, Tonga, United States of America and Venezuela.

The reporting of the new cases of any communicable disease results almost inevitably in the obtaining of minimal figures. The limitations of reporting systems, particularly those which seek to deal with the venereal diseases, are well known. For example, a survey carried out in the United States of America with the assistance of 170 000 practising physicians indicated that only 11.3 per cent. of cases of infectious syphilis were reported. Applying this ratio to the number of cases actually reported, the real total of cases of early infectious syphilis in the United States of America in recent years would appear to have been about 225 000 per annum, which suggests an incidence rate of 125 per 100 000 population. The precise incidence of gonorrhoea is even more prone to be understated. The WHO Expert Committee on Gonococcal Infections estimated in 1962 that some 60 to 65 million new cases of gonococcal infection occur annually throughout the world.¹ At the same time such complications in the female as salpingitis take place more extensively than was previously and commonly believed. Syphilis prevalence rates are almost universally higher in urban than in rural areas. In one Indian city of four million people some 20 000 cases of infectious syphilis, equivalent to an incidence rate of more than 570 per 100 000 population, were diagnosed in 1964 at six public health service clinics. It is also clear that urbanization, migration and industrialization all predispose to the spread of the venereal diseases, and these social trends all tend to expose young people, particularly in developing countries, to special risk.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1963, 262, 9.

It was mentioned in the section on yaws that treponemes have been found to persist in a viable state in lymph glands where treatment has not been effective. In some areas in developing countries and possibly also in countries in a more advanced stage of development, only symptomatic treatment may be feasible at present because of local difficulties. Such treatment of early infectious syphilis may be inadequate, resulting in the persistent presence of treponemes, and in due course the later sequelae of the disease.

It is clear that a number of factors may be involved in the so-called recrudescence of syphilis. The failure of reporting systems, insufficient epidemiological facilities at the disposal of private physicians, and inadequate penicillin treatment, coupled with reduced activity on the part of health authorities, are all contributing causal factors. But on the other hand, even in countries where action has been continuous and facilities have been provided on a large scale, these diseases seem to elude control and incidence rates are rising. Furthermore, even where health education of the young has been extensive, the effort has not so far prevented the spread of the epidemic wave.

In brief, the world trend in venereal infections undoubtedly gives rise to general concern. The incidence of syphilis and gonorrhoea continues to increase and intensified population movements by air, land and sea favour the rapid spread of infection. The changes in the economic structure of communities through migration, urbanization and industrialization have facilitated casual contacts and the spread of venereal disease. The changing behaviour pattern of young people has also to be taken into account. It is increasingly recognized that the control of venereal diseases requires a multidisciplinary approach. In addition to therapeutic measures and the organized administrative arrangements of public health departments, there are social, economic and psychological factors to be considered. And it is quite possible that completely different techniques in health education may have to be evolved.

Other Morbidity Factors

Malnutrition

In the Second Report on the World Health Situation it was stated that at least 33 governments had expressed concern as to the nutritional state of their population or of some of its groups, and that in three countries it was regarded as the most important public health problem. In the replies to the questionnaire for the Third Report on the World Health Situation the expression and incidence of concern were very

similar. Three governments regarded malnutrition as undoubtedly the most important health hazard with which they had to contend, and 30 others placed it relatively high in their list of imminent problems. Almost without exception these replies came from the governments of developing countries.

Quantitative information on the magnitude of this problem is not available for all the countries concerned. But estimates based on the reports of the limited number of surveys so far available indicate that the most important and widespread disorders of malnutrition are protein-calorie deficiency disease, hypovitaminosis A, nutritional anaemias and endemic goitre. Of these, protein-calorie deficiency disease and hypovitaminosis A principally affect weaning infants and pre-school children. It is estimated that between one and ten per cent. of infants and children in many developing countries suffer from grave forms of protein-calorie deficiency, with a case mortality of between ten and 20 per cent. even given appropriate medical care. A fairly large proportion of these children, particularly in South-East Asia, also suffer from hypovitaminosis A, leading to partial or complete loss of vision. The consequences of nutritional deficiencies in young children are often precipitated and aggravated by infection; there is sufficient evidence to show that respiratory and gastro-intestinal infections act synergistically with malnutrition to produce severer forms of illness than each one acting alone. This is evident from the high mortality among children aged up to four years, which is reported from most developing countries, and to which reference has already been made. Furthermore, behind all this established and recorded mortality and morbidity there is a vast body of subclinically malnourished children whose number it is impossible to estimate.

Nutritional anaemias, principally of the iron deficiency type, are widespread in developing countries, especially among women of child-bearing age. In certain countries ten to 20 per cent. of women in the low socio-economic group suffer from varying degrees of anaemia. Megaloblastic anaemia of nutritional origin, due either to folate or to vitamin B₁₂ deficiency or both is not uncommon, especially among pregnant women. In all types of nutritional anaemias there is reason to believe that underlying malnutrition, together with parasitic infection of the gastro-intestinal tract, are the responsible causal factors in most places.

According to a recent estimate, nearly 200 million people suffer from endemic goitre. Several mountainous and submontane regions are peculiar in the sense that soil and water in these regions are deficient in iodine. Hence vegetable and animal foods grown in these regions are also deficient in iodine, leading to endemic goitre in the human population. Although

prevention is technically simple, namely by the use of iodized common salt, failure to adopt preventive measures is responsible for the fact that this form of goitre continues to affect an appreciable proportion of the world population.

Mental Health

Specific references to the mental disorders and the whole question of mental health services are met with rarely in the replies of developing countries to the questionnaire. This is not to be taken as indicating a lack of interest in mental health in these countries, for there are examples of pioneer work in this field in Africa and in the Western Pacific. Amongst developed countries, Australia, Belgium, Canada, Federal Republic of Germany, Greece, Ireland, Japan, Luxembourg, New Zealand, Poland and the United States of America have all indicated a desire to take as it were a new look at the organization and administration of their mental health services, and are seeking to exploit to the full all the advances in treatment which are now available. This desire is also shown in certain instances by the introduction of legislation on modern lines, which may not only alter the nomenclature of mental disease, but may also simplify the mode of admission to and voluntary departure from the therapeutic milieu of the hospital. In brief, there is evidence not only in the countries named but in many others of a more liberal approach to the care of the mentally sick. There is a growing tendency to integrate mental care services with those provided for patients suffering from other forms of disease and disability. Evidence of this is seen in the frequent use of general hospitals as the site of psychiatric out-patient clinics. It is clear from the statistical data furnished that these facilities, as well as those of the psychiatric out-patient departments of mental hospitals, provide an increasingly acceptable service.

In a number of countries greater reliance is being placed on community care, operating in association with the social services, as a supplement if not a replacement for institutional treatment. The advantages which can accrue from this development are considerable both for the patient and the responsible health authority, but it is obvious that this somewhat radical change in therapeutic tradition is still being studied carefully and hopefully.

In some island communities concern has been expressed at the problems which appear to arise from their isolation—alcoholism and mental deficiency being particularly in mind. But the question of mental retardation, and the importance of the early diagnosis of signs of mental inadequacy, are also amongst the problems of several of the larger de-

veloped countries. It is evident that the increasing prevalence of alcoholism and narcotic addiction are also the cause of considerable concern in many countries, both developing and developed.

In general it can be said that slowly but surely there has developed an almost universal appreciation of the role that psychology and psychiatry can play not only in alleviating the personal troubles of individuals, but also in providing at any rate an approach to the solution of some of the problems of the modern world.

Dental Health

A number of countries in their replies to the questionnaire for the Second Report on the World Health Situation indicated their awareness of the importance of dental disease. That awareness is still manifest, and to a slightly increasing extent, in the replies to the most recent inquiry. The emphasis, as before, is on the major dental diseases, dental caries and periodontal disease.

Dental caries has been called a disease of civilization. Developed countries in the temperate zones continue to struggle with this health problem, and in recent years have been able, in one way or another, to give more attention to dental health and dental care.

Water fluoridation provides an example of one method of attack. As a caries preventive measure it has made slow but steady progress since 1960. The advance has been most noticeable in the Americas, but has also been observed in the European and Western Pacific Regions. Furthermore, it is evident from the statistical information furnished by governments that despite staffing difficulties more facilities for dental treatment are being provided through the public health services—in hospitals, schools or independent units.

A significant change appears to be taking place in some developing countries in the tropical zones. Populations which until recently had a relatively low incidence of dental caries are the subject of a rapid increase in the prevalence of the disease. This situation, coinciding with the shortage of dental care personnel, is producing serious effects on the dentition, with an increase in the number of individuals who become edentulous in the early years of adult life. Increased urbanization and changes in the diet giving a higher content of refined sugar have been regarded as the underlying causes of this rise in caries prevalence. It has been observed more particularly in the urban areas of certain African countries and the islands of the Southern Pacific.

Periodontal disease, another obstacle to dental health, is the most frequent cause of tooth loss after the middle of the third decade of life. It constitutes

the major dental health problem in some of the tropical countries of Africa and South-East Asia. In developed countries the problem has gained special recognition because of its universal prevalence. To some extent also it reflects a saving of teeth from caries in early life.

Dental manpower shortage and the high cost of dental care are the commonly cited factors preventing a quicker expansion of the dental care network. Some countries have been approaching the problem through

an expansion in the number and output of dental schools and through various mechanisms for increasing the productivity of dentists. Others have introduced certain types of dental auxiliaries trained to perform some preventive and/or curative dental operations. Still other countries have been utilizing a combination of both approaches. The problem remains acute, especially in the well-developed countries which are now anxious to improve the levels of oral health of large sections of the population.

CHAPTER 4

MAJOR HEALTH PROBLEMS

The questionnaire for the First Report on the World Health Situation invited as a contribution to the national background information a "narrative description of present main health problems and their trends". The request in the questionnaire for the Second Report was more specific. It asked for:

"... a brief description of the major public health problems still to be solved in the country in order of magnitude, including where appropriate how this has been assessed (e.g., sample surveys of the population, reporting of cases as seen at health establishments, special surveys in mass campaigns, etc.)."

This request was repeated in the questionnaire for the Third Report, and in addition governments were invited to assign an order of priority, if it were possible to do so. Replies were received in specific terms from 86 governments, and are analysed in the paragraphs which follow.

It is interesting to know how governments approach the questions of reviewing their various health problems, of assessing them, and finally of giving them individually some order of priority. On this matter the reply of the Government of China (Taiwan), though setting out only one method of attack, gives some enlightenment. The government recognizes that Taiwan, with its rapidly growing population, is confronted by a number of urgent health problems. They are listed in order of importance, as follows:

- (1) rapid population growth;
- (2) exposure to major epidemic invasion, e.g., by cholera;
- (3) tuberculosis;
- (4) poor sanitation, leading to a high incidence of intestinal parasitosis;
- (5) insufficient public health knowledge;
- (6) low-quality foods and drugs;
- (7) absence of industrial health facilities;
- (8) increasing incidence of epidemic disease of the central nervous system;
- (9) shortage of personnel, particularly midwives.

Reviewing the relative priority of these problems from the angle of feasibility of attack, the Government

has applied such criteria as high economic justification; existence of "popular" felt needs; importance as a cause of morbidity and mortality; the availability of means of solution at a reasonable cost; the need for programmes aimed at prevention.

In the light of these criteria, the highest priority has been assigned to reorganization of services; communicable disease control; tuberculosis control; family planning; environmental sanitation; industrial health.

The Canadian Government, in its reply to the questionnaire for the Second Report for the period 1957-1960, outlined its point of view as follows:

"In a country such as Canada, with well-organized health services, a high standard of living and resources ample enough to contemplate the progressive extension of the benefits of modern medicine and of environmental improvement to its citizens, it is not easy to isolate more than a few subjects which can be regarded as major problems. There are, however, five important subjects... to which increasing attention is being given. They are: cancer in all its aspects, planning for the medical, social and economic needs of the aged, the study of the chronic and degenerative diseases, mental illness, and the prevention of accidents."

In 1961 the Canadian Government appointed a Royal Commission on Health Services which, when it reported in 1964, took the whole question of Canada's major health problems a stage further. Its views are summarized in the following words:

"In brief... we have been successful in controlling the most deadly communicable diseases including tuberculosis. The chronic diseases—cancer, heart disease, psychiatric disorders, diseases of the nervous system and diabetes—have shown little or no improvement and in many cases increases, as have accidents, allergies, arthritis, and the often minor but frequent diseases of the respiratory and digestive systems." ¹

Also mentioned was the need for reducing maternal, post-natal and infant mortality, for measures to prevent blindness and for the early detection of physical and mental abnormalities in the young child. There was also the excessive loss of infant and young adult life in the special ethnic groups of Indians and Eskimos.

¹ Canada, Royal Commission on Health Services (1964), *Report*, Ottawa, Duhamel, vol. I, 157.

Tuberculosis, although greatly reduced, has an incidence amongst them ten times greater than the national experience. But in those communities social and economic considerations were also major factors in the health situation and medical measures were not the only remedy. Although the influence of dietary inadequacy was not so dramatically demonstrated in Canada, where there is an abundant food supply, as it is in some less favoured parts of the world, nutritional problems did exist. They occurred in some isolated communities, and amongst certain vulnerable individuals, e.g., the elderly man or woman living alone.

These are only two examples of the procedures employed by governments in determining and cataloguing their health problems. Whatever the method adopted—and they have ranged from a simple statement of obvious deficiencies and needs intuitively arrived at, to an elaborate, statistically based, and closely studied survey of the whole of the national health situation—countries have not found it difficult to set out what they regard as their own particular priorities in the health field.

Obviously it is possible to classify the majority of the problems under a comparatively small number of heads, and some problems tend to be more commonly shared than others. But the total number of individual problems which governments have considered to be causing anxiety or at any rate to merit special attention is no less than 46, many of which are the particular concern of one government only.

The list of major health problems presented by a government does not necessarily correspond precisely to its existing health situation. In the majority of cases, however, it can be regarded as giving a fairly comprehensive picture of the health situation, which at the same time emphasizes the important danger points and the deficiency areas. There are however countries, like New Zealand, where the situation is generally satisfactory, and the statement of health problems is in essence an enumeration and assessment of potentially dangerous health hazards before they assume the proportions of major problems.

It is not proposed to list the 46 individual health problems already referred to or to indicate their respective frequency. Broadly classified, they fall into the following ten groups, which are given in the order of importance in so far as it can be determined from a study of the reports and comments received from 147 countries and territories:

- environmental deficiencies;
- malaria;
- tuberculosis;
- malnutrition;
- helminthiases, including bilharziasis;

communicable diseases (exclusive of malaria, tuberculosis and venereal diseases);
 chronic degenerative diseases and accidents;
 administrative and organizational deficiencies (including personnel deficiencies);
 venereal diseases;
 mental health.

Regional Profiles of Commonly Shared Problems, 1963-1964

The reviews in Part II of this report give the individual record for each country or territory as assessed by its own government. These obviously differ in detail, but on a regional basis a common pattern tends to emerge. A very tentative attempt has therefore been made to draw what may be described as regional profiles of the health problems and deficiencies which many of the countries in a region are sharing. These regional profiles take into account not only the statements of major health problems, but also the general content of the country reviews.

African Region

For the African Region of WHO the profile is drawn from the experience of 28 countries. By 19 of them malaria was regarded as a major health problem and by ten it was given top priority. Tuberculosis was placed next in order by 17 countries, only three of which, however, regarded it as predominantly important. Leprosy, the helminthic diseases and bilharziasis, and the diarrhoeal diseases and dysentery were given almost equal ranking by several countries, but only bilharziasis was given first place, and that by one country only. So far the emphasis has been on the problems created by disease, but the various defects and deficiencies of administration and organization could not be overlooked and were regarded as significant by six countries. Two countries were concerned about the internal organization of their health services; and three wished to extend and improve their rural health services. Three regarded their deficiencies, both in the numbers of their health service personnel and in the facilities for their training, as serious matters. Two countries saw these deficiencies as a paramount problem.

Trypanosomiasis, the venereal diseases and malnutrition were each regarded as major health problems by at least six countries. The disorder of nutrition most frequently encountered was protein-calorie deficiency in weaning infants, but questions of uneven distribution of foodstuffs were also of concern to some governments. One country stated that malnutrition was its outstanding problem and had accord-

ingly established a permanent nutrition bureau to deal with it. Smallpox was given high ranking by three countries, and two of them regarded it as the chief health problem. Several other diseases—meningitis, yaws, the enteric fevers, trachoma and infectious hepatitis—were noted, along with accidents, as major problems by one or two countries, but none of them was considered as of first priority.

It is interesting to observe that of the five countries which included the deficiencies of their several environments amongst their major problems, two gave them first place. In all five cases inadequate or polluted water supplies constituted one of the health hazards. Inadequate provision for waste disposal and insanitary housing were also the subject of complaint in three countries. No mention was made by any country of the chronic degenerative diseases.

The general picture which emerges from this catalogue of diseases and sanitary wrongs is of a region where inevitably effort must primarily be concentrated on the control of communicable disease. Nevertheless it is clear that such control will require enormous expenditure on basic sanitary improvements and on the training of the necessary personnel, and that the attainment of these objectives will be facilitated by the skilful planning of health services and by the availability of financial resources.

Region of the Americas

With regard to the Region of the Americas, it is probably advisable to deal separately with the problems of Canada and the United States of America, as they differ materially in certain respects from those of the countries of Central and South America and the Caribbean, although they also share a number of features with those countries.

In the United States of America, cardiovascular disease in its various manifestations, cancer and accidents are the cause of seven deaths out of ten each year, and constitute the main health problems of this community of nearly 200 million persons. In 1964 no other cause of death was responsible for more than five per cent. of the total mortality. Tuberculosis caused 8100 deaths, which was equivalent to 0.45 per cent. of the total. Communicable diseases, as a result of the control of poliomyelitis, diphtheria and tetanus, are no longer the cause of active concern except in certain rural areas. As an exception to this statement, however, the venereal diseases must be mentioned, with specific reference to the resurgence of syphilis. But broadly speaking the major health problems lie in other fields.

There is the question of the organization and financing of medical care services and, as part of this problem, provision for the aged and chronically sick.

In analysing the reasons for "draft" rejections the United States of America, like the United Kingdom at the beginning of the present century, is beginning to feel that many of these rejections might have been avoided had there been a better system for the early detection of physical defects in schoolchildren. Allied to this problem is the general question of the dental health of the American public.

Underlying all these problems are the shortages in medical manpower—including in that term not only doctors, but nurses, physical therapists and the various categories of technical personnel.

The problems of Canada are very similar, though varying in detail and in emphasis. The four main causes of death are identical and their predominance is almost the same for they account for 66 per cent. of the total mortality. On the communicable diseases, the view of the Canadian Royal Commission was that "this group has lost much of its former significance". To maintain this situation, however, the public health services must be continuously active. Venereal diseases and infectious hepatitis remain unsolved and ever-growing problems. Reference was also made by the Royal Commission to the problems caused by the psychiatric disorders. It considered that the large volume of hospitalization demanded and the constant increase in the admission rate are disquieting factors. The problem of the handicapped is still present, and the incidence of dental disease is very considerable. There are also the regional health problems of the special ethnic groups of Indians and Eskimos and the organizing of services for their health care. In many specialist fields there is a dearth of personnel and certain necessary services can only be expanded if more qualified people become available.

The profile of the 36 countries in Central and South America and the Caribbean from which replies were received must be sketched on different lines from those of the countries of the African Region and of Canada and the United States of America.

As a major health problem malnutrition, which was the stated concern of 16 countries, took precedence over the communicable diseases, environmental deficiencies and administrative and organizational difficulties. Malnutrition is in effect a state of physical ill health due to a variety of causes and deficiencies which the countries concerned have taken active steps to study and to remedy through the establishment of the Institute of Nutrition of Central America and Panama (INCAP).

The second place in the order of importance was shared by environmental deficiencies, the diarrhoeal diseases and venereal infections, each of which was designated by 13 countries. In eight countries the venereal diseases were regarded as the chief problem,

while in six this degree of importance was assigned to diarrhoeal diseases. In another four, environmental deficiencies were indicted, the urgent features in the environmental field being impure and insufficient water supplies, and the absence of adequate arrangements for waste disposal.

Malaria was regarded as a cause of major concern in ten countries.

It is a tribute to the high standard of public health administration in these countries that only five of the 36 included administrative and organizational matters in their list. And where they did so it was to mark the lack of personnel, or to emphasize the need for closer association of the preventive and curative health services, or to stress their desire for improved statistics.

It is perhaps in accordance with the general trend of events in this group of countries that the chronic degenerative diseases, mental disorders or alcoholism were regarded as major health problems by four of them.

South-East Asia Region

The seven countries in the South-East Asia Region for which information is available are Burma, Ceylon, India, Indonesia, Maldives Islands, Nepal and Thailand, with a total population of approximately 620 million. Their problems have a common pattern. In all the countries environmental deficiencies are outstanding, and in two they are regarded as the chief and basic cause of the majority of health problems. Equally important are the diarrhoeal diseases and the dysenteries, which derive to a large extent from the persistence of the environmental evils of impure water and inadequate and inefficient disposal of waste.

Next in order of importance are tuberculosis, malaria, leprosy and filariasis, each of which was selected by several countries as constituting a major health problem. Filariasis, in particular, is apparently beginning to cause increasing concern in Burma, Ceylon and India. Smallpox, cholera and trachoma —the first two because of their epidemic propensities, trachoma because of its importance as a cause of blindness — are each regarded as major hazards by two countries.

Malnutrition, though obviously prevalent throughout the Region, is specifically mentioned only by Ceylon, Indonesia and Thailand. In Ceylon the problem is due to actual dietary deficiencies in certain age-groups. In Indonesia, these deficiencies are aggravated by lack of knowledge as to the nutritive value of certain foodstuffs and by distribution difficulties.

Everywhere in the Region there is also a lack of health service personnel. Considerable efforts have been made, notably in India, to establish new medical

schools and nurse training institutions, but Thailand is the only country to stress the deficiency. It is interesting to note that both Ceylon and Thailand are concerned about the high incidence of cancer in their respective countries and that each has organized diagnostic and treatment services to deal with it.

There remains finally the urgent question of population pressure which is felt by five countries to a varying extent, and is the expressed and special concern of Ceylon, India and Thailand. In India it is not so much a question of a very high annual rate of natural increase. It is the cumulative effect of the operation of that rate of increase in the vast population in the reproductive age-groups which is so disastrous.

European Region

The profile of the European Region takes into account the views and fears of 30 countries in that region. Questions of administration and organization claim the maximum amount of attention and are the concern of 12 countries. These are followed fairly closely by cancer, cardiovascular disease and the venereal diseases. Each of these three groups of diseases was regarded as of major significance to the public health in at least nine countries. The cardiovascular diseases were assigned the highest priority by two countries and the venereal diseases by one.

Slightly behind these three groups of disease came tuberculosis, respiratory virus diseases, and infectious hepatitis. Each of these was an important cause of mortality in at least 11 countries. It seems clear that in the countries of the European Region the respiratory virus infections replace the diarrhoeal diseases of the tropical zones.

Tuberculosis would appear to be the most important, but much reduced, representative of that great volume of communicable disease, including scarlet fever, diphtheria, typhus and the enteric fevers, which was the major contributor to the general mortality in the middle decades of the nineteenth century. In a few countries small pockets, as it were, of scarlet fever and the enteric fevers still persist. Poland, for example, has considered it expedient to inaugurate a mass immunization campaign in respect of the latter group of diseases.

To revert to the administrative and organizational fields, one country gave the highest level of priority to an increase in its hospital beds, and two others to the general extension of health services to the rural districts. But the need for more hospital accommodation, especially for geriatric cases, was shared by at least five countries. Other extensions of services which were regarded as important were in the fields of maternal and child health, school health and industrial

health. Perhaps the most significant field in which deficiencies were indicated was that of health service manpower. Denmark regarded its relative lack of qualified medical personnel as increasingly serious. Switzerland found its supply of hospital nurses too small, and a matter of constant concern to the responsible authorities.

In several other countries with responsibilities for widespread rural communities the overall establishment of personnel was considered adequate, though at the same time it was felt that there might be a maldistribution of personnel because of the reluctance of essential staff to leave their urban amenities.

Finally, in 11 countries questions of environmental deficiencies or defects were given quite high priority. The deficiencies were the almost universal ones of bad housing, impure and insufficient water supplies, and inadequate arrangements for waste disposal. These were particularly related to the rural areas, but they were also found in towns. Industrialization, however, has introduced new nuisances in the form of serious pollution of water by chemical wastes, and pollution of the atmosphere by smoke and other deleterious substances. There are also the hazards associated with the use of radiation sources or radioactive materials.

Inadequate supervision of the production and sale of food and increasing use of insecticides which contaminate foodstuffs were also causes of concern to two countries. Four countries put noise high in their list of nuisances.

Eastern Mediterranean Region

The Eastern Mediterranean Region, where 14 countries provided information, shares features of both the African and the European public health profiles.

Malaria and tuberculosis appear as the outstanding diseases; the first is a serious cause of concern in eight countries, the other in ten; malaria is allotted the highest priority in four countries and tuberculosis in three. The diarrhoeal diseases and the dysenteries follow closely and are designated as major health hazards in seven countries. Trachoma is given high priority in six countries, in each of which its endemicity has prompted the introduction of a diagnostic and curative programme. Malnutrition, somewhat surprisingly, is regarded as of significance to the public health by only two countries.

In no country are environmental deficiencies stated to be of major importance. In three countries concern is felt about the impurity of the water supply and the inadequate latrines. In a fourth, Israel, the new hazard of industrial contamination of the atmosphere is the cause of complaint. Five countries mention

the movement of people, either as pilgrims or as migrants in search of industrial employment. Kuwait draws attention to a somewhat unusual cause of urban congestion, namely the popularity of its free national health service, which has proved extremely attractive to the inhabitants of neighbouring territories.

Seven countries have important administrative and organizational problems. One country regards the general reorganization of the administration of its health services, and the removal of redundancies and overlapping, as matters of the very highest importance. The same country is also concerned about the lack of hospital beds in its rural areas. But the main administrative problems are the shortages of personnel, chiefly doctors and nurses, the insufficient training facilities, and the need for an adequate number of staff in the rural areas. Cyprus places its deficiencies in medical and nursing manpower at the head of all its health problems.

It remains to be mentioned that three countries included cancer or the cardiovascular diseases in their list of major health problems, but at a relatively low level.

Western Pacific Region

In the widespread Western Pacific Region it has been possible to review the health problems of 30 countries. As in the case of the Region of the Americas, it is advisable to detach three countries, Australia, Japan and New Zealand, from the group and to consider them separately. In these three countries the health problems, with certain minor differences, are comparable to those of the developed countries of the European Region and of North America. Arteriosclerotic and degenerative heart disease, cancer and accidents, and, in the case of Japan, vascular lesions affecting the central nervous system, are the chief causes of death. Furthermore, the morbidity associated with these conditions makes considerable demands on the well-organized medical care which is available. All three countries have to make extensive provision for the care of the mentally sick. In Australia, venereal disease and alcoholism are both of increasing importance, and the control of narcotics is one of New Zealand's problems. The dental health of the population is also a matter of concern to the Australian Federal Government and the constituent states. Both Australia and New Zealand have special problems relating to indigenous populations and are concerned to provide them with the same high standard of medical care as is available to their other citizens. In its northern territories, Australia has also the problem of controlling communicable diseases such as malaria and trachoma, which do not arise elsewhere in the continent. None of the three coun-

tries escapes trouble from the environment. The main sources of concern are industrial pollutions, housing and water supply.

In the other 27 countries the emphasis is on the communicable diseases, with tuberculosis in the lead. Of the 24 countries which included tuberculosis in their lists of health problems, five ranked it as the most important. Leprosy, and the group of diarrhoeal diseases and dysentery, were each given a relatively high place by 11 countries, and malaria and filariasis by eight. The shadow of cholera El Tor hangs over this region and is regarded as at least a potential danger by six countries. The recrudescence of the venereal diseases is beginning to be felt almost universally and 12 countries expressed their concern about them. One country in which gonorrhoea and syphilis were first and second in the list of notified communicable diseases regarded them as constituting its most urgent health problem.

As in Australia, dental ill health in the shape both of caries and periodontal disease are particularly common in the island communities—four of which regarded them as of some but not of major significance. One country, however, drew attention to the early age at which many people become edentulous. These island communities are prone to be swept by epidemics of respiratory virus infections, principally influenza, and five of them regarded these visitations very seriously. Six countries rate their nutritional problems as serious. One stated that 40 per cent. of its child inhabitants between the ages of one and three years were malnourished. The difficulties arise from inadequacies in the quantity, quality and suitability of food. In at least three of the island communities there is also evidence of metabolic disturbance, as for example in Guam, where obesity is unusually common. Deficiencies in the administrative organizational fields are rarely the subject of complaint. On the other hand 11 countries feel that their environmental conditions raise major health problems. They are regarded by five as requiring the highest possible priority for attention. The causes of complaint are the common deficiencies in housing, water supply and waste disposal. Finally, in five countries the question of population pressure is given high priority, and in China (Taiwan) it is seen as the most important problem of all.

Other Major Health Problems

Not all the 46 major problems which were enumerated by governments fall readily into the ten groups which have been defined, or can be regarded as amongst the "communicable diseases most frequently notified". Several of these problem conditions are now only the concern or interest of one or two countries, but they may become important considerations

for many more in the course of the next decade. Human rabies, for example, is now the most important health problem in Grenada. It is of increasing significance in certain areas of Europe and of South America. Hydatidosis has been a matter of concern in Cyprus, while ancylostomiasis is apparently recrudescing in several countries in Africa and South America and in some of the Mediterranean countries.

Some of these potentially important national health problems are more widely distributed, though still only affecting a relatively small number of countries. Alcoholism appears in this category and is increasingly recognized as a major social evil. This is evident not only from the fact that at least nine countries have mentioned it specifically as such, but also from the more frequent appearance of appropriate therapeutic institutions in the list of health service establishments. There are also references to narcotic addiction, but these are much less common.

Some indication of the greater realization by ministries of health of the needs of the mental health services is seen in the fact that no fewer than 12 countries, six of them in Europe, regarded mental disorders and mental subnormality as major health problems. One European country considered the reorganization of its mental health services as its most immediate responsibility in the health field.

Dental health and the need for more health education are less frequently referred to but each of them is regarded by nine countries as requiring greater attention.

The problems associated with and arising out of urbanization and industrialization are the cause of growing concern in every region, and more than 20 countries assigned them various degrees of priority, though only two at the highest level. The motivating causes of concern, as spelled out, were remarkably similar. They are discussed in greater detail in the following chapter. Urbanization, particularly but not exclusively in developing countries, can throw an almost unsupportable burden on the local health and sanitary services.

Population Pressure

The problem of rapid growth of population and the pressure it exerts on the economic situation and on standards of living and health presumably remains for the countries that expressed their concern at the time of the Second Report on the World Health Situation, although only one of them has again specifically referred to it. Among other countries faced with that problem, replies to the questionnaire for the Third Report show Ceylon, China (Taiwan), Colombia, Fiji, French Polynesia, the Republic of Korea, Thailand and Tonga.

Population pressure does not appear to be an invincible concomitant of a high rate of annual natural increase. Admittedly in certain cases births and deaths are not fully or accurately recorded, and the rates per 1000 population based on them, and thus also the calculated rates of natural increase, may be open to question. It is possible, owing to the fact that deaths are generally more accurately recorded than births, that the actual rate of increase is sometimes underestimated. However, a statement of the rates of natural increase actually reported from the six WHO Regions may be of interest.

In the African Region, there is as yet very little available information for the period under review, but in the ten countries for which such natural increase rates have been calculated they would appear to range from an annual rate of 1.6 per cent. in Basutoland to 3.35 per cent. in Réunion. The average would appear to be approximately 2.6 per cent.

The rates for Canada and the United States of America were 1.59 and 1.16 per cent. respectively. Elsewhere in the Region of the Americas information was available for 35 countries, where the rate ranged between 1.35 per cent. in Argentina and 3.95 per cent. in Surinam. Fourteen countries—British Guiana, British Honduras, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Venezuela and the Virgin Islands of the United States of America—had rates varying between approximately 3.0 and 3.7 per cent., and for the remainder 2.2 per cent. would appear to be the average.

In the three countries in South-East Asia where the data were available the rates were as follows: Ceylon, 2.57 per cent., Indonesia (selected areas), 1.57 per cent., and Thailand, 2.73 per cent.

The European situation differs materially from that of any other region. Apart from Albania, Algeria, Gibraltar and Iceland, where the rates were 2.91, 3.68, 1.66 and 1.82 per cent. respectively, no country had a higher rate of natural increase than 1.3 per cent. The lowest were Hungary and Luxembourg with rates of 0.31 and 0.42 per cent. respectively. The rates for the other 24 countries for which information is available were of the order of 0.92 per cent.

In the Eastern Mediterranean Region the range was from 1.5 per cent. in Somalia to 4.93 per cent. in Kuwait. The United Arab Republic, with 2.34 per cent., was typical of the other seven reporting countries.

Information was provided by 24 countries in the Western Pacific Region. American Samoa, with the comparatively small population of 20 800, had the highest natural increase rate. In 1964 it was 4.19 per cent. It can be contrasted with the rates for Australia, Japan and New Zealand, which were 1.16, 1.08 and

1.53 per cent. respectively. For the majority of the remaining countries the average was about 2.5 per cent.

These various national rates should be read and considered alongside the list of countries already mentioned which definitely regard population pressure as inimical to their economic development and health situation. It is obvious that "population pressure" can exist even when the natural increase is relatively small. It is obvious also that there are many countries with high rates of natural increase which—at the present time—are not feeling the weight of their increasing population. It would appear therefore that there can be other causal or contributing factors which operate apart from the natural increase. In some instances, as in several island countries, geography is the determinant, in others immigration may be the activating force, and in India the major factor is the massive size of its population.

Manpower

The references in the Second Report on the World Health Situation to manpower deficiencies in the staffing of the health services were relatively infrequent. On this occasion they are much commoner and more comprehensive. Altogether 21 countries spread over all the regions regarded these deficiencies as detrimental to the efficient working of their health services, and three felt they were their most urgent problem. In the Second Report the demand was almost entirely for more doctors and more nurses. These are still the two categories in which the shortages are greatest, but the demand for midwives is larger than before. There is also a definite lack of the specialized skills of X-ray and laboratory technicians, reflecting the increasingly scientific background of the health and hospital services. Depending to some extent on local circumstances and the existence of medical schools and nurse training institutions, the statement of these deficiencies is usually accompanied by a request for improved training facilities.

→ The best indicator of the staffing position is probably still the doctor/population ratio, for broadly speaking a dearth of doctors is almost certainly accompanied by shortages in other categories of health service personnel.

Every region would appear to have what may be termed a regional "mode" of provision of medical personnel, though the range of provision may be considerable. In the African Region the range is very extensive indeed. In certain island communities like Réunion and the Seychelles there is one doctor for every 3000 inhabitants. In Niger the ratio is one to 63 325. A ratio of one to 12 000 can be regarded in Africa as a fairly high rate of provision. The regional

mode would appear to be of the order of one to 21 000.

In the Region of the Americas the range is less extensive. Apart from some small island communities, the highest rates of provision are found in Argentina, Canada and the United States of America, which had doctor/population ratios of one to 670, 890 and 720 respectively in the period under review. They were followed fairly closely by Cuba, with one to 1210, and Puerto Rico and Venezuela with one to 1300. At the other extreme were Haiti, Honduras and St Lucia, which had ratios of one to 14 200, 9250 and 7000 respectively. For the majority of other countries in Central and South America ratios varied between one to 2000 and one to 5000.

In the South-East Asia Region the doctor/population ratios for the six countries reporting on this point were: Burma, one to 9400; Ceylon, one to 4640; India, one to 5800; Indonesia, one to 36 000; Nepal, one to 46 000; and Thailand, one to 7560.

In the European Region the picture is one of a high level of provision. With the exception of Albania, Algeria and Turkey, whose doctor/population ratios were one to 2300, 8500 and 3200 respectively, every reporting country had a ratio of at least one to 1500 in the period under review. The USSR, with one doctor for 435 inhabitants, had the highest rate of medical staffing, but nine countries had between one to 500 and one to 750, and 11 had ratios between one to 750 and one to 1000.

The 14 countries reporting from the Eastern Mediterranean Region showed a very wide range in their doctor/population ratios. Israel, with its ratio of one to 418, was much more adequately provided

for than any other, although Saudi Arabia had one doctor to 510 inhabitants and Kuwait one to 860. At the other extreme Sudan had one to 29 500, which, however, rises to one to 12 370 if medical assistants are included. The United Arab Republic, with a ratio of one to 2500, was rather better than the regional mode of one to approximately 5000.

The range of provision in the Western Pacific Region is again considerable. Australia and New Zealand had doctor/population ratios of one to 740 and one to 680 respectively, while at the other extreme there were Cambodia, with one to 20 000, Laos with one to 56 600 and Viet-Nam with one to 28 835. A few countries had ratios between one to 3000 and one to 7000, but there were 12 countries whose doctor provision was between one to 1500 and one to 3000.

It is, of course, necessary to remember that even with a reasonable doctor/population ratio for the whole country there may be an extreme disparity between the urban and the rural provision. Capital cities and metropolitan areas have a special tendency to "syphon off" the available medical personnel. Furthermore, it is abundantly clear that the ratio of one doctor for every 10 000 people in developing countries, which has been the assigned objective for the United Nations Development Decade, is still far from attainment in many parts of the world. There is obviously an enormous worldwide deficiency in medical personnel to be made up. It should also be noted that some developed countries have suggested that even a doctor/population ratio of one to 750 is likely to prove inadequate when the advances of medical science are made fully available to their citizens.

CHAPTER 5

SOCIAL AND ECONOMIC DEVELOPMENTS OF SIGNIFICANCE FOR THE HEALTH SITUATION DURING THE PERIOD 1955-1964

It was felt that the occasion of the publication of the Third Report on the World Health Situation would provide an opportunity to review national health activities during the decade 1955-1964. Accordingly, governments were requested to provide, as far as possible in narrative form, a review of the most important trends in the national social and economic fields during the period and of any associated developments in the health services.

Some 77 governments complied with this request. They indicated their acceptance of the thesis that the health of a country's inhabitants cannot be considered in isolation from the economic and social background, but is definitely related to and sometimes dependent upon it. Their replies, however, tended to concentrate on the social and economic trends, rather than on any associated developments in the health services.

The decade from 1955 to 1964 was of signal importance to many countries. For some it was a matter of a radical change in international status by reason of their accession to independence. For others there was the more or less recent removal of the burden of war. Governments too have changed: delegation of powers and a decentralization of administration have been brought about in certain countries as the result of political decisions; federations have been formed and dissolved.

For the world as a whole, many of the achievements of the decade were of immediate and even greater potential importance. The full significance of the major discoveries in the physical and biological sciences, the vast technological achievements in the conquest of space, and the speeding-up of communications have yet to be fully appreciated. In the economic field there was steady but still insufficient extension of mutual assistance. In the realm of international collaboration there was the mobilization of effort in peace-keeping activities through the United Nations, and two of the specialized agencies—FAO and WHO—launched worldwide campaigns against hunger and against malaria in association with their respective Member States.

During the decade more than two hundred census enumerations were carried out and from the data so gathered countries were enabled to know more about themselves, about the numbers and distribution of their populations and the all-important rates of growth.

All these developments in varying degree were relevant to the world health situation.

But the social and economic factors which can affect a country's health situation are many, and not always easy to isolate. Economic improvement may precede and assist social development, but prior advances in one or other of the social sectors, especially education or health, may equally be necessary to the successful evolution of an economic development plan.

One factor, at least, which can hardly be claimed as social or economic, has been most potent throughout the decade—namely the attainment of independence. No fewer than 34 countries have become either self-governing or entirely independent during the decade. They have reached the position in which they can determine their own methods of development, administration and education, and have acquired a national dignity and confidence in the process.

Economic and Social Planning

In seeking to arrive at a state of national economic health, governments have often established organizations which will help them to plan their economic and social development. In doing so they have had before them the example of several countries which have been engaged in such planning for many years. They have also had their choice of several methodologies, inspired in the main by the economists. A number of the earlier plans were strictly limited to economic development and there was frequently a neglect of the education and health sectors, which were given comparatively little attention and a low degree of priority. There was a tendency to concentrate on the exploitation of natural resources, the development of communications, together with em-

phasis on the introduction of appropriate industries, and the development of agriculture. After a time circumstances began to make it obvious to the planning experts that a country's wealth is as nothing without a healthy labour force, and that the control of such diseases as malaria and bilharziasis is a necessary precondition for progress. Furthermore, the possession of a pool of educated manpower is essential for future development.

It is true that not all plans for economic and social development have achieved their objective in accordance with the original time-table, and that a certain number of them have had to be recast and retimed. But where the planning process has received intellectual acceptance as a discipline, and has been conscientiously carried out, it has achieved a considerable degree of success. The following details, based on information supplied in the replies to the questionnaire for the Third Report on the World Health Situation, are indicative of the results obtained under planning for economic and social development.

During the decade the economy of China (Taiwan) made a steady and continuous advance in many fields, but particularly in the development of industries. This has been accompanied by an increase in the national *per capita* income, and an improvement in the standard of living. The increase in agricultural production has resulted in better nutrition. During the period from 1953 to 1960 the trend towards industrialization was most marked. About 7000 factories were built and the production of articles for daily use was sufficient not only for internal requirements but also for exports. The total number of employees increased from 309 887 in 1954 to 445 667 in 1961.

The economic situation in India is summarized as follows. The Indian economy is still predominantly agricultural. About one half of the country's national income is derived from agriculture and allied activities, which together absorb nearly three quarters of the manpower. Only about one fifth of the national income originates from the processing and manufacturing sector, including mining. The remaining portion of the national income is almost equally shared among commerce, transport and other services. In its reply to the questionnaire for the Third Report, the Government of India stated: "Over the past decade, however, India's net national income has advanced at an average rate of 3.35 per cent. per annum—the increase in aggregate national income being about 33.5 per cent. At current prices, national income in the fiscal year 1963/64 is estimated at Rs 17 200 crores and the *per capita* income at Rs 371. The corresponding figures at constant prices (1948-49) are Rs 13 910 [crores] and Rs 300. As population has been increasing during the last decade at about two per

cent. per annum, the increase in income *per capita* has been 1.23 per cent. per annum."

Developments in Sudan are described in rather more general terms. The decade was marked by a growing industrialization of the country, with the establishment of 238 new industries and a marked trend towards economic self-sufficiency. Rural and community water supply has received increasing attention. Artesian wells have been drilled and many towns provided with piped and safe water supply. Agricultural and animal husbandry schemes have been started. Expansion of educational facilities has been equally impressive, as 2177 schools of different grades have been opened. During the last three years an improvement in the standard of living, with a consequent fall in the infant mortality rate, was noted.

These examples reflect the benefits which accrue from economic and social planning. In the main they derive from the creation and availability of increased financial resources, sometimes supplemented by external aid. Apart altogether from the application of such funds to the provision of additional health facilities, they can also be turned into channels which directly or indirectly benefit the health sector.

Education

One of these channels is undoubtedly education. For general education is the field in which 30 countries recorded progress which they regarded as of actual or potential significance in relation to their health situation.

In Upper Volta, for example, since the attainment of full independence in 1960, much work has been done in the field of education. The proportion of children attending schools has risen from 2.3 per cent. to 9.0 per cent. A special rural education programme was introduced in 1962.

Turkey entered an era of planned development during the decade and great efforts have been made in the educational field; three new universities have been established and the number of lycées and secondary schools has been increased. The percentage of literate villagers is greater and community development has been emphasized.

In Paraguay the position is as follows. Since 1953 the number of schools has increased by 47.6 per cent. and the number of school registrations by 3.6 per cent. The number of university students was 2265 in 1955, and 3782 in 1964. Illiteracy has decreased from 34 per cent. in 1955 to 28 per cent. in 1963.

The situation in Puerto Rico is particularly interesting. Education has received annually from 25 per

cent. to 30 per cent. of the funds made available by the national budget. As a result, virtually the whole of the six to 18 year age-group, or 700 000 individuals, now attend schools. The education programme strongly supports adult education. Between 1953 and 1964 approximately 500 000 adults who had previously missed school attended courses of instruction which gave them the equivalent of an elementary or secondary education.

As a major influence affecting the health situation, education ranks immediately after economic and social development planning.

The Effect of Government Policy and Legislation

It has been said that one of the preconditions for the preparation of a national health plan is a clear indication of the government's interest in national socio-economic development and in health planning as one of its integral parts. Along the same lines, though not directed specifically at health planning, was the decision of the Government of Czechoslovakia in 1964 to arrange for the preparation of a document which would set out the social and hygienic determinants of the healthy life. This document would also emphasize that it is the duty of all enterprises, co-operatives, institutions and individual citizens to protect and promote health. The principles it outlined would then be embodied in a unified law on national health care, which would also guarantee the free provision of all health services.

The types of legislation which most governments introduced had various other objectives.

A few countries regarded their recent legislation on land tenure and land distribution as not only of great social and economic significance but also as contributing ultimately to the improvement of the health of their peoples. Coupled with an active and scientifically based agricultural policy it could lead to an improvement in the national nutrition status.

Laws regulating the conditions of industrial employment were more frequently quoted as likely to improve the health of the working population. They covered such matters as the length of the working week, the regulation of periods of leave with pay for pregnant mothers, the prevention of industrial accidents, and the provision of medical care—both preventive and curative—in factories.

By far the largest amount of such current legislative activity is concerned with the organization of social insurance, or with the amendment or extension of social insurance schemes. Apart from their use as a source of financing health services, such schemes, through their retirement pensions and disability and maternity allowances, are regarded as contributing

to that feeling of personal and family security which is conducive to mental and physical health.

Population Factors

The effect of a rapidly increasing population on the health situation of a number of countries has already been considered under the descriptive designation of "population pressure". Pressure arises usually, but not always, as the result of the operation over a period of years of a relatively high annual rate of natural increase. There are other ways in which population is important in the socio-economic setting, and one of them is seen in the effect of an influx of population into a country or a district. The inflowing tide of human beings may be composed of refugees from another country or from another part of the same country, or may be a more formal and orderly type of immigration. Examples of the problems created by refugee invasion are found in Hong Kong and Macao.

In certain countries, such as the Federal Republic of Germany and Switzerland, there is a definite manpower vacuum which is filled by the purposeful immigration of work-seeking immigrants. In the Federal Republic five per cent. of its labour force is composed of immigrants. In Switzerland the number of foreign workers has increased from 95 668 in 1955 to 793 351 at the end of 1964, when they amounted to one-third of the total working population of the country. One of the sequels to these mass immigrations is invariably pressure on the existing housing accommodation, accompanied by overcrowding.

In some countries the influx places upon the existing sanitary services, including water supply, a burden which they cannot carry and gross nuisances are created and tend to be perpetuated. Other social services, such as education, are over-stretched, and the health services themselves are frequently unable to grapple with the situation.

These movements, it should be added, are almost invariably associated with the immigration-urbanization-industrialization complex.

There is, however, one form of population movement mentioned by at least five countries which is not viewed with disfavour, though it may create occasional problems—tourism.

The age constitution of a population is another facet of the problem. Some countries have to provide for a population which is in the main young, others have to deal with the problem of an aging and even an aged population.

It is the developing countries which tend to find themselves in the first group. Typical examples are China (Taiwan) and French Polynesia. In both coun-

tries 54 per cent. of the total population is under 20 years of age. In China (Taiwan) this burden of dependency has stimulated official and public interest in family planning.

In the Federal Republic of Germany it is the increasing number of elderly persons which is causing concern. The proportion of persons over 65 years was 9.3 per cent. of the total population in 1953. This proportion had become 11.3 per cent. by 1963, and is estimated to reach 13.9 per cent. in 1975. The experience of the United States of America has been very similar. Between the decennial censuses of 1950 and 1960, the proportion of people aged 65 years and over increased from 8.1 per cent. to 9.2 per cent. The implications of this increasing population of the elderly are obvious for every branch of the social services, including that concerned with the provision of medical care.

Greece presents an altogether different type of population problem. Because of the relative unpopularity of its rural areas, there is a steady movement from the villages to the towns. But under-employment and unemployment still persist in Greece, so internal migration tends very often to be followed by emigration. The age of such emigrants is usually between 20 and 45 years and the great majority of them are males. This combination of circumstances results in a very uneven age and sex distribution of the population, particularly in the rural areas.

Urbanization and Industrialization

What has been designated as the immigration-urbanization-industrialization complex has occurred in many countries over the past 150 years. As a simpler phenomenon, namely the congregation in towns of human beings in search of employment, it has existed from time immemorial. It is to be found in this epoch in almost every quarter of the world, in developed and developing countries alike, even in the island communities of the Pacific.

For many countries, urbanization and industrialization have been a normal way of life for decades. Out of 27 countries which drew attention to their influence on the health situation, no fewer than 18, however, reported them as a new phenomenon in their midst. They are most prone to occur in an acute form in developing countries, where an economy based on agriculture and animal husbandry is being supplemented or replaced by intensive industrial development. Migration from rural areas into the towns is motivated by the prospect of employment, and of the educational and health facilities which are presumed to exist there. It may also be stimulated by a desire for family reunion and company.

Immigration is often associated with the importation of disease—trachoma, tuberculosis, parasitosis and skin diseases being cited as the commonest importations. The influx of people tends to bring enormous pressure on water supplies and the arrangements for waste disposal, with the consequent appearance of the diarrhoeal diseases. The herding together of human beings, sometimes with animals, results in the overcrowding of premises and sites. Inadequate housing accommodation is supplemented by jerry-building and further unsatisfiable demands are made upon water supply and waste disposal facilities. Food supplies may be inadequate, badly distributed, or prepared and sold under unhygienic conditions. Malnutrition is not uncommon and in association with bowel infections is a common cause of death in young children born and living under these insanitary conditions. Propinquity and overcrowding encourage the upper respiratory infections and venereal disease. This succession of vicious circles in the propagation of disease overtaxes the whole medical care organization.

Every form of publicly provided service, including transport and education, tends to be overloaded. Schools are heavily overcrowded, and as a result attendances tend to fall, and juvenile delinquency becomes more common.

Industry can introduce its own hazards—accidents, industrial poisonings and the risks arising from the use of radioactive materials and sources. The atmosphere and streams are exposed to a variety of forms of pollution.

These then are some of the sanitary and social evils which countries quote in their review of the consequences of urbanization and industrialization. Unhappily they tend to be cumulative and to perpetuate themselves. To attempt to remedy them when once established is a difficult and often frustrating task. Yet they are all relevant to the local and national health situation, and it is right to question whether they are the necessary and apparently inescapable consequences of economic and social development. Anticipation and prevention would appear to be the best solution of the problem.

Minor Factors of Economic and Social Significance

Certain countries gave examples of other factors which they regarded as being of some subsidiary importance. The improvements in communications brought about by the extension of the road network with consequent improved access to remote or rural areas were mentioned by China, (Taiwan) El Salvador, Iraq, Mexico and Paraguay. The greater availability

of mass educational media and in particular television were considered by American Samoa, Indonesia and Kuwait as important for organized health education. El Salvador and Iraq also placed the increased provision and use of electricity as a significant contribution to the improvement of their health situation. Kuwait

similarly regarded the use of some of its financial resources for the construction of a water distillation plant with a daily out-turn of 16 million gallons as a major contribution to economic and social development as well as an addition to its local health facilities.

CHAPTER 6

NATIONAL HEALTH PLANNING

In the First Report on the World Health Situation, which covered the period 1954-1956, references to planning procedures in relation to health services can be found under two heads—"long-range planning", and "short-term independent programmes".

The former was described as a new activity which would ultimately become part of the normal function of national governments. It had begun primarily as a means of promoting economic development, as for example in the USSR following the revolution, and in a number of other countries after the Second World War. Subsequently it had been extended to include the development of health services as an essential part of the economic and social system. In several instances a health plan, usually limited in scope, but sometimes comprehensive, had been incorporated in the five-year overall development plan of a country.

"Short-term independent programmes" were designed to deal with special needs or situations, as for example the control or eradication of malaria or yaws, or the establishment of a co-ordinated system for maternal and child care. Short-term programmes of this type were liable to have only a temporary or limited degree of success unless they were associated with permanent health services or brought within the purview of a long-range national health plan.

At the time of the First Report, Afghanistan, Czechoslovakia, Ethiopia, India, Indonesia, Sudan, the Union of Soviet Socialist Republics and the United Arab Republic were known to have formulated long-term plans, or to have established machinery for the purpose.

In the Second Report on the World Health Situation, dealing with the period 1957-1960, the list of countries with comprehensive health plans, either already drafted or in course of preparation, was enlarged by the addition of Cambodia, Ceylon, the Federation of Rhodesia and Nyasaland, Finland, Iran, Mauritania, the Republic of Korea, Turkey and Yugoslavia.

There were also extensive programmes for the construction or remodelling of hospitals, as in France, the United Kingdom and the United States of America, or for the development of rural health services, as in Poland and Thailand. But the countries whose programmes fell short of a comprehensive health plan

were not numbered amongst the health planning countries proper.

By the time the supplement to the Second Report on the World Health Situation was published in 1964, there were over 40 countries with more or less comprehensive health plans already in operation or at varying stages of completion.

For the purposes of the Third Report on the World Health Situation it was thought that it would be useful to make a more detailed inquiry into the extent of these national health planning activities. Governments were accordingly requested to furnish a detailed account of any comprehensive health plan which they might have prepared. In particular they were asked to give information on the following points:

- the general content of the plan;
- the administrative arrangements for its preparation;
- the government department or departments originating or concerned with the plan;
- the method of co-ordinating the plan with any other plans relating to social and economic development;
- the machinery for implementation and evaluation;
- the progressive development and continuation of planning.

In addition governments were asked to describe any steps which they had taken to implement their plans.

Much interesting information was forthcoming in response to the request and it has been amplified from other authoritative sources so as to provide an up-to-date summary of the national health planning situation.

Obviously no collection of information of this kind can hope to be complete or absolutely contemporaneous. It is also exposed to the risk common in all developing disciplines—namely, ambiguity in the definition of terms. Only a few definitions, however, are required for the purposes of this chapter. It may be helpful to commence with "planning for economic and social development". This process is concerned with the preparation of a plan which will take into account the whole gamut of the country's resources, its economic prospects, the availability of manpower, the needs

of agriculture, education, health, industry and transport. It will have regard for the plans of the component sectors of national activity—agriculture, education, health, finance, etc. It may in fact be a somewhat complex composition, which seeks to co-ordinate these several sectoral plans and to incorporate them in an overall plan for national economic and social development.

In the health field itself planning can commence with a single restricted objective, for example the provision of a water supply to a small community, or the organization of health services in relation to a local health unit. Such a scheme with a limited objective may be termed a "project". Examples of "programmes" have already been given, and it is unnecessary to enlarge upon the fact that a "programme" may consist of an aggregation of "projects".

"Health planning" is concerned with and comprehends all the services for promoting and maintaining individual and communal health, including those concerned with the environment. It aims at the produc-

tion of a deliberately and carefully worked out plan, based on adequate data, phased to cover a specific period. In practice the plan may exclude the environmental field entirely, or only deal with certain of its aspects. It must contain a clearly expressed description of the financial implications. The only difference between a "health plan" and a "national health plan" is that the latter is either closely associated with or incorporated in a national plan for economic and social development, whereas a health plan exists independently.

Table 8 sets out, for each of the WHO regions, the number of countries which are engaged in some form of planning for economic and social development; the number with "national health plans", either complete or in course of preparation; the number with "health plans" not as yet associated with a plan for economic and social development; and, finally, those whose health planning is limited to the formulation of health programmes in certain fields, not amounting to a comprehensive health plan.

TABLE 8. HEALTH PLANNING IN COUNTRIES, BY WHO REGION

	Africa	The Americas	South-East Asia	Europe	Eastern Mediterranean	Western Pacific	Total
Number of countries engaged in economic and social planning	27	25	7	13	16	10	98
with national health plans completed or in preparation:							
completed	13	15	6	12	14	8	68
in preparation	3	3	—	—	1	—	7 } 75
with "health plans" completed or in preparation but not associated with a plan for economic and social development	1	3	—	2	—	2	8
with health programmes only	2	1	1	—	1	4	9

Although the ministry of health is usually responsible for health planning, it should be remembered that certain planning activities may be the responsibility of such other government departments as the ministry of public works or the ministry of education. Where this occurs co-ordination is obviously essential.

It is clearly impossible in this chapter to attempt more than a brief general account of some of the salient features of the health plans which governments have described, and of any common factors which appear to emerge therefrom. More details are given in the individual reviews by country and territory in Part II of this report.

It will be seen from Table 8 that the great majority of ministries of health or their equivalent have done or are doing their planning in association with whatever machinery has been set up for economic and social planning. Moreover, a more detailed scrutiny of the descriptions of these plans reveals that rather more than a third of them deal with some aspect of the environmental situation.

The planning for environmental improvement only very rarely comprises the whole spectrum of the environment and its numerous elements—safe water supply, sewage and refuse disposal, clean air, radiation protection, housing and town planning, the control of

overcrowding, noise prevention, vector control and food hygiene. But the supply of potable water, sewage disposal, the provision of latrines, housing for certain limited groups, and, in particular, vector control, are often included in the health plan.

The planning of arrangements for the training of personnel, inasmuch as they often depend upon the establishment of a medical school or the construction of teaching institutions for nurses and other health service personnel, are obviously very difficult matters. The relatively heavy demands they make not only upon capital investment programmes but for subsequent maintenance cannot be overlooked or underestimated.

Again, the detailed costing of all projects and programmes is something which is exceedingly difficult and time-consuming, but is beginning to receive much greater attention—especially when the plan is a national health plan.

Some governments were additionally helpful in that they supplied copies of their plans. It is clear that planning is beginning to be recognized as an intellectual discipline of a high order, demanding meticulous attention to detail, and laborious and patient compilation of data and proposals. The format in which the plans were presented, often as a volume of 200 to 300 pages, is proof of this statement.

One unfortunate occurrence quite frequently observed was the gap in time between the preparation of a plan and its acceptance and implementation by governments. On occasion serious national economic difficulties have actually interrupted a plan in the course of its implementation. These events are undoubtedly frustrating, but not enough is known as yet of the planning process, or of its possible defects and limitations, to enable the suggestion of any specific administrative approach to their prevention. There are too many possible sources of error to be taken into account, starting with the inadequacy of the demographic statistical material, and including the too optimistic assessment of resources, both present and anticipated.

It is clear, however, that the majority of countries are beginning to formalize their planning procedures and to define the duties and interrelationships of the several groups of planners. The planners also tend to state their objectives more positively.

In the case of economic and social planning the economist is obviously influential and his directing role is accepted. Almost invariably the constitution of the planning board, commission or unit reflects the presence or availability of economic, statistical, legal and administrative skills working in consultation or more closely with planners equally specialized in the various sectors of agriculture, industry, transport, education and health. The unit is frequently situated at the very centre of governmental planning, namely at the level

of the president or prime minister.

The objectives of the overall plan for economic and social development are frequently stated in some such terms as:

- broadening of the basis of the national economy;
- improvement of the standard of living;
- increase of productive capacity;
- an annual increase in the gross national product by five or six per cent.;
- an increase in the average *per caput* income of the population;
- an increase in exports;
- delegation of power and decentralization.

In the health field the tendency is for planning to originate in the ministry of health itself, either as the result of the thinking and experience of senior officials, or as the outcome of the intensive study of the national health situation by a specially constituted health planning unit. This might consist of certain of the senior public health administrators, some of whom may have had special experience and training, assisted by specialists in the several health fields and also by administrators. The unit would both work in association with the economic and social planning unit and be responsible to the director-general of health services and through him to the minister of health.

In plans for economic and social development, there is inevitably a marked difference between the broadly stated objectives of a long-term plan for a period of ten or 20 years, even though phased over five-year instalments, and the specific targets in a five-year plan. More particularly is this the case when the latter is reviewed and perhaps adjusted annually in the light of immediate circumstances.

Health plans have the same type of long-term approach, but tend even more pointedly to emphasize the immediate targets of the customary five-year plan. Typical examples of long-term objectives are:

- the provision of medical care services of all kinds;
- the improvement of environmental conditions;
- the large-scale control of certain communicable diseases;
- education and training of health service personnel at all levels;
- medical and public health research;
- an increase in the expectation of life of the newborn child.

The targets to be reached within specifically stated time limits are more definitely indicated, even though they may be stated in round figures. Examples of such detailed targets are:

- a general practitioner for every 3000-4000 inhabitants;
- a paediatrician for every 6000-8000 inhabitants, varying according to the local demographic situation;
- a health centre for every 50 000 inhabitants;
- a hospital bed per 1000 inhabitants in every health service district;
- a local hospital in every municipality in the country;
- a regional fully equipped hospital in every province;
- a public health laboratory in every province.

In order to arrive at such standards of provision and also to apply them to a country, either as a whole or to some selected portions of its territory, it is necessary to employ certain techniques, which have sometimes been designated collectively as the planning methodology. Certain countries in their replies to the questionnaire for the Third Report on the World Health Situation gave some general account of the methodological system they followed. There would appear to be at least three well-defined methodological systems.

The oldest is that of the socialist countries, which was originally developed by the USSR and subsequently extended by Czechoslovakia.

The next oldest is that employed by India and later by Ceylon in the formulation of their health plans. It has been described as a "pragmatic" or "traditional" method. India has employed it in the preparation of its succession of national health plans. It has been used extensively in the African, Eastern Mediterranean and South-East Asia Regions.

Recently in Latin American countries a further method has been evolved which relies to a greater

extent on mathematical procedures akin to those used by the econometricians. It has been enthusiastically received in South America. Three countries replying to the questionnaire for the Third Report indicated that they were using it in replacement of a "traditional" method, and hoped at an early date to be in a position to compare the two types of procedure, and the resultant plans.

This chapter is hardly the place for any more detailed exposition of these procedures. What is obviously required, however, is a closer study of the several methodologies, so that their individual merits and possible defects can be ascertained.

It is unlikely that any one method will achieve universal acceptance. On the other hand it will be helpful for planning countries to have the opportunity of choosing the method which appears most appropriate for the ordering of their own particular problems, and for their resolution in a plan.

The question of health planning has been discussed during recent years at several regional and inter-regional seminars under WHO and other auspices. In 1965 it was the subject of the technical discussions at the Eighteenth World Health Assembly. It has become, as is evident from the response to the questionnaire for the Third Report, one of the normal functions of many governments. It is obvious, too, that its progress as such can be facilitated in a variety of ways. One of these, the study of the planning process and its methodology, has already been mentioned. Moreover, there is a shortage of experienced planning personnel, and training facilities are required to increase their number. There is ample scope for research also.

Above all, in the majority of countries there is an urgent need for financial backing, national and often external, for the implementation of their plans.

CHAPTER 7

MEDICAL AND PUBLIC HEALTH RESEARCH

Subsequent to the Eleventh World Health Assembly in 1958 the World Health Organization began to assume its role as the promoter and catalyser of medical and public health research in the international field. In support of this reorientation of the Organization's research activities, the Second Report on the World Health Situation dealt at some length with the whole question of research. This was in contradistinction to its treatment in the First Report, where it was the subject of a few somewhat meagre references.

In the Second Report it was noted that not more than 37 out of 121 reporting countries had provided sufficient information to enable a fair assessment to be made of their research effort, and of the organization in which it was based. Only from Europe was the response satisfactory.

In the questionnaire for this report the following information was requested:

(a) a general description of the development of the organization and facilities for medical and public health research during the decade 1955-1964, with an indication of the relative extent to which this has occurred under governmental, foundation, and other auspices, where that can be stated with reasonable accuracy;

(b) a brief summary of major medical and public health research and field investigation work during the period 1961-1964;

(c) sources of finance and expenditure on medical and public health research under the following headings:

- government;
- foundations;
- other sources—specifying, if possible.

On these subjects replies were received from 54 countries out of 147. Medical research has undoubtedly become an immediate and growing interest of many governments, but arrangements for its organization and co-ordination would appear to be features of somewhat later growth. In 32 of the 147 reporting countries, spread over all the regions, there is a centrally situated body charged with varying degrees

of responsibility for stimulating, fostering, co-ordinating and making financial provision for medical and public health research. This central body may take several forms according to national predilections. It may be an advisory committee annexed to the ministry of health, or a recognized consortium of university medical faculties, or even a single university, subsidized by government. There are also other possibilities. However constituted, the membership of the central organization usually includes distinguished representatives of the several medical and scientific disciplines.

In broad terms the function of these bodies is usually to organize such medical research as the government may require to help it towards understanding the health situation of the country and in formulating its health policies.

This involves the central research organization in the support of research institutions in universities and elsewhere, in providing for the needs of independent research workers, and in organizing training facilities. The central organization may also be concerned in the management of its own institutes and in field investigations. The present extent of research activity on a worldwide scale and the recent trend towards its organization on a national basis can be gauged from some of the information supplied by governments.

From the replies of the 54 countries it is, however, difficult to make anything more than a representative selection to indicate the type of national research organization and the scope of the research undertaken, and where possible a brief statement of the money expended and the manpower involved. A great deal of information has been supplied under these heads, and it is necessary to be selective, but in doing so it is hoped to give an adequate indication of the special interests and organizational schemes of the countries mentioned.

Commencing with the countries of the European Region, where the co-ordination of medical research has probably been more extensively undertaken than in any other region, it will be necessary to deal in some detail with several of the larger systems, because of the different patterns in which their research arrangements have been organized.

The largest of these organizations is undoubtedly that of the USSR, with its 290 institutes and 43 000 research workers. In addition to these there are the research units and workers in the universities and medical faculties. The supervising and directing bodies for this vast apparatus are the USSR Ministry of Health and the ministries of health of the republics, together with the Academy of Medical Sciences. Co-ordination of these activities is the function of a special council attached to the USSR Ministry of Health entitled the "Council for the Co-ordination of Research Work and the Practical Application of the Achievements of Research".

The range of research projects is very great indeed. In addition to fundamental research in the basic medical sciences, outstanding work has been done in the study and elucidation of some of the problems of the chronic and degenerative diseases, with special attention to cancer. But apart from medical and scientific research along classical lines, special interest has been shown in the USSR in applied research, particularly in relation to the operation of the health services. This type of research, which is largely concerned with the establishment of norms of provision on scientific lines, is carried out in close association with the planning of the national health services. Another field of research is that of the health of the worker in industry and the related problems of the loss of efficiency and working time.

In Czechoslovakia, at the end of 1964 over 2600 scientists and nearly 3000 junior workers were employed in the 28 laboratories of the Czechoslovak and Slovak academies of science and the 33 specialized institutes, all concerned with various aspects of medical research, both in hospitals and in the field. Finance for these various undertakings is provided in the national plan for economic development.

The supervision and co-ordination of research work throughout the scientific field is entrusted to a special commission within the Praesidium of the Czechoslovak Academy of Sciences. It is composed of members of the Academy and scientific representatives of the government departments concerned. Research activities which are concerned most particularly with the range of interests of the Ministry of Health are supervised by the Ministry's own Scientific Council.

Medical and public health research in Czechoslovakia covers the usual subjects, but great interest has also been shown in such matters as the healthy development of the new generation, the influence of living and working conditions on human health, nutritional standards, physical training and mental health. Notable contributions to knowledge have also been made in the development of scientific bases for the standards of provision which are used, as in the USSR, in the planning of health services.

France extended, reorganized and co-ordinated its research facilities during the period under review. The support of research is primarily a governmental responsibility and is in the main the concern of the Ministry of National Education and the Ministry of Public Health and Population.¹ The Ministry of National Education is responsible for research carried out in the faculties of medicine and of pharmacy, the medical schools, and great national institutions such as the *Collège de France* and the School for Advanced Studies. Fundamental research in the medical and biological sciences is the chief interest of these institutions. Applied research in the medical and public health fields is more particularly the responsibility of the Ministry of Public Health and Population.¹ It is carried out under the Ministry's auspices in the National Institute of Health and Medical Research, in hospitals and in such institutions as cancer centres. There are now altogether 54 established research units or groups in various parts of the country, most of them in Paris. The National Institute is further responsible, under a decree of 18 July 1964, for informing the Government of the health situation of the country, and for indicating any measures which may appear necessary in special circumstances. In addition to the state institutions, there are also a number of independent institutions engaged in medical research, including the well-known Institut Pasteur.

Overall co-ordination of medical research in France is exercised by an interministerial committee for scientific and technical research of which the Prime Minister is Chairman. This body is assisted by a consultative committee on scientific research, composed of 12 distinguished scientists, certain of whom are representatives of the medical and biological disciplines.

The chief sources of financial support for medical research in France are the Government, private foundations and industry. Altogether, apart from industry, 247 million francs were expended in 1963.

The United Kingdom presents the example of a closely co-ordinated system of medical research, which has developed steadily since its first beginnings in 1913. There are three major organizations involved in the system—the universities, the Medical Research Council and the National Health Service. The Council, which is influential throughout the four countries of the Kingdom, is under the administrative direction of the Secretary of State for Education and Science. Its function is to promote research into all the aspects of health and disease and to support work over the whole field of the medical and cognate biological sciences. It aims at attaining the balanced development of

¹ On 8 January 1966 the Ministry of Public Health and Population was merged with the Ministry of Labour and Social Security to form the Ministry of Social Affairs.

research in these fields throughout the United Kingdom, together with the other organizations or agencies concerned.

The Council's arrangements for research fall under four main heads: the work of the National Institute for Medical Research and the Council's research units in other institutions; long-term research groups in university departments; short-term research grants to independent investigators; and research fellowships and scholarships. There has been a considerable increase in almost all these categories since 1954. In addition, the Council has established three major advisory boards for clinical research, tropical medicine research and biological research. The Council has also decided to create a clinical research centre, arrangements for which are well advanced. While the Medical Research Council operates throughout the whole of the United Kingdom, Scotland and Northern Ireland have additional facilities supported from local funds. Liaison with the Medical Research Council, however, is very close.

In view of the fact that this system covers the whole range of research throughout the medical and biological sciences and is actively concerned with clinical research also it is not possible to enumerate its many activities.

As regards the expenditure of the Medical Research Council, this has been greatly increased since 1955. The expenditure in the fiscal year 1954/55 was £5.5 million; in 1963/64 it was £18.5 million, an increase of 236 per cent. To this must be added the financial contributions to research which are made by private foundations, and the considerable expenditure of the pharmaceutical industry.

Research in Europe, as already stated, is an active, in fact almost a universal, interest. The contributions to research of such countries as Belgium, Poland, Sweden and Switzerland, amongst others, have been considerable and noteworthy.

Although there has been a widespread development of research throughout the Americas, the outstanding provider on that continent of facilities for the enlargement of the boundaries of knowledge still remains the United States of America, not least in the medical and biological sectors. Its activity no longer aims simply at filling in gaps in knowledge, but is concerned to establish proper bases for the development of the medical and related sciences so that discoveries in these fields may influence the direction and content of health programmes.

Support for medical research comes in the United States of America from federal funds, state and local governments, industry, private foundations, voluntary agencies and individual benefactors. In 1964 probably \$1672 million, equivalent to 0.25 per cent. of the gross national product, came from these sources. The

Federal Government provided 63 per cent. of the total. Twenty-five per cent. came from industry and 12 per cent. from the states, foundations and other sources. Nine years previously the entire expenditure on research amounted to \$261 million, or less than one-sixth of the 1964 figure. The federal contribution increased from \$139 million in 1955 to \$1052 million in 1964.

Most of the federal funds are distributed by the Department of Health, Education and Welfare, operating through the Public Health Service and the National Institutes of Health. Their allocation, however, is not restricted to universities, medical schools, institutes and individual research workers in the United States of America. In fact, \$13 million of the 1964 total went to institutions and scientists in 49 different countries in all parts of the world.

The range of research projects of varying dimensions was, as could be expected, very large indeed. It included a major scientific discovery in the breaking of the so-called genetic code, an intensive study of the dietetic hypothesis of the causation of coronary thrombosis, the planning of mechanical devices for use in heart surgery, the study and trial of various prophylactic vaccines, the diagnosis of the pre-diabetic patient, and various studies both social and pharmacological in the treatment of the mental disorders.

In addition it is beginning to be appreciated that operational studies of the services provided by health departments are of considerable importance in promoting efficiency and in assisting evaluation.

Medical research activity in Canada in many ways resembles that of the United States of America, though it has a definite co-ordinating machine in the shape of its Medical Research Council, which was established in 1960. There is some emphasis on operational research, and the study of medico-social problems, though inquiries into arthritis, cardiovascular disease and the nervous disorders also receive considerable support. In the fiscal year 1964/65 the expenditure from all known sources over the whole field of medical research was of the order of Can. \$13.4 million.

Elsewhere in the Americas the growth of interest in research has been rapid and a number of countries have been active in providing the necessary stimulus, facilities and funds. In certain instances they have also taken steps to co-ordinate research activities.

For example, in Mexico in 1964 a special Directorate of Public Health Research was created in the Ministry of Health and Welfare. Its function is to co-ordinate the medical research activities of the universities, institutions and hospitals. It has already grouped together a number of institutes which previously worked entirely independent of one another, including such important establishments as the National Registry of Morbid Anatomy and the National

Institute of Virology. The subjects investigated in the complex of institutions now co-ordinated by the Directorate included rabies, rheumatic fever, tropical skin diseases and allergy to antibiotics. Funds for research are provided from various sources, and include a governmental allocation to the Directorate of 11 500 000 pesos.

In Cuba the previous somewhat haphazard arrangements for research were co-ordinated in 1961 by the establishment of a scientific council at Ministry of Public Health level. This body is primarily responsible for sponsoring and supervising research work in governmental institutions but it is also associated with the research activities of the faculties of medicine through the medium of a joint committee. The range of research interests is large, but special attention is being given to nutrition, the epidemiology of cancer in Cuba, and the sensitivity of *Aedes aegypti* to insecticides.

An Office of Research was established in the Department of Health of Puerto Rico in 1960. So far it has not been concerned with research in the medical and biological sciences, which are included in the functions of the university. The emphasis is on subjects which are relevant to the work of a government's health and welfare department. There are a number of research projects in the social sciences, and also in the public health field, where such matters as traffic accidents and the epidemiology of cancer in Puerto Rico are being studied.

The South-East Asia Region has a long history of research activity. In fact India was one of the proponents of organized research, having established its medical research council in 1912. Five governments at least—namely, those of Burma, Ceylon, India, Indonesia and Thailand—have instituted research programmes. That of India is the most comprehensive. The Indian Council of Medical Research not only maintains the Nutrition Research Laboratories at Hyderabad, the Virus Research Centre at Poona, the Blood Group Reference Centre at Bombay, and the National Institute of Communicable Diseases at Delhi, but it also provides grants-in-aid, disseminates information on medical research and publishes two journals. Research is also carried out in the medical colleges and their attached hospitals. India has also a large number of other institutions, many of which have particular interest in a single disease or group of diseases, and in the related research. Among these institutions are the All-India Institute of Hygiene and Public Health in Calcutta, the Vallabhbhai Patel Chest Institute in Delhi, the Lady Willingdon Leprosy Sanatorium at Chingleput, and the Haffkine Institute and the Indian Cancer Research Centre in Bombay. The Indian Council of Medical Research acts as a co-ordinating influence over all this field.

In Ceylon much of the research work in the fields of microbiology, entomology, parasitology and pharmacology is carried out at the Medical Research Institute, which, however, is charged with considerable responsibilities for routine diagnostic work and the manufacture of vaccines for use in the mass immunization campaigns. It is proposed to develop diagnostic laboratories elsewhere, and in consequence the Institute will be able to give more time to the research side of its work.

Mention must also be made of Burma, a relative newcomer in the field of independent research, for its Medical Research Council and Medical Research Institute were only established in 1962 and 1963 respectively. The Council co-ordinates all research work in the medical and cognate sciences and is also responsible for the management of the Institute. Financial support is provided by the Government, and the United States National Institutes of Health have given assistance in the launching of certain projects. Special research interests include the indigenous medicinal plants and their derivatives, and the physiological norms of the Burmese.

In the African Region, Nigeria has built up over the years a sound tradition in clinical and microbiological research into such diseases as trypanosomiasis, leprosy and cerebrospinal meningitis. In addition a considerable amount of field research, some of it operational in type, has been undertaken in relation to malaria eradication and insecticide resistance. Nutritional studies, particularly in connexion with protein deficiency, have been carried out on an extensive scale. Much of this research work has been done in the medical schools of the universities of Ibadan and Lagos, but the laboratories of the Federal Ministry of Health have also participated. The Federal Government has also developed special institutions in various parts of the country to carry out research investigations and studies in trypanosomiasis, leprosy and child health. All these activities are financed by the Government, but supplementary grants are also received from overseas foundations.

In the United Republic of Tanzania, the East African Common Services Organization, based in Nairobi, Kenya, maintains three institutes in Mwanza, Amani and Arusha which carry out research into the important local problems of bilharziasis, malaria and other vector-borne diseases and the related question of pesticides. This is in addition to considerable clinical research carried out in hospitals.

In the Eastern Mediterranean Region a great deal of research is being carried on in a number of countries, though it is rather restricted in range and is concerned with the investigation of the problems arising from the local pattern of disease. This is the situation in the United Arab Republic and in Sudan. In the latter

country, for example, studies are being made of onchocerciasis, leishmaniasis and kala-azar. In Israel, however, the fields of investigation have been extended beyond the communicable diseases to include investigations of the chronic-degenerative diseases such as atherosclerosis and diabetes, and the hereditary conditions arising from genetic defects. Pakistan is at the stage of reorganizing its research arrangements, which will be largely based, apart from the universities, on the new national health laboratories, which are nearing completion.

Medical and public health research in Iran is undertaken in the universities and hospitals, and at the five major research establishments: the Pasteur Institute, the Razi Institute, and the specialized institutes for cancer, food and nutrition, and public health research. In recent years much of the research work has been concerned with immediate and urgent problems arising in the health fields, but certain projects of a more fundamental type are also in hand. The Iranian National Oil Company also supports large research programmes in the operation of its medical and public health services. Co-ordination of research is achieved through centralized arrangements which involve the Ministry of Health, the Scientific Research Council and the Plan Organization.

Iraq has also found it appropriate to establish a medical research council during the decade. It is an autonomous body with its own budget and personnel. Its function is to stimulate, assist and co-ordinate research in the country and its field of interest, which is concerned at present with operational research in the health services, will be enlarged when the Medical City in Baghdad is completed.

In the Western Pacific Region medical and public health research, much of it related to local problems, is carried out in a wide range of situations and under a great variety of conditions.

Australia provides an example of the co-ordinated federal sponsorship of medical research through the operation of a national health and medical research council under the chairmanship of the Federal Director-General of Health. The council also advises the commonwealth and state governments when scientific opinion may be helpful in the formulation of policy. It is especially concerned with the research carried out in certain of the major research institutes and centres at the federal level. The largest of these, the John Curtin School of Medical Research, has an annual budget provided by the Commonwealth Government of over £A 600 000. Research is undertaken under federal and state auspices in all the scientific fields of

medicine. A considerable proportion of it is in the highly specialized fields of cancer, cardiovascular disease and the techniques of cardiac surgery. There are also projects concerned with some of Australia's tropical diseases. An attempt has been made to determine the grand total of contributions from various sources which finance medical research in Australia. In 1962, the ascertained expenditure was £A 2 747 867.

A considerable amount of medical research is carried out in the relatively small island communities of the Pacific. Fiji, French Polynesia and New Caledonia are examples of territories in which important and interesting work is being done into subjects arising out of local conditions and local diseases. In Fiji the diet of certain village groups was the subject of investigation in two nutrition surveys. *Tinea imbricata* is a special local problem and a control trial of treatment with varying doses of griseofulvin was undertaken. In French Polynesia the Medical Research Institute, in addition to carrying out investigations into two of its most important diseases, tuberculosis and filariasis, has undertaken inquiries into health education and certain social topics. The Institute had an income of over 15 million CFP francs in 1964. Like several other island communities in the Pacific, New Caledonia is interested in the epidemic diseases of the central nervous system, tropical skin conditions and the nutritional problems of its population. All these were the subject of local research studies in 1964.

In this short review of the research situation it has become clear that throughout the world during the decade under consideration, and in particular during its last five years, there has been a great increase in the quantity of medical and public health research. It has been truly said that research is the life blood of all scientific activity and, inasmuch as medicine is one of the biological sciences, research is an essential feature of all that concerns the public health. But medicine is also a social science which depends very largely for its successful application on administrative procedures and techniques. It has therefore been encouraging to note the increasing interest of governments in studies of an operational kind.

This report is primarily a record of the activities of governments, but much that is recorded here has derived support from WHO's enlarged programme of research which was initiated in 1958. The work of its distinguished Advisory Committee on Medical Research and its scientific groups has undoubtedly been a stimulating and inspiring influence, as well as an encouragement to further collaboration and communication.

CHAPTER 8

GOVERNMENT EXPENDITURE ON HEALTH SERVICES

In subscribing to the Constitution of the World Health Organization, Member States recognize and accept their responsibility for the health of their peoples. This chapter is concerned with the financial and budgetary aspects of that commitment and is designed to present in quantitative terms a review of one of the ways in which governments discharge their obligation. It will attempt to indicate for a number of States, but not for all, the variations which occur in the allocation of public funds to the health services, the relation of this allocation to the total governmental expenditure, and the trends which have been evident in recent years. It is to some extent unfortunate that comparable data are not forthcoming from a larger number of countries and over a longer period, as this would have permitted a broader analysis to have been made.

Subsequent to the publication of the Second Report on the World Health Situation, certain Member States indicated their interest in the collection of more homogeneous information on health expenditure. A new type of grouped question, largely tabular in form, was accordingly designed and included on an experimental basis as a section of the questionnaire used for the supplement to the Second Report on the World Health Situation. This question was given similar prominence in the questionnaire for the Third Report.

The data which became available from the many and very full replies to the questionnaire are presented in Tables 9 and 10. Before discussing this material, however, it may be helpful to restate the meanings which, for the purposes of the Report, have been assigned to some of the terms employed. It should be added that these meanings are generally in accord with the terminology of national accounting. The comprehensive expression "general government" is intended to include all government institutions and agencies whether central, intermediate (state, provincial, regional, etc.) or local. Excluded from this grouping, however, are those institutions which can be more appropriately classified as "public enterprises or undertakings". The function of "general government" institutions is to organize and administer "services"—rather than to sell them at a price intended fully to cover their cost. The services are

those which it is more convenient to provide on a communal basis, such as education, defence, compulsory social insurance and health services, amongst others.

"Total general government expenditure" as a term is self-explanatory. The main difference between "total general government expenditure" and "general government consumption expenditure" is that the latter excludes all expenditure on capital account, transfers to households (e.g., old age pensions, family allowances, etc.) and any subsidies paid to enterprises.

Thus "general government health expenditure" represents the cost of services provided by the central, intermediate and local agencies of government, and includes the cost of health services provided under compulsory social insurance schemes. It does not, however, include cash payments made to cover any loss of earnings resulting from ill health.

In the reviews by country and territory in Part II of this report a distinction is made, wherever possible, between capital and recurrent expenditure on health services. The recurrent expenditure is normally stated as a percentage of "general government consumption expenditure".

"Gross national product" represents the monetary value of all the goods and services produced by a country's economy before the deduction of depreciation allowances in respect of the capital goods and equipment consumed in the process of generating the national product. In the statement of the government health expenditure in Czechoslovakia, Hungary and Poland the concept of "net material product" is met with. This term represents the monetary value of all goods produced by the country's economy, after the deduction of depreciation allowances, and the exclusion of the monetary value of the greater part of general administrative and social and other non-productive services. (This means that the net material product is roughly ten per cent. to 20 per cent. less than the gross national product, owing to the deduction of depreciation allowances and the exclusion of services.)

Table 9 has been constructed to show, for 26 countries in the six WHO regions, the sexennial trends of government expenditure on health services. In addi-

tion an indication is given of the relation of the health expenditure to other government spending and to the "gross national product". The health expenditure is also stated in *per caput* terms, both in local currency and in United States dollars.

The data presented in column (3) of Table 9 show, in absolute figures, total general government expenditure on health services in terms of national currencies and the percentage change during the interval between the fiscal years indicated. Whilst it is interesting to note that there has been a substantial increase in general government health expenditure, sometimes of the order of two or three hundred per cent. or, in the case of Indonesia, of nearly 800 per cent., these data are of limited significance. In many of the countries under review two factors have operated to cancel out a large part of these increases in health service expenditure. They are, first, the decline in the internal purchasing power of the national currency and, secondly, the rapid and considerable population increase. It is only when the data are related to other yardsticks of economic development and fiscal policy, and examined in the context of the total national and governmental resources available to meet all needs, that these increases become more meaningful.

Column (4) shows total general government expenditure on health services as a percentage of gross national product. It will be seen that in 21 of the countries general government health expenditure now accounts for a larger share of the rational product than it did in the late nineteen-fifties. As would be expected, however, in those countries where, by the late nineteen-fifties, government-sponsored health agencies were already responsible for providing an extensive range of health services, the increase in the percentage of national product devoted to financing these services has usually been smaller than in several other countries. In Cyprus there has been a small decrease in the percentage of national product devoted to health services. This is probably indicative of a pause in the rate of development of these services—for they had been expanded rapidly in the early nineteen-fifties. It may also reflect the slow-down in overall economic growth between 1958 and 1960. The same reasons may be partly valid for the Philippines.

Column (5) shows general government expenditure on health services as a percentage of total general government expenditure. In the country reviews contained in Part II of this report, general government health expenditure on current account is, wherever possible, related to total general government consumption expenditure. In column (5), however, recurrent and capital expenditure on the health services have been combined and are stated together as a percentage of the overall general government budgetary expenditure.

No clear pattern emerges from the data shown in this column; some countries would appear to be devoting a considerably larger proportion of their budgetary resources to the provision of health services than they did in the late nineteen-fifties, and others slightly less. It is, however, interesting to note that the absolute increase in government health outlays, which are so striking a feature of the comparisons made in column (3), are seldom the result of the diversion of a larger share of total governmental expenditure to the health field. Indeed in many of the countries for which the increases shown in column (3) are large, there would appear to be a reduction in the proportion actually allocated to the health services. The cause of this somewhat paradoxical situation would appear to be that there has been a very substantial increase in the grand total of government expenditure. This in its turn absorbs a greater proportion of the gross national product.

In columns (6) and (7) the absolute figures presented in column (3) are shown in terms of expenditure per head of the population in the local currency and in the United States dollar equivalent. The statement in United States dollars is intended merely to provide a simple but internationally recognizable indication of the *per caput* expenditure. It is also unfortunate that the data expressed in local currency units per head of population were not available at constant prices, because—as was mentioned above—the depreciation in purchasing power of many of the countries' currencies prevents a valid appraisal of the considerable variations disclosed in the data. Nevertheless, in the majority of countries shown it is encouraging to note that, despite the "population explosion" which some of them are experiencing, the growth in *per caput* expenditure would appear *prima facie* to have been more than sufficient to compensate for any depreciation in the purchasing power of their currency.

In several of the countries where government expenditure on health services still appears to be relatively small, there exist fairly widespread networks of health clinics and other facilities which are financed partly out of government funds but mainly by religious and philanthropic bodies. Often in these countries, as the application of contemporary medical progress begins to require greater financial resources than these bodies have at their disposal, there is a tendency for government agencies to assume a more important role in the provision of such health services.

When the data shown in Table 9 are studied as a whole, one of the most striking corollaries which emerges is the extent to which governments have embraced the concept of balanced economic and social development. The countries which tended to have the lowest levels of government health expenditure in the nineteen-fifties are usually those that achieved the

TABLE 9. TRENDS IN GOVERNMENT EXPENDITURE ON HEALTH SERVICES AND ITS ROLE
IN THE NATIONAL ECONOMIES OF SELECTED COUNTRIES

Region and country	Fiscal year	General government expenditure (capital and current) on health <i>in millions</i>	General government health expenditure			
			as percentage of gross national product	as percentage of general government expenditure	expressed as expenditure per inhabitant	
					in local currency	in US \$
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Africa						
Kenya	1956/57	£	2.2	1.0	4.7	0.3
	1962/63		3.4	1.3	6.0	0.4
<i>Per cent. change</i>			+ 54.5	+ 30.0	+ 27.7	+ 32.0
Madagascar	1958	Mal. fr.	2 282.0	1.9	8.3	445.0
	1964		2 980.0	2.1	9.8	482.2
<i>Per cent. change</i>			+ 30.6	+ 11.0	+ 18.1	+ 8.4
United Republic of Tanzania ^a	1958/59	£	2.2	1.2	9.8	0.2
	1964/65		3.4	1.3	9.2	0.3
<i>Per cent. change</i>			+ 54.5	+ 4.8	— 9.4	+ 41.7
The Americas						
British Guiana	1957	WI \$	5.9 ^b	2.6	13.4	11.5
	1963		9.3 ^b	3.3	16.3	15.3
<i>Per cent. change</i>			+ 57.6	+ 29.3	+ 21.6	+ 33.0
Canada	1957/58	Can \$	531.0	1.7	6.8	31.6
	1963/64		1 365.0	3.2	11.7	72.0
<i>Per cent. change</i>			+157.1	+ 90.4	+ 72.0	+127.8
Chile	1957	escudos	51.3	2.3	11.6	7.2
	1963		241.8	2.5	11.1	29.4
<i>Per cent. change</i>			+372.0	+ 8.8	— 3.7	+308.3
Colombia	1958	pesos	161.0	0.8	6.6	11.9
	1964		533.0	1.0	11.0	35.0
<i>Per cent. change</i>			+231.9	+ 29.1	+ 66.6	+194.1
Honduras	1957	lempiras	9.1	1.3	13.1	5.4
	1963		12.1	1.4	15.1	5.9
<i>Per cent. change</i>			+ 33.0	+ 5.3	+ 15.3	+ 9.2
Peru	1958	soles	352.0 ^c	0.7	5.0 ^d	37.1
	1964		1 444.0 ^c	2.1	8.3 ^d	127.8
<i>Per cent. change</i>			+310.8	+177.5	+ 66.0	+244.5
United States of America .	1957/58	\$	5 364.0	1.2	4.1	30.4
	1963/64		9 034.0	1.5	4.7	47.4
<i>Per cent. change</i>			+ 68.4	+ 21.7	+ 14.6	+ 55.7

General note: Any apparent discrepancies in the percentage changes shown are due to the rounding of the expenditure figures for presentation in this table.

^a Tanganyika only.

^b Current expenditure only.

^c Central government health expenditure.

^d As a percentage of central government expenditure.

Region and country	Fiscal year	General government expenditure (capital and current) on health <i>in millions</i>	General government health expenditure			
			as percentage of gross national product	as percentage of general government expenditure	expressed as expenditure per inhabitant	
					in local currency	in US \$
(1)	(2)	(3)	(4)	(5)	(6)	(7)
South-East Asia						
Ceylon	1957/58	Cey. rupees	119.8	2.2	16.0 e	13.1
	1963/64		168.5	2.3	16.4 e	15.6
<i>Per cent. change</i>			+ 40.7	+ 7.9	+ 2.6	+ 19.1
Indonesia	1957	rupiahs	721.0	...	2.9	8.2
	1963		6 404.0	...	2.8	64.0
<i>Per cent. change</i>			+788.2	...	- 3.4	+678.0
Thailand	1957/58	baht	102.0 c	0.2	1.6 d	4.1
	1963/64		352.0 c	0.5	3.4 d	11.9
<i>Per cent. change</i>			+245.1	+110.0	+112.5	+290.0
Europe						
Czechoslovakia	1958	korunas	6 549.3	4.3 f	...	486.1
	1964		7 784.3	4.5 f	...	553.7
<i>Per cent. change</i>			+ 18.9	+ 5.1	...	+ 13.9
Denmark	1958/59	kroner	954.0 b	2.7	13.0 h	224.0
	1962/63		2 560.0 b	4.1	17.7 h	541.0
<i>Per cent. change</i>			+168.3	+ 51.1	+ 13.6	+141.0
Federal Republic of Germany	1957	marks	2 560.6	1.2	3.4	49.8
	1963		4 762.5	1.3	3.4	82.7
<i>Per cent. change</i>			+86.0	+ 6.8	+ 0.9	+ 66.1
Finland	1957	markkas	262.9	2.4	6.7	60.8
	1963		580.3	3.1	9.6	127.7
<i>Per cent. change</i>			+120.7	+ 31.6	+ 44.5	+110.0
Hungary	1958	forints	6 663.0	6.1 f	...	674.2
	1964		10 835.0	6.4 f	...	1 070.7
<i>Per cent. change</i>			+ 62.6	+ 5.1	...	+ 58.8
Poland	1957	zlotys	14 600.0	4.8 f	...	515.7
	1963		22 363.5	4.9 f	...	728.7
<i>Per cent. change</i>			+ 53.2	+ 2.7	...	+ 41.3
Sweden	1957	kronor	1 877.0	3.6	11.2	254.9
	1963		3 478.0	4.3	11.0	457.4
<i>Per cent. change</i>			+ 85.3	+ 19.4	- 1.6	+ 79.4
Turkey	1957/58	liras	264.8	0.9	7.2 e	10.2
	1963/64		998.8	1.5	9.4 e	32.6
<i>Per cent. change</i>			+277.2	+ 67.8	+ 30.5	+219.6

^b Current expenditure only.^c Central government health expenditure.^d As a percentage of central government expenditure.^e As a percentage of general government consumption expenditure.^f As a percentage of net material product.^g In the calculation of these date the official tourist rate has been used. See United Nations (1961) *Report on the world social situation*, New York, p. 79.^h As a percentage of general government current expenditure.

Region and country	Fiscal year	General government expenditure (capital and current) on health <i>in millions</i>	General government health expenditure			
			as percentage of gross national product	as percentage of general government expenditure	expressed as expenditure per inhabitant	
					in local currency	in US \$
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Europe (continued)						
United Kingdom of Great Britain and Northern Ireland	1957/58 1963/64	£ 694.3 1 077.0 + 55.1	3.1 3.5 + 13.8	12.0 12.9 + 7.5	13.4 20.0 + 48.9	37.5 56.0
<i>Per cent. change</i>						
Eastern Mediterranean						
Cyprus	1957 1963	Cyp. £ 0.9 1.2 + 30.0	1.0 0.9 — 13.6	5.3 5.1 — 4.8	1.7 2.0 + 18.7	4.8 5.6
<i>Per cent. change</i>						
Iraq	1958/59 1964/65	dinars 4.9 8.0 + 63.3	1.2 1.4 + 14.4	6.0 5.5 — 11.0	0.8 1.1 + 14.0	2.2 3.1
<i>Per cent. change</i>						
Western Pacific						
New Zealand	1957/58 1963/64	£ NZ 44.2 72.4 + 63.8	4.0 4.5 + 12.1	16.4 17.5 + 6.7	19.1 28.4 + 48.7	53.3 78.2
<i>Per cent. change</i>						
Philippines	1957/58 1963/64	pesos 66.0 c 112.6 c + 70.6	0.6 0.6 — 0.2	5.5 d 4.5 d — 18.2	2.6 3.7 + 42.3	1.3 1.0
<i>Per cent. change</i>						

^c Central government health expenditure.

^d As a percentage of central government expenditure.

greatest proportional increases in the period under review. Moreover, the analysis of the data contained in the table suggests that at both the national and international levels one of the most useful ways of appraising the significance of changes in government expenditure on health services is to examine these changes in the context of the gross national product rather than as isolated changes of absolute figures.

In an attempt to see whether there are any common patterns in the distribution of the costs of health services between the several levels of government, Table 10 has been prepared from the data available for two countries in each of the six WHO regions. It sets out the percentage distribution of the total general government health expenditure between the three levels already identified.

It would seem that the method of distribution is not dependent upon either the stage of a country's economic development or its size of population. It is almost certainly determined by other considerations which may be geographical, traditional, administrative or political.

In some countries, such as Sudan and the United Kingdom, the role of the central health departments is predominant; in others, such as Canada and Czechoslovakia, the role of intermediate authorities (the provincial governments in the former country and the national committees in the latter) is extremely important.

Local and municipal authorities are also involved in promoting the health of those living within their areas. Sometimes they are mainly responsible for

environmental sanitation and a limited range of preventive and auxiliary services, but in a number of countries, as exemplified by the data for French Somaliland, Laos and Madagascar, local and municipal authorities are also responsible for providing a wide range of curative services.

Moreover, it will be noted that even at the central level a substantial proportion of the total health expenditure is met by "other departments" whose primary functions are not related to health. Such departments are those responsible for education, the armed forces, veterans and law enforcement, i.e., police and prison medical services. In some countries, where semi-autonomous social security schemes finance medical care programmes for industrial and other employees, the total expenditure on these schemes is usually included in and may constitute a large part of the total general government health expenditure. This expenditure might be charged to the ministry of labour or other department responsible for the industry concerned. Such an arrangement

is particularly common in many of the Latin American republics.

There is also a tendency to distinguish between capital and recurrent expenditure, especially in countries with long-term plans for the development of health services. In some countries where the financing of health services would appear to be most decentralized the central government is very often responsible for a considerably larger share of capital outlay than of recurrent expenditure. This perhaps is not surprising if one considers the relationship between the initial capital cost of a modern hospital, and its subsequent maintenance as a functioning institution. Very often the annual running expenses of such a hospital amount to 25-30 per cent. of its original cost.

One inference which can be drawn from the data in Table 10 is perhaps even more significant than their diversity. It is that international comparisons of the health expenditure of countries can be exceedingly misleading unless full account is taken of the part

TABLE 10. FINANCING OF GOVERNMENT HEALTH SERVICES

Region and country	Fiscal year	Total general government health expenditure (in millions)	Percentage distribution by level of agency responsible			
			Central government		Inter- mediate adminis- trations	Local authorities
			Health depart- ment %	Other depart- ment %		
Africa						
Madagascar	1963	Mal. fr. 2 762.8	51.4	—	—	48.6
United Republic of Tanzania ^a	1964/65	£ 3.4	74.0	10.5	7.6	7.9
The Americas						
Canada	1963/64	Can \$ 136.5	35.3	4.1	54.8	5.8
Guatemala	1963	quetzales 16.9	67.2	—	31.6	1.2
South-East Asia						
Ceylon	1963/64	Cey. rupees 168.5	88.7	7.4	—	3.9
Indonesia	1963	rupiahs 6 404.0	65.3	—	20.6	14.1
Europe						
Czechoslovakia	1964	korunas 7 784.3	4.3	14.0	79.9	1.8
United Kingdom of Great Britain and Northern Ireland	1963/64	£ 1 077.0	90.4	—	—	9.6
Eastern Mediterranean						
French Somaliland	1964	Djib. fr. 304.9 ^b	5.3	—	60.7	34.0
Sudan	1963/64	Sud. £ 6.5	93.7	—	—	6.3
Western Pacific						
Hong Kong	1963/64	HK \$ 181.9	74.5	25.5	—	—
Laos	1963/64	kips 151.2	6.0	41.5	—	52.5

^a Tanganyika only.^b Excludes 17 million Djibouti francs allotted on capital account for projects included in development plans.

played by intermediate and local government agencies. Thus, for example, the First Report on the World Health Situation, by emphasizing the role of central government agencies, sometimes gave a somewhat incomplete picture of the real extent of the government-financed services. It is therefore difficult to make comparisons between the financial data given in the country reviews contained in this report and those much less frequently available in the First Report. This is especially true for countries where the central health agency is more responsible for co-ordinating and guiding health programmes than for actually financing them (e.g., Austria and Sweden).

This chapter was prefaced by a reference to the responsibility accepted by the Member States of the World Health Organization. But it should not be forgotten that in many countries, and until comparatively recent times, government expenditure on the provision of health services was regarded almost as a charitable item in the budget and a moral issue in political philosophy. Economic loss due to ill health was thought to affect the individual or the family rather than society as a whole. This narrow interpretation of the economics of disease has now given way to the more enlightened view that although the suffering may be personal, the economic losses are

communal. It follows that gains in productivity resulting from improvements in health benefit society as a whole, even more than the individual. In this respect it is interesting to note that many of those developing countries whose high rates of economic growth figure so prominently in the United Nations world economic surveys are those which have made the most progress in eradicating or controlling their major epidemic diseases.

In concluding this review of government health expenditure, it would also seem appropriate to recall that this chapter has been concerned with a very restricted field of governmental action in the promotion of health services, namely those actions which are directly measurable in budgetary outlays. As the country reviews presented in the second part of this report will show, a government's responsibility is manifested in many closely interrelated areas of public activity, such as the maintenance of medical education and professional standards, the surveillance of the quality and supply of pharmaceutical products, and the improvement of environmental and sanitary conditions—in brief, in the rational development of total health resources and an ever-widening deployment of medical and biological discoveries.

CHAPTER 9

SUMMARY AND CONCLUSIONS

Looking before and after has been one of the functions of the final pages of the introduction to the First and Second Reports on the World Health Situation. But the balance between retrospection and anticipation has varied. In the First Report the emphasis was on the forward look. The Second Report held the balance more evenly. In the case of the Third Report, committed as it is to a study of trends during the decade 1955-1964, retrospection may appear to be unduly in evidence. But there is an element of truth in the epigram that the further one looks back, the further one can see forward, and at the commencement of the third decade of the World Health Organization itself, the past may be of assistance in illuminating the future.

It should be remembered, however, that it is not within the terms of reference of this document to do more than describe the world health situation as it appears, and to draw such conclusions from the facts supplied by governments themselves as are appropriate and competent. Remedial action in respect of all that is not yet perfect and the formulation of future policies are for other hands to devise and then to undertake. But having said this, it is all the more essential to answer the diagnostic inquiry "What is the state of the world's health ?". It is even possible to make some tentative prognostic suggestions.

A study of the statistical situation reveals certain definite trends over the decade in the reduction of mortality at all ages and in early life. In 57 countries out of 67 in the African, South-East Asia, Eastern Mediterranean and Western Pacific Regions and in Central and South America there has been a decline in the crude death rate, varying from four per cent. to 50 per cent. This is to be contrasted with the experience of 33 countries in Europe, North America and Oceania where 19 countries registered a decline, and 14 had somewhat higher rates than in 1955, though the increase was rarely more than ten per cent. The story of the infant mortality rates during the same ten-year period is somewhat similar. Grouping countries regionally as before, but with some slight change in the numbers, the facts are as follows. In the first group of 58 countries, 48 had enjoyed a fairly substantial reduction in their infant mortality;

in the second group of 32 countries, practically every one of them was able to record some improvement. But these statements require some qualification. In the African Region, for example, the range of the percentage decline in infant mortality was from two per cent. to over 30 per cent., but in several European countries, where low rates have already been achieved, further reductions tended to be small.

There is, however, one general observation which must be made about these crude and infant death rates. In certain instances there is a tendency for rates to level off. In the case of the crude death rate in developed countries, this levelling-off process may be a prelude to a slight increase in the death rate, as the burden of the large elderly population begins to be felt. In the case of infant mortality rates, a rate of 70 per 1000 live births which begins to level off at 60 is a very different matter from a rate of 15 which appears to be losing its momentum of decline. In the latter case, some scientific discovery or clinical advance in pre-natal care may be necessary in order to achieve an even lower level of infant mortality. In the former there may be deficiencies in organization or shortages of midwifery personnel which require to be remedied before the improving impetus can be regained. This levelling-off phenomenon is not limited to crude and infant death rates, it can be noted in certain countries in relation to tuberculosis. Nor is its causation always the same, though in many cases it would be justifiable to suspect a lack of trained health staff and of auxiliary workers.

One of the striking events of the decade 1955-1964 was the recrudescence of certain diseases. This renewal of epidemic or endemic activity on the part of a disease which has been regarded as either quiescent or under control is a disturbing phenomenon. It does not necessarily reflect on the vigilance of the public health services, because the resurgence may be due to the biological adjustment of the causal organism to a previously hostile environment, or to some social change in a susceptible community, or to a variety of other causes. The outstanding example during the decade was the revival of the venereal diseases, despite the availability of a therapeutic armamentarium of considerable potency. Nor

is recrudescence limited to the so-called social diseases. Governments in their replies to the questionnaire for the Third Report on the World Health Situation have drawn attention to the return of plague, the pertinacity of *Aedes aegypti* with all the potentialities for ill which it carries, the spread of rabies and trypanosomiasis and the re-establishment of ancylostomiasis in areas from which it had apparently disappeared some years ago. Every one of the diseases mentioned, and in particular plague, was a somewhat ominous feature in the health situation of several countries in 1964 and 1965. Such recrudescences can never be dismissed as having only a nuisance value. The reappearance and possible re-establishment of these diseases have a significance which cannot be overlooked.

Even more troublesome than these recrudescences are the communicable diseases which seem to be extending within or beyond the territories in which they usually occur. None of them are complete newcomers, or alternatively old diseases in a new dress. Cholera El Tor, infectious hepatitis and the haemorrhagic fevers are all well-known pathological states, though it is probably true to say that previous contact with them had still left many of their epidemiological characteristics incompletely elucidated. Viral hepatitis in particular is one of the few communicable diseases in which little advance is being made with regard to etiology and to means of prevention. One of the characteristics of these diseases is their invasiveness. The march of cholera El Tor from the Philippines to Iran is reminiscent of Asiatic cholera in its classical period and is almost as menacing.

A passing reference has already been made to the venereal diseases as an outstanding example of recrudescence, but they are also included in that group of disorders which find some portion of their etiology in the social background of modern life. Even though their rate of increase may have attained almost the velocity of an epidemic, the venereal diseases share a number of contributory causal factors with other and, in this case, non-communicable diseases. These etiological adjuvants include population movements, urbanization, industrialization, economic affluence, and changing behaviour patterns. Control of the venereal diseases is no longer being left to the public health administrator and the clinician. In many areas they are the object of a multi-disciplinary attack—and the striking force consists not only of the public health administrator, the clinician, the public health nurse, but includes the psychologist and the sociologist also.

But the venereal diseases are not the only object of social concern. To a quite unexpected extent alcoholism has been specifically included by both developed and developing countries in their list of major health

problems. Its shadow can also be seen in the more frequent reference to therapeutic institutions in the list of health service accommodation, in the increased prominence of cirrhosis of the liver as a cause of death in several countries, and in the number of admissions to mental hospitals for which it is responsible. One government stressed its importance from this last angle. In order to deal with the problem, accommodation had been made available in its mental institutions. It was discovered that admissions for alcoholism and alcoholic psychosis amounted to 21 per cent. of the total, and one male patient in four was an alcoholic. Narcotic addiction, though attracting much more attention than alcoholism in the press of several countries, was only occasionally referred to by governments in their replies to the questionnaire.

The more enlightened modern approach to the treatment and prevention of the mental disorders and the desire to alleviate even the milder manifestations of mental and emotional distress have lead to increasing pressure on the psychiatric services. The demand is not only for additional hospital beds and consultative facilities, but also for the men and women who will constitute the necessary staff. There would appear to be a need for more recruits to this important but exacting branch of the health services.

It may be difficult to state exactly what constitutes a social disease. However, if we regard the definition as covering diseases and occurrences which have as one of their contributory etiological factors some constituent element of the syndrome of stress, strain and sophisticated living which characterizes the so-called age of affluence, then coronary infarction, lung cancer, accidents and diabetes will probably qualify. The first three have been recognized for some time as amongst the concomitants of modern living, and diabetes is apparently about to join them.

Malnutrition from many points of view, but mainly because of its association with poverty, is also a social disease still prevalent in large areas of the world. As a social phenomenon it can be alleviated but not cured by scientific research and the application of scientific discoveries. It requires in addition organized relief in kind, and personnel and finance.

This long list may appear to be nothing but a catalogue of gloom, and admittedly little of positive encouragement has been extracted so far from the replies of governments and recounted in this record. Happily there is a great deal of information of a much more stimulating and inspiring kind which has yet to be quoted. The record of malaria is outstanding; the number of persons in the consolidation phase of malaria eradication has increased from 256 million at the end of 1961 to 700 million at the same date in 1964. Improvement in the yaws situation has also been very great, and although the disease is still

present in many countries, and potentially capable of recrudescence, it is no longer the almost inescapable cause of the continuing ill health of children in many parts of the world. Another disease, poliomyelitis, which ten years ago was only beginning to yield to the mass use of prophylactic vaccine, has almost universally joined diphtheria in the limbo of controllable if not eliminated diseases. Nor can one disregard the contribution of the major therapeutic discoveries and new techniques ranging from the refinement and increased precision of antibiotics, to the developments of open heart surgery and the polytechnic attack on cancer.

These achievements, all of which when applied have a beneficial effect upon the diseases of individuals and so by accumulation on the health situation of communities, are now readily available in most of the developed countries of the world. They will also be available to a similar extent in developing countries, given time, money, equipment and personnel.

Apart from the diseases of individuals, and their extension to communities, there are certain influences of a general kind which governments designate as amongst their most urgent problems. They are environmental conditions, urbanization, and its frequent associate, industrialization.

Urban environmental squalor of varying degree has a record almost as long as history. Over the centuries, moreover, it has been periodically exacerbated when the attractions of the town began to stimulate the steady movement of rural folk to the city. It is fairly clear that with the industrial development that has become so notable a feature of life in the emerging countries, a number of foci of this actual and potential evil have come into existence. They are also to be found in a number of the already developed countries.

Many aspects of human life—health, education, nutrition, employment, conduct and happiness—are at risk. If some of the key centres for economic growth in the developing countries and elsewhere are not to be overwhelmed by a miasma of physical misery and ill health, much more urgent action will have to be taken. There would appear to be a need for a combined operation in which national governments co-operate with the United Nations and the specialized agencies. The roles of the specialized agencies vary, but certain of the basic requirements for organized and stabilized urban life—water, waste disposal, the promotion of health and the prevention of disease—come within the purview of WHO.

Akin to the question of urbanization is that of population pressure. In the First Report on the World Health Situation, the subject was only mentioned once, and then indirectly in the form of a discussion on the phenomenal growth of certain cities in India and Pakistan between the years 1931 and 1951.

In the Second Report it was one of the stated major public health problems of nine countries—three of them geographically restricted island communities. In the Third Report at least another eight express various degrees of anxiety on the subject, and references to the institution of family planning centres are beginning to appear. Undoubtedly many of the somewhat dramatic projections of the growth of the world population have had a disturbing effect, but the references in the replies of governments are based on their present difficulties as well as on speculations about the future.

This anxiety tends to increase when a census reveals to a country—as happened in Thailand and Turkey—that the rate of annual national increase has been underestimated, and in consequence an unexpectedly larger population has to be provided for.

Another type of population problem, arising from the increased longevity of human beings, is beginning to create a difficult situation in many developed countries. By reason of the age structure of their populations it is an issue which the emerging countries at present escape. The care of the aged is certainly receiving much greater attention in Europe and North America, and many countries include it in their list of urgent agenda. In each country, provided that the necessary financial resources are available, the difficulties appear likely to be resolved in accordance with national traditions and practice. Yet there is scope for more research into the inescapable phenomenon of aging and its inherent problems, physical, psychological and social. There is also the administrative aspect of the co-ordination of the various supporting services. Not all of these problems lie at WHO's door, but they are ripe for study, and are subjects upon which some Member States would be glad to have guidance.

In the questionnaire for the Third Report governments were invited to give an account of their experience in national health planning—and of the co-ordination of any such activities with other plans relating to social and economic development. The response was unexpectedly large. Although there may be considerable differences in the concept of what constitutes a plan, whether for health or for economic and social development, there has undoubtedly been a considerable spurt of activity in these fields, particularly since 1960. Much of this activity derives from the attainment of independence, which has given to so many countries freedom of thought and action and of association in the counsel of the world. It would appear on their own showing that at least 70 countries are engaged on some form of health planning, either independently or, much more frequently, in association—sometimes very close association—with economic and social planning. Health

planning is, as has been frequently said, a stringent intellectual discipline. It requires for its execution trained personnel and more perfect and perhaps more adaptable methodologies. This is another field in which apparently WHO assistance, already provided in considerable measure, will be increasingly invoked.

An analogy has at times been established between planning and research, and the two activities have much in common, but obviously in the questionnaire for the Third Report they were separate issues. With regard to research, governments were requested to give an account of the development of their organization and facilities in the field of medical and public health research during the period 1955-1964. It was suggested that they should add to this a brief summary of any important investigations and discoveries and a statement on the financing of their research undertakings.

It is typical of the changing climate of interest in research which WHO has brought about since 1958 that governments should be seeking more and more to be identified with medical and scientific investigations. At least 32 countries have now a national medical research council or its equivalent, providing an articulated organizational framework which supports and stimulates research and offers the means for its co-ordination. The quantity of research now undertaken, particularly under the organized systems of certain of the more developed countries, but also in a number of countries which would not commonly be regarded as being in that category, is indeed enormous. Ten years ago it was already considerable, but within the decade the expenditure on research in certain of the developed countries referred to has increased three- to six-fold. In this work, WHO continues to act as the universal catalyser and its sponsorship of pioneer projects is widely appreciated.

Another fact which emerges from the analysis of research work in individual countries is the increased use that is being made of applied and operational research in the functioning of health services and in their evaluation. In this field it is inevitable that the computer sciences will be of great assistance in the recording and processing of the vast quantities of data which health services appear to propagate almost as a by-product of their activity. It is through a careful study and assessment of such material that organizational faults can be corrected and future plans developed.

Finally, there has emerged from the questionnaire material the impressive and almost overwhelming picture of the great disparities in wealth, health installations and educated manpower. The disparities have always been recognized but on this occasion they are seen more clearly and are more susceptible of definition. They are to be found within

individual regions, but are more marked, more striking, when comparisons are made between the regions. This matter has been commented upon in both previous reports on the world health situation and the evidence adduced has been largely based on such criteria as the doctor/population ratio, and the number of hospital beds per 1000 inhabitants.

The latter yardstick can provide a somewhat fallacious standard of comparison. So much depends on the definition of a hospital bed, and on the national and popular tradition as to where medical care can be most acceptably received.

There is therefore an increasing tendency to rely on the doctor/population ratio as both a direct and an indirect indicator of the national availability of health services. This ratio is also commonly regarded as reflecting the quantity of the other forms of health service manpower—nurses, midwives, auxiliary personnel, technicians, sanitarians, etc., who are likely to be available. What emerges from the Report, with all the force of repetition behind it, is the fact that in very many countries with a heavy burden of public health responsibilities to be discharged there is a grave and general deficiency of health service personnel. Nor does it always follow that such staff as is available will be deployed to the best advantage. Furthermore, in these countries the facilities for training doctors may be non-existent, and for other categories exiguous in the extreme. The modal figures for doctor/population ratios in the African Region and in the South-East Asia Region excluding Indonesia are of the order of one to 21 000 and one to 7000 respectively. It is certain that the ratio of one doctor for every 10 000 inhabitants by 1970 which was suggested as the target for developing countries in the United Nations Development Decade cannot possibly be reached in many countries in Africa.

And yet there is the paradoxical antithesis that there are developed countries which regard a doctor/population ratio of one to 750 as hardly sufficient for their present needs, and certain to be inadequate in the future, as and when the techniques of modern medicine become more and more demanding.

One new feature in this series of world health situation reports is to be found in Chapter 8 of this report. It is both pertinent and relevant to the situation just described because it attempts to shed some light on the financial background of national health activities—or in brief on their cash nexus.

From data relating to 26 selected countries an attempt has been made to show the pattern of the financial allocations to national health services. It should be noted in parentheses that such a presentation is fraught with considerable difficulties because of variations in national accounting practice and the division of expenditure between the several levels of

government. However, the attempt to discern what has actually happened has been worth while. Because of these difficulties this first presentation should not be viewed too critically, but rather with the knowledge that it may not tell the whole story.

In 23 out of 25 countries for which adequate information was presented, national health services had in 1963 or 1964 a slightly higher share of the gross national product than they had had six years previously. On the other hand, a somewhat smaller share of the general government expenditure was allocated to the health services over the same period, in seven countries out of 23 for which information was available. In 16 cases, the percentage allocated to the health sector was increased, sometimes to a modest degree but occasionally by as much as 50 per cent. or 60 per cent.

There is another somewhat rough and ready indicator of the financial situation and one which serves perhaps even more vividly to mark the disparities between countries. It is the *per caput* expenditure on health services which is recorded in the majority of the reviews of the countries in Part II of this report.

An analysis has been made of the information supplied by 109 countries which were distributed as follows: 21 in the African Region; 27 in the Region of the Americas, including both Canada and the United States of America; five in the South-East Asia Region; 22 in the European Region; eight in the Eastern Mediterranean Region, and 26 in the Western Pacific Region. Of 24 countries—Canada and the United States of America and 22 countries in Europe—only four spent less than US \$5 per annum on their health services per head of population, while 16 spent

over US \$20. Amongst the remaining 85, 46 were spending below the US \$5 level, and only 15 more than US \$20. These facts are not put forward in support of any particular thesis. They furnish further evidence of disparity and can be left to speak for themselves.

The concluding paragraphs of this chapter, if they have done nothing else, have pointed out that in four major areas at least where governments are seeking to discharge their health responsibilities to their citizens, there are serious deficiencies. These deficiencies sometimes amount to actual need, and include shortages in health service manpower, and the dearth of training facilities, gaps in research in certain fields, and inadequacy of available financial resources. There is, however, at least one point of encouragement. It is the expressed desire of so many countries to organize their health planning in association with the systematic planning for economic and social development.

These then are amongst the basis requirements and needs underlying all else. When they have been even partially satisfied, other important objectives such as malaria eradication, rural development, perhaps also some elements of environmental improvement, will be more readily achieved.

Nevertheless, despite all the reservations which have been made, it would be ungracious not to acknowledge and acclaim the great achievement of the decade under review in improving the health of the world.

At the end of the decade governments had a broader and sounder foundation than existed ten years earlier upon which to build or enlarge their health services in co-operation with the World Health Organization and its fellow agencies in the international field.

Part II

REVIEW BY COUNTRY AND TERRITORY

Part II of this volume contains the reports submitted by governments in response to the request of the World Health Assembly in resolution WHA15.43.¹

These reviews of the health situation in individual countries and territories have been grouped in alphabetical order in the six regions delineated by the World Health Assembly. To facilitate reference an index to all the countries and territories is included at the end of the volume.

All additional information and amendments received from governments in accordance with resolution WHA19.52¹ have been duly incorporated. As was the case in the First and Second Reports, the material contributed by governments was not always strictly confined to the period under review, but it has again been considered undesirable to exclude valuable data solely on that account.

Since the Report covers the period 1961 to 1964, it does not reflect changes in the political status of countries and territories that have taken place since the end of that period. The designations employed and the presentation of material in this volume do not imply the expression of any opinion whatsoever on the part of the Director-General concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

¹ See note, p. II.

AFRICAN REGION

ANGOLA

Population and Other Statistics

At the last census, taken in December 1960, the population of Angola was 4 840 719. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 875 000	4 945 037	5 014 582	5 084 127
Number of live births * . . .	96 288	101 906	98 356	105 518
Number of deaths **	19 849	13 942	10 573	8 880
Number of infant deaths ** .	2 461	1 817	1 694	1 737

* Number of baptisms recorded in church registers.

** Declared deaths only.

In 1963, the communicable diseases most frequently notified were: malaria, all cases (162 934), influenza (21 900), gonorrhoea (10 259), whooping-cough (7046), measles (6272), tuberculosis, all forms, new cases (2476), syphilis, all cases (2179), leprosy, new cases (1284), amoebic dysentery (1232), yaws, new cases (906).

Organization of the Public Health Services

The health and welfare services in Angola were reorganized on the basis of a decree promulgated in 1964. Particular impetus was given to new sectors of activity related to the main public health problems of the Province: health education, school health, industrial health, preventive medicine, environmental sanitation, assistance to the sick, invalid and elderly, maternal and child welfare and mental health. The creation of new administrative divisions resulted in a modified health structure for the Province, which is divided into 15 health districts.

Hospital Services

In 1963, Angola had 668 hospitals and public institutions for in-patient care providing 12 605 beds (2.5 beds per 1000 population), distributed between the following categories of hospitals:

Category and number

General hospitals	94
Rural hospitals	81
Medical centres (without doctor)	428
Maternity clinics	51
Leprosaria	11
Hospital for communicable diseases	1
Tuberculosis hospital	1
Psychiatric hospital	1

During 1963, 66 050 patients were admitted to these institutions, excluding the leprosaria, and received 1 512 652 days of in-patient care.

Out-patient care was provided at 17 hospital outpatient departments, 152 government and private health centres and 693 government and private medical aid posts.

Medical and Allied Personnel and Training Facilities

In 1963 Angola had 391 doctors, of whom 257 were in government service and 134 in private practice. The doctor/population ratio was thus one to 12 825. Other health personnel included:

Pharmacists	64
Pharmaceutical assistants	127
Fully qualified nurses	513
Fully qualified nurses with midwifery qualifications	97
Nurse aides	545
Midwifery aides	30
Visiting nurses	10
Veterinarians	2
Sanitary engineers	150
Laboratory technicians	21
X-ray technicians	26
Rural health sanitarians	180
Microscopists	22

In 1964 the technical schools for the training of auxiliary health personnel were reorganized on a new basis. In 1963 the training of rural health sanitarians was started. Their mission is to educate the rural population in general hygiene and sanitation and to provide preventive and minor curative services.

Communicable Disease Control and Immunization Services

During the period under review, the special units and establishments set up for the control of major communicable diseases, such as trypanosomiasis, tuberculosis and leprosy, continued their activities. The vaccination campaign against smallpox was intensified and active mass immunization against poliomyelitis was started with a view to controlling an epidemic outbreak.

The following immunization procedures were carried out in 1963:

Smallpox	1 814 781
Pollomyelitis (Salk vaccine)	377 646
Yellow fever	90 212
BCG	20 933
Typhoid and paratyphoid fevers and tetanus . .	14 736
Diphtheria, whooping-cough, tetanus and typhoid fever	9 622
Diphtheria, whooping-cough and tetanus . . .	3 635
Plague	2 307

Specialized Units

In 1964, 42 government and private maternity centres, one pre-natal dispensary and 19 government and private child health centres provided services for mothers and children. Four dental health units treated 4481 patients. Other specialized units included one psychiatric out-patient clinic, six tuberculosis dispensaries, five mobile trypanosomiasis teams, two mobile tuberculosis teams, one health institute and two public health laboratories.

Environmental Sanitation

In 1964, 308 285 inhabitants in urban centres and 1 074 679 in rural areas were served with piped water supplies. Sewerage systems served 251 244 inhabitants in urban centres and 1 026 976 in rural areas.

Major Public Health Problems

The most important health problems in Angola are those relating to the prevalence of bilharziasis, intestinal parasitoses and malaria.

Government Health Expenditure

In 1964, the government budget involved an estimated expenditure of 4055 million escudos, of which 131 million escudos (i.e., 3.2 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 26 escudos per head on these services, as compared with 21 escudos per head in 1961.

BASUTOLAND ¹

Population and Other Statistics

At the last census, taken in April 1956, the population of Basutoland was 641 674. Population estimates for the years 1961-1964 are given below:

1961	699 000
1962	713 000
1963	727 000
1964	729 000

In 1960, the birth rate was 39 per 1000 population, the death rate 23 per 1000 and the infant mortality rate 179 per 1000 live births. The natural increase was 1.6 per cent.

In 1964, the following were among the main causes of death: chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (180), tuberculosis, all forms (175), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (120), homicide and operations of war (104), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (97), avitaminoses and other deficiency states (92), all accidents (89, including six in motor-vehicle accidents), pneumonia (80), malignant neoplasms (43).

In 1962, the communicable diseases most frequently notified were: gonorrhoea (8309), tuberculosis, all forms, new cases (4231), whooping-cough (2555), influenza (2388), measles (2141), syphilis, new cases

(1391), dysentery, all forms (1129), typhoid and paratyphoid fevers (147); 336 cases of leprosy were treated in the leprosarium.

Organization of the Public Health Services

Following the adoption of a new constitution and the general elections of April 1965, certain changes have been made in the organization of the health services. The Permanent Secretary for Health, who is under the Minister of Health, is responsible for the organization of the health services in Basutoland. He is assisted by a senior medical officer, a medical officer of health, a senior matron and a non-medical administrative secretary. The Ministry of Health provides health services to the territory and subsidizes mission hospitals. Local authorities have also started to develop health centres and dispensaries.

The Ministry of Agriculture is responsible for education in nutrition. Co-ordination with other ministries concerned with nutrition is established through the permanent bureau of nutrition, in which are representatives of the ministries of health, education, agriculture and local government.

Sanitary services are carried out by the local authorities under the supervision of central government health inspectors.

Hospital Services

In 1964, the Ministry of Health maintained one general hospital and eight rural hospitals which

¹ Now an independent State under the name of Lesotho.

provided 819 beds and to which 19 345 in-patients were admitted. Additional medical care facilities were available in eight mission hospitals. There were also a psychiatric hospital with 90 beds and a leprosarium with 54 beds. The grand total of beds in institutions was 1493 in 1963, equivalent to 2.0 beds per 1000 population.

Out-patient facilities were available at nine government hospital out-patient departments, four health centres and four dispensaries, which were attended by 227 697 new patients. Additional out-patient services were given at eight mission hospitals and 13 medical aid posts, at which 112 935 new patients received medical care.

Medical and Allied Personnel

At the end of 1963 there were 35 doctors in Basutoland, of whom 16 were in government service. The doctor/population ratio was thus one to 20 800. Other health personnel included:

Dentist	1
Pharmacists	2
Fully qualified nurses	12
Fully qualified nurses with midwifery qualifications	110
Assistant nurses	2
Nurse auxiliaries and ward attendants	135
Veterinarians	2
Health inspectors	3
X-ray technician	1
Physical therapist	1

Communicable Disease Control and Immunization Services

It is estimated that 0.05 per cent. of the population have open tuberculosis. As a result of a pilot tuberculosis control project a national integrated control programme is being planned. It will be based on case-finding by microscopy of sputum, ambulatory treatment and BCG vaccination of the population at risk, without preliminary tuberculin testing. Leprosy patients are required by law to be admitted to the leprosarium. There are nine leprosy inspectors who check discharged patients and are engaged in case-finding.

The immunization programmes cover a very small number of persons, owing to the limited health personnel available for preventive work and to the small number of child health centres.

The following vaccinations were carried out in 1963:

Smallpox	92 197
Typhoid and paratyphoid fevers	10 040
Diphtheria and whooping-cough	3 225
Diphtheria	691
Diphtheria, whooping-cough and tetanus	143
Poliomyelitis (Sabin vaccine)	88

Specialized Units

Pre-natal services were available in 1964 at 22 centres where 15 575 pregnant women attended. Eight child health centres looked after 5637 children under one year. Deliveries attended by a doctor or qualified midwife numbered 4163. The dental health unit gave treatment to 4808 patients. Other specialized units included a hospital rehabilitation department, four psychiatric out-patient clinics, a leprosy clinic and a public health laboratory.

Environmental Sanitation

In Maseru, which has an estimated population of 9000, there is a piped water supply to the larger dwellings, which have a total of about 1000 inhabitants. The remaining population of the capital relies on public fountains. There are numerous small communities in Basutoland and it is estimated that over 90 per cent. have a reasonable water supply from springs.

The capital has a sewerage system for the main portion of the town. It does not, however, cover the most densely populated areas. The population in these areas has either individual pail latrines or public pail latrines.

Major Public Health Problems

The major health problem in Basutoland is malnutrition. As a result of the nutrition survey carried out by WHO from 1956 to 1960, a nutrition education scheme supported by FAO and UNICEF has been started. The lack of rural health services, particularly in relation to maternal and child welfare services, is another health problem. The incidence of tuberculosis and of leprosy is also causing concern. In rural sanitation the most pressing problem is the supply of safe water to the villages.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In 1964 a pre-independence constitution was adopted which came into force after the general elections in April 1965. A parliament with two houses was established—namely the National Assembly and the Senate. There is a cabinet with ministers responsible for the major departments. Developments in the health field during the decade have been in the increase of health staff mainly in relation to hospitals. Colonial development and welfare grants have contributed to

the building of hospitals and extensions to existing district hospitals.

International Collaboration

Basutoland received assistance from FAO, UNICEF, WHO, and the Oxford Committee for Famine Relief.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure was 7.0 million rand of which 736 000 rand (i.e., 10.5 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of one rand per head on these services.

BECHUANALAND ¹

Population and Other Statistics

At the last census, taken between January and June 1964, the population of Bechuanaland was 514 378. Mid-year population estimates for the period under review are given below:

1961	497 000
1962	512 000
1963	527 000
1964	543 000

The communicable diseases most frequently treated in 1963 in in-patient and out-patient establishments were: gonorrhoea (16 287), influenza (5789), tuberculosis, all forms, new cases (4222), syphilis, new cases (3710), whooping-cough (3188), measles (1306), malaria, new cases (1122), dysentery, all forms (1107).

Hospital Services

At the end of 1964, Bechuanaland had 11 rural hospitals providing 1309 beds and seven medical centres (without doctor) providing 210 beds. The total capacity of 1519 beds was equivalent to 2.8 beds per 1000 population. During the year 21 820 inpatients were admitted to the hospitals.

Out-patient facilities were available in 1963 at seven hospital out-patient departments, 13 health centres, 17 dispensaries and 60 other establishments, where 235 138 out-patients made altogether 435 178 attendances.

Medical and Allied Personnel

At the end of 1964, Bechuanaland had 26 doctors—one doctor per 21 000 population. Other health personnel included:

Pharmacist	1
Fully qualified nurses with midwifery qualifications	135
Student nurses	34
Student nurse aides	49
Veterinarians	15
Sanitary engineer	1
Laboratory technicians	2
Medical aides	45
Sanitary assistants	7
Field officers (rodent control duties)	2

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	120 912
BCG	86 230
Typhoid and paratyphoid fevers	5 000
Diphtheria	1 664
Diphtheria, whooping-cough and tetanus	1 621
Poliomyelitis (Sabin vaccine)	1 000

Specialized Units

In 1963, maternal and child health care was based on 17 centres, where 26 183 attendances were made by pregnant women and 2931 attendances by children. A total of 4793 deliveries were attended by a doctor or qualified midwife.

Government Health Expenditure

In the fiscal year 1964/65 the total general government expenditure on current account amounted to 8.4 million rand, of which 658 598 rand (i.e., 7.8 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 1.2 rand per head on these services. A further sum of 310 000 rand was spent on capital account for the improvement and expansion of health facilities.

CAMEROON

Population and Other Statistics

The population of Cameroon was estimated at 5 103 000 in 1964. Registration of births and deaths is as yet incomplete.

In 1965, the communicable diseases most frequently registered in the main hospitals were: malaria, new cases (214 338), measles (21 957), whooping-cough (14 151), amoebic dysentery (13 411), yaws (13 312), pulmonary infections (10 067), bacillary dysentery (8176), influenza (3012), trachoma (1239), leprosy

¹ Now an independent State under the name of Botswana.

(1237), meningococcal infections (797), typhoid and paratyphoid fevers (422).

Organization of the Public Health Services

The public health services of Cameroon are under the control of the Office of the Commissioner-General for Public Health and Population, which was organized in June 1965. The central services of this Office include: the Directorate of Public Health, the Service for Social Affairs and Population, and the Under-Directorate of Administrative and Financial Affairs. The Directorate of Public Health is subdivided into various departments dealing with: endemic diseases and rural health, maternal and child health, malaria eradication, pharmaceutical services, medical and hospital surveys and statistics, public hygiene and environmental sanitation, nursing care and education. The external services of the Office of the Commissioner-General include various central and territorial establishments. In West Cameroon a deputy with the rank of director represents the Commissioner-General for Public Health and Population.

Hospital Services

In 1964/65, Cameroon had 835 hospitals and medical centres with 13 499 beds, including 7750 beds in 554 state-maintained establishments. The bed/population ratio was 2.6 per 1000. The 13 499 beds were distributed as follows:

Category and number	Number of beds
General hospitals	71
Medical centres	730
Leprosaria	34
	9 965
	3 141
	393

In 1964, a total of 94 404 attendances were recorded at these establishments, representing 312 644 days of treatment, and over 1.5 million consultations were given in out-patient services.

Medical and Allied Personnel

In 1965, Cameroon had 196 doctors, of whom 127 were in government service and 69 in private practice. The doctor/population ratio was approximately one to 26 000. Other health personnel included:

Dentists	7
Midwives	79
Fully qualified nurses	454
Assistant nurses	105
Nurses (brevetés)	545
Auxiliary nurses	1 953
Assistant birth attendants	495

Communicable Disease Control and Immunization Services

Intestinal parasitoses are very common in the country. In 1963, 28.3 per cent. of all patients at out-patient and in-patient institutions were suffering from these infestations. In the same year, 11.7 per cent. of patients were treated for malaria. In 1962, a malaria pre-eradication programme was initiated with the assistance of WHO. The Major Endemic Diseases Service (Service des Grandes Endémies), which operates throughout the country, has control programmes for the most prevalent communicable diseases, including the treponematoses, filariasis, leprosy, bilharziasis and tuberculosis. The methods employed comprise case-finding, vaccination and treatment. In 1962, 1 449 300 smallpox vaccinations were carried out.

Specialized Units

In 1963, seven centres were engaged in maternal and child welfare work. Domiciliary care was given to 74 433 pregnant women and more than one million visits were paid to children under five years of age. There were four dental health units and two public health laboratories.

Major Public Health Problems

The most important public health problem is the very uneven distribution of health and medical care facilities and personnel between rural and urban areas. In general, urban centres are well provided with hospital equipment and personnel, whereas these services are often lacking in rural areas. It is the objective of the second five-year plan to remedy this situation and to establish a network of health installations throughout the country. The training of medical and paramedical personnel is also causing concern to the authorities. Directly related to the solution of these two main problems are the eradication of malaria and the control of communicable diseases, which also figure among the most important health problems.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade was marked by the attainment of independence in 1960 and the reunification of East and West Cameroon in 1961.

National Health Planning

In 1959 the Government of Cameroon requested the *Société générale d'Etudes et de Planification* to undertake the necessary surveys for the preparation of a

development plan. On the basis of the reports submitted, the Ministry of Finance and of the Plan prepared a first five-year economic and social development plan, which was approved by the National Assembly of Cameroon in December 1960. This plan covered the period 1961-1965 and involved an expenditure of 53 182 million CFA francs provided by local funds and external aid. One of the sections of this first plan dealt with public health (health establishments, preventive medicine, nutrition, school health). The execution of the plan was the responsibility of the Directorate of Planning and of Technical Co-operation, which is under the Ministry of Finance and of the Plan. The Government created several councils and committees which were responsible for the co-ordination of the various sections of the plan. Health planning activities were being carried out by the technical services of the Office of the Commissioner-General for Public Health and Population, the World Health Organization public health adviser and a specialist society commissioned by the French Government. The preliminary plans prepared at these levels were used as a basis for the second five-year plan. Major objectives of this plan were to be: training of medical and paramedical personnel; development of preventive medicine; development of programmes for malaria eradication, maternal and child health, and the adequate health coverage of rural areas.

Medical and Public Health Research

There are three research organizations in Cameroon: the Pasteur Institute, which carries out research parti-

cularly in the field of virology; the medical research centre at Kumba, which carries out research on filariasis and onchocerciasis; and the nutrition section of the research institute of Cameroon.

International Collaboration

Cameroon receives assistance in the field of health from bilateral and international sources. The French *Fonds d'Aide et de Coopération* gives a great deal of financial aid and provides medical and paramedical personnel. There is at present a health staff of about 80 persons in Cameroon on loan from the French Government. The Development Fund for Overseas Countries of the European Economic Community finances two programmes for the construction of hospitals and health centres, one in the northern part of the country and one in the western part. The United States Agency for International Development, the USSR, the United Kingdom, Switzerland and Israel also give assistance in the health field. Numerous projects are being implemented with the assistance of UNICEF and WHO.

Government Health Expenditure

In the fiscal year 1964/65 the state budget amounted to 20 196 million CFA francs, of which 2026.5 million francs (i.e., 10 per cent.) were allocated to the provision of health services. This was equivalent to an expenditure of 397 CFA francs per head on these services, as compared with 368 francs per head the previous year.

CAPE VERDE ISLANDS

Population and Other Statistics

At the last census, taken in December 1960, the population of Cape Verde was 199 661. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	204 114	208 851	216 384	224 908*
Number of live births	8 319	8 952	10 760	10 170
Birth rate (per 1000 population)	40.8	42.9	49.7	45.2
Number of deaths	2 477	2 452	3 189	2 307
Death rate (per 1000 population)	12.1	11.7	14.7	10.3
Natural increase (per cent.) . .	2.87	3.12	3.50	3.49
Number of deaths, 1-4 years .	489	382	685	333
Death rate, 1-4 years (per 1000 population at risk)	18.9	15.7	28.4	13.0
Number of infant deaths . . .	862	950	1 061	817
Infant mortality rate (per 1000 live births)	103.6	106.1	98.6	80.3
Number of maternal deaths . .	25	15	29	20
Maternal mortality rate (per 1000 live births)	3.0	1.7	2.7	2.0

* Provisional figure.

Of the 2307 deaths recorded in 1964, the main causes were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (481), senility without mention of psychosis, ill-defined and unknown causes (467), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (261), tetanus (157), pneumonia (129).

The communicable diseases most frequently notified in 1963 were: influenza (10 299), malaria, new cases (3597), whooping-cough (2992), gonorrhoea (1144), measles (872), tuberculosis, all forms, new cases (748), syphilis (674), dysentery, all forms (393), infectious hepatitis (265).

Organization of the Public Health Services

The overall responsibility for health in Cape Verde rests with the Overseas Directorate General of Health

and Welfare in Lisbon, which was established in 1960. It comprises two main departments: the Department of Health and Hygiene and the Department of Welfare. The Director-General is assisted by health and welfare inspectors and two councils dealing respectively with health and hygiene and with welfare. The inspectors make periodic inspection tours in the overseas provinces.

The health and welfare services in Cape Verde are placed under the immediate authority of the provincial governor, acting through the provincial health and welfare department. The following services are placed under the control of the health and welfare services: malaria eradication, survey and control of endemic diseases, tuberculosis control, leprosy control, school health, maternal and child health and nutrition. The province of Cape Verde is divided into health districts, which are subdivided into health units. Each district is in the charge of an inspector.

Hospital Services

In 1964, the total number of hospitals was ten, with 499 beds (equivalent to 2.2 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	3 380
Rural hospitals	5 39
Leprosaria	2 80

During the year, 6406 patients were admitted to these hospitals excluding the two leprosaria, and received 113 646 days of in-patient care.

Out-patient facilities were provided at three hospital out-patient departments, three polyclinics, nine health centres, six dispensaries and 18 medical posts.

Medical and Allied Personnel and Training Facilities

In 1964, Cape Verde had 25 doctors, of whom 21 were working in government service and four in private practice. The doctor/population ratio was one to 9000. Other health personnel included:

Pharmacists	4
Fully qualified midwife	1
Fully qualified nurses	44
Nursing aides	3
X-ray technicians	2
Mission nurses	7
Sanitarians	8

Training facilities for nurses are available at the hospital in Praia and at the hospital on São Vicente Island. Following a decree promulgated in 1964, these training schools are being reorganized to include training for a wider range of nursing and paramedical personnel.

Communicable Disease Control and Immunization Services

A tuberculosis control campaign was initiated in 1960 with tuberculin testing and BCG mass vaccination. A leprosy control programme is in operation. Other projects have been started to combat filariasis, ancylostomiasis, salmonellosis, favus, etc. The following immunization procedures were carried out in 1964:

BCG	31 192
Smallpox	9 427
Yellow fever	2 226

Specialized Units

In 1964, maternal and child welfare services were based on six pre-natal and six child health centres, which were attended by 1230 pregnant women and 2965 children under one year of age. Domiciliary visits were paid to 4293 infants. There were 1258 deliveries (11.7 per cent. of all deliveries) attended by a doctor or qualified midwife. The total school population of 10 404 children was under medical supervision at two school health centres. Nine dental health units treated 6319 patients. Other specialized units included a trachoma clinic, two tuberculosis clinics, five malaria clinics, two leprosy dispensaries, two venereal disease clinics, one clinic for the treatment of favus, one ancylostomiasis clinic and one filariasis clinic. Three public health laboratories carried out 57 586 examinations.

Environmental Sanitation

At the end of 1963, of the total population of 221 169, 11 690 had piped water to their dwellings, 32 468 depended on public fountains, 128 401 on community or private wells and 48 610 had water from other sources. With regard to sewage collection and disposal, some 3500 inhabitants had sewerage systems, 27 000 sewage treatment facilities and 24 000 were served by individual installations—either septic tanks or latrines.

Major Public Health Problems

The most serious public health problem in Cape Verde is the high incidence of malaria. Other important problems are tuberculosis, ancylostomiasis and gastro-enteritis of the newborn.

Government Health Expenditure

In 1964, the total general government current expenditure on health services amounted to 8 930 658 escudos. This was equivalent to an expenditure of 39.7 escudos per head on these services. A further sum of 2 272 730 escudos was spent on capital account on projects included in plans for the development and improvement of health facilities.

CHAD

Population and Other Statistics

Population estimates for the period 1961-1964 are given in the following table:

1961	2 680 000
1962	2 720 000
1963	2 800 000
1964	3 300 000

The communicable diseases most frequently notified in 1963 were: malaria, new cases (79 231), gonorrhoea (39 312), syphilis, all cases (30 139), amoebic dysentery (12 314), measles (5784), trachoma (4414), tuberculosis, all cases (3674), influenza (2692), whooping-cough (2277), leprosy (2042), trypanosomiasis (1485), meningococcal infections (384), bacillary dysentery (203).

Organization of the Public Health Services

The responsibility for the health services in Chad rests with the Directorate of Public Health which is a department of the Ministry of Public Health and Social Affairs. At the regional level, each of the 13 *préfectures* has a health service. The Major Endemic Diseases Service (Service des Grandes Endémies) is responsible for the prevention and control of communicable diseases and for the organization of vaccination campaigns.

Hospital Services

At the end of 1964, Chad had 42 hospitals providing 3151 beds, which is equivalent to a bed/population ratio of approximately one per 1000. During 1964, 43 377 patients were admitted to these establishments and received 736 446 days of in-patient care. The 3151 beds were distributed as follows:

Category and number	Number of beds
General hospitals	4 1 477
Rural hospitals	11 785
Medical centres	27 889

Out-patient facilities were available in 1964 in four hospital out-patient departments, one polyclinic, 11 rural hospitals, 93 dispensaries, 27 medical centres and nine mobile health units. Approximately 1.5 million new out-patients attended these centres.

Medical and Allied Personnel

In 1964, Chad had 45 doctors of which 44 were in government service. The doctor/population

ratio was one to 73 000. Other health personnel included:

Medical assistants	42
Dentists	2
Pharmacists	7
Fully qualified midwives	5
Traditional birth attendants	46
Fully qualified nurses	8
Nurses with local diploma	111
Nurses without diploma	98
Other nursing personnel	425
Sanitary engineer	1
Sanitary Inspectors	4
Laboratory technicians	54
X-ray technicians	22

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	559 974
BCG	139 299
Yellow fever	1 650

Specialized Units

Maternal and child welfare services are provided at the hospital out-patient departments, the polyclinic and the 11 rural hospitals. Domiciliary care was given in 1964 to nearly 10 000 pregnant women, 41 569 children under one year of age and 47 845 children aged between one and five years. In all, 12 238 deliveries were conducted by a doctor or qualified midwife. There is also a school health service and a dental health unit.

Major Public Health Problems

The most important public health problems in Chad are at present the control and eradication of the major endemic diseases, the development and reinforcement of the health infrastructure, the establishment of an extensive network of medical and health care facilities and the training of the necessary health personnel.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Chad became independent in 1960. The general organization of public health services has remained the same as before independence. The Ministry of Public Health and Social Affairs has been established.

National Health Planning

The *Haut Commissariat au Plan* is responsible for all planning activities at the central level. In 1965, a five-year plan was prepared, the objectives of which, in the field of health, are the reorganization of the administrative structure, the development and extension of the health services, and the training of national health personnel.

Government Health Expenditure

In 1964, the total general government expenditure amounted to 6426 million CFA francs of which 681 million (i.e. 10.6 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 206 CFA francs per head on these services.

COMORO ARCHIPELAGO

Population and Other Statistics

At the last census, taken in 1958, the population of the Comoro Archipelago was 183 133. It was estimated at 197 000 in 1964.

The communicable diseases most frequently notified in 1963 were: malaria (7715), syphilis (5723), gonorrhoea (1394), influenza (836), measles (616), leprosy (363), tuberculosis, all forms (207), whooping-cough (51), infectious hepatitis (41), bacillary dysentery (28), tetanus (16).

Organization of the Public Health Services

The Ministry of Health has the overall responsibility for all health functions in the territory. The Minister of Health is assisted by a Director of Public Health who is responsible for the protection of the public health, the control of endemic diseases and the medical and preventive health services. The Directorate of Health comprises administrative and technical services and has charge of the territorial pharmaceutical stores. Each of the four islands of the archipelago constitutes a medical district in the charge of a medical officer who is responsible for the administrative and technical organization of his district.

Hospital Services

In 1964 there were four general hospitals with 376 beds and two rural hospitals with 70 beds, making a total number of available beds of 446, equivalent to 2.3 beds per 1000 population. In all, 5648 patients were admitted during the year and received 94 168 days of in-patient care.

Medical and Allied Personnel

The Comoro islands had 15 doctors in 1964. This is equivalent to a doctor/population ratio of one to 13 130. There were also:

Dentists	2
Pharmacist	1
Fully qualified midwives	4
Other midwives	9
Fully qualified nurses	15
Assistant nurses	41
Other nurses	35
Veterinarian	1

Communicable Disease Control and Immunization Services

No epidemic disease occurred in the islands during the period under review. The following immunization procedures were carried out in 1964:

Smallpox	5 425
Yellow fever	356
Cholera	185
Typhoid and paratyphoid fevers, diphtheria and tetanus	97
Tetanus	25

Major Public Health Problems

The most important health problems in the islands are related to the organization of the health services, to the training of health personnel and to the extension of hospital facilities. The control of communicable diseases and the problem of malnutrition also require attention.

National Health Planning

The Comoro Archipelago has no long-term health plan. Programmes for the development and extension of the hospital network and for training of nursing personnel are in operation. It is also proposed to establish a mobile team to deal with hygiene in general, and carry out mosquito control and case-finding activities.

Government Health Expenditure

In 1961 the total general government health expenditure was 90 million CFA francs. This was equivalent to an expenditure of 474 CFA francs per inhabitant on these services.

GABON

Population and Other Statistics

At the last census, taken between December 1960 and April 1961, the population of Gabon was 447 880. The following are population estimates for the period under review:

1961	448 564
1962	452 600
1963	456 000
1964	459 000

In 1960/61, the birth rate was 36 per 1000 population, the death rate 30 per 1000 population and the infant mortality rate 129 per 1000 live births.

The communicable diseases most frequently notified in 1964 were: malaria, new cases (63 468), influenza (7035), yaws, new cases (4131), whooping-cough (3132), measles (2171), amoebic dysentery (1516), bacillary dysentery (771), leprosy (402), trypanosomiasis (101), smallpox (49).

Organization of the Public Health Services

The Minister of Public Health is responsible for all the health services in the country. The Minister, who is assisted by a cabinet and by a technical adviser, is chairman of several national committees concerned with school health, maternal and child health, sanitation, and planning. The Director of Public Health is responsible for the organization and administration of the health services. The Directorate has several divisions which deal respectively with personnel, technical services, administration, finance and supply. Recently departments for nutrition and environmental sanitation have been established, the first under the control of an FAO expert and the second under the control of a WHO sanitary engineer. There are two main sections in the technical department of the Directorate: the section for preventive and mobile medicine and the section for curative medicine. The Director of Public Health also supervises the training school for nurses and midwives.

Hospital Services

In 1962, Gabon had two general hospitals with 630 beds and 27 rural hospitals with 2133 beds. These 2763 beds were equivalent to 6.1 beds per 1000 population. During the year 27 521 patients received 625 707 days of in-patient care.

Out-patient facilities were available in 1964 at four hospital out-patient departments, one polyclinic, 25

health centres, 61 dispensaries and three mobile health units.

Medical and Allied Personnel and Training Facilities

In 1964, 68 doctors were working in Gabon—57 in government service and 11 in exclusively private practice. The doctor/population ratio was one to 6700. Other health personnel included:

Dentist	1
Pharmacists	9
Fully qualified midwives	8
Assistant midwives	8
Auxiliary midwives	56
Fully qualified nurses	86
Assistant nurses	651
Veterinarians	2
Sanitarians	12
Physical therapists	2
Laboratory technicians	3
X-ray technician	1
Other health auxiliaries	587

Libreville has a nursing school which trains nurses, midwives and sanitary technicians. Courses for laboratory technicians were due to start in 1966.

Communicable Disease Control and Immunization Services

Malaria, leprosy, trypanosomiasis, tuberculosis, intestinal bilharziasis and other intestinal parasitoses and measles are prevalent in the country and present serious health problems. The following immunization procedures were carried out in 1962:

Smallpox	92 154
Yellow fever	1 137
Diphtheria and tetanus	150
Diphtheria, tetanus, typhoid and paratyphoid fevers	87
Diphtheria, whooping-cough and tetanus	2
Typhoid and paratyphoid fevers	16
Cholera	10

Specialized Units

In 1964, 17 centres were engaged in maternal and child care. Domiciliary care was given to 9950 pregnant women, 7105 children under one year and 7243 children aged between one and five years of age. Deliveries attended by a doctor or qualified midwife totalled 7430. There were 54 200 schoolchildren (approximately 60 per cent. of the total school population) under medical supervision. The dental health unit treated 6400 patients, and 150 new out-patients attended the psychiatric clinic. The public health laboratory carried out 82 438 examinations.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Gabon attained internal autonomy in 1957 and became independent in 1960. A first preliminary five-year development plan covering the years 1961-1965 was prepared in 1960. This was followed in 1965 by a plan for economic and social development covering a period of 15 years (1966 to 1980).

National Health Planning

The health plan, prepared in 1963/64 with WHO assistance, is an integral part of the overall economic and social development plan. The Directorate of Public Health plans to develop a mobile rural health service which will organize curative and preventive services through mobile teams and rural dispensaries. The aim is to create a network of health services throughout the whole country.

International Collaboration

Gabon received assistance in health matters from UNICEF and WHO and through bilateral agreements, especially with France, which provides an important amount of technical assistance. The United States Agency for International Development also provided equipment. Agreements were signed with Cameroon, Congo (Brazzaville), Central African Republic and Chad, for the establishment of the *Organisation de Coordination et de Coopération pour la Lutte contre les Grandes Endémies en Afrique Centrale* (OCCGEAC) whose headquarters are in Yaoundé.

Government Health Expenditure

In 1964, the total state budget involved an estimated expenditure of 7360 million CFA francs, of which 1137 million francs (i.e. 15.4 per cent.) were allocated to the provision of health services. This was equivalent to an expenditure of 2480 CFA francs per head on these services, as compared with 841 francs in 1960.

GHANA

Population and Other Statistics

At the last census, taken in March 1960, the population of Ghana was 6 726 815. Mid-year population estimates for the period 1961-1964 are given in the following table:

1961	6 960 000
1962	7 148 000
1963	7 340 000
1964	7 537 000

The communicable diseases most frequently notified in 1963 were: malaria, all cases (812 916), measles (39 908), dysentery, all forms (18 493), whooping-cough (13 099), gonorrhoea (9400), leprosy (1262), typhoid fever (886).

Hospital Services

In 1964, Ghana had 156 hospitals and establishments for in-patient care providing 7827 beds, which is equivalent to a bed/population ratio of one per 1000. These beds were distributed as follows:

Category and number	Number of beds
General hospitals	113
Medical centres (without doctors)	36
Tuberculosis hospitals	2
Maternity hospital	1
Paediatric hospitals	2
Psychiatric hospitals	2
	6 776
Medical centres (without doctors)	216
Tuberculosis hospitals	40
Maternity hospital	236
Paediatric hospitals	74
Psychiatric hospitals	485

Out-patient facilities were available in 1964 at 120 hospital out-patient departments, six polyclinics, 36 health centres and 197 dispensaries. There were 1 428 076 new out-patients, and altogether over four million attendances were made at these out-patient departments and units.

Medical and Allied Personnel

In 1964, 565 doctors were employed in government service. The doctor/population ratio was thus one to 13 000. Other health personnel employed by the Ghanaian Government included:

Health centre superintendents and rural health service assistants	76
Dentists	36
Pharmacists	355
Pharmaceutical assistants	61
Fully qualified midwives	455
Fully qualified nurses	1 600
Fully qualified nurses with midwifery qualifications	676
Sanitary engineer	1
Sanitary inspectors	528
Physical therapists	7
Laboratory technicians	136
X-ray technicians	49
Malaria field officers	330
Leprosy control officers	73

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	995 571
BCG	27 157
Yellow fever	20 650
Typhoid and paratyphoid fevers	2 405
Diphtheria (combined)	2 175
Cholera	1 692
Whooping-cough (combined)	1 088
Tetanus (combined)	87

Specialized Units

In 1964, maternal and child health services were based on 255 pre-natal care units and 453 child health centres. In all, 282 361 children under one year and 242 797 children between one and five years of age attended the child health centres. Domiciliary care was given to 146 728 pregnant women, 78 684 children under one year and 198 468 pre-school children. A total of 42 527 deliveries were attended by a doctor or qualified midwife. The 25 dental health units treated 39 626 patients. The attendance of 8121 new patients

was recorded at the psychiatric out-patient clinic. Other specialized units included seven school health services and two public health laboratories.

Environmental Sanitation

In 1960, of the total population of 6 726 815, approximately 300 000 had piped water to their dwellings, some 1.5 million had water from standpipes and over five million depended on water from community or private wells.

Government Health Expenditure

Under the current seven-year development plan (1963/64 to 1969/70) actual expenditure for the expansion and improvement of health services during the fiscal year 1963/64 was £G 1.7 million as compared with £G 3.9 million foreseen in the plan.

LIBERIA

Population and Other Statistics

At the last census, taken in April 1962, the population of Liberia was 1 016 443. Population estimates for the years 1961-1964 are given in the following table:

1961	1 003 000
1962	1 016 000
1963	1 027 000
1964	1 038 000

Hospital Services

In 1960, Liberia had 30 hospitals and establishments for in-patient care, providing 3374 beds. This is equivalent to a bed/population ratio of 3.4 per 1000, of which 2.0 per 1000 were for leprosy. This total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	16
Tuberculosis hospital	1
Infectious diseases hospital	1
Maternity hospital	1
Psychiatric hospital	1
Eye clinic	1
Leprosaria	9
	2 000

Medical and Allied Personnel

In 1964, there were 90 doctors working in Liberia. The doctor/population ratio was one to 12 000. Other health personnel included:

Dentists	14
Pharmacists	13
Fully qualified midwives	40
Assistant midwives	10
Fully qualified nurses	190
Auxiliary nurses	592

Communicable Disease Control

Because of the lack of notifications, no accurate information on morbidity and mortality caused by infectious diseases is available to the National Public Health Service. Measles is endemic but also appears in epidemic form during December and January. The disease is severe and often results in complications and a heavy rate of mortality. The incidence of hookworm is high. A number of surveys have been carried out in different parts of the country and the incidence was found to vary between 20 and 94 per cent. In general, the prevalence is lower in Monrovia and higher in the rural areas. Malaria and tuberculosis are widespread and constitute major public health problems for the country. Yaws has been nearly eradicated.

Specialized Units

In 1964, Liberia had six maternal and child health centres, six dental service units, two psychiatric out-patient clinics and a public health laboratory.

Major Public Health Problems

The reorganization of the administration of the Department of Health, both at the central and at local

level, is a problem of great importance. The health services have suffered from a lack of central direction, guidance and supervision. The establishment of basic health services under adequate supervision is another priority matter. The work of many medical institutions is hampered by the shortage of equipment and drugs. The lack of good communications adversely affects the administration of the health services. Other important and urgent problems are the organization of maternal and child health services throughout the country and the control of communicable diseases.

National Health Planning

The first attempt at planned development was made in 1951 when the five-year development programme was inaugurated with the advice and guidance of the joint USA/Liberian Commission for Economic Development. This programme was extended in 1954 to a nine-year development programme, which terminated in 1960. The National Planning Agency was created in 1962. Its main objective was to prepare an effective

social and economic plan. The Agency functions through a national planning council and through its executive office, which is in the charge of a director-general who also acts as secretary of the National Planning Council. This council consists of the President of Liberia and seven cabinet members, including the Director-General of Public Health Services. The National Health Planning Committee is responsible for the preparation of the health plan. This plan is part of the socio-economic plan for the country and its objective is to make medical care available to every citizen.

Government Health Expenditure

In 1964, the national budget involved a total estimated expenditure of US \$39 937 400, of which US \$2 618 415 (i.e. 6.6 per cent.) were allotted for expenditure by the Department of Health. This was equivalent to an expenditure of US \$2.5 per head on centrally financed health services, as compared with US \$1.6 per head in 1961.

MADAGASCAR

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	5 572 000	5 756 000	5 940 000	6 180 000
Number of live births . . .	193 876	230 000*	248 000*	262 000*
Birth rate (per 1000 population)	34.8	40.0	41.8	42.4
Number of deaths	70 857	85 000*	94 000*	102 000*
Death rate (per 1000 population)	12.7	14.8	15.8	16.5
Number of Infant deaths . .	13 685	20 000*
Infant mortality rate (per 1000 live births)	70.6	76.3

* Approximate figures.

In 1964, the total number of deaths was approximately 102 000. The main causes were the following: bronchitis (4583), senility without mention of psychosis, ill-defined and unknown causes (4389), diseases of the heart (801), accidents, suicide and self-inflicted injury, homicide and operations of war (706), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (684), vascular lesions affecting the central nervous system (601), measles (419), cirrhosis of the liver (353).

In 1964, the communicable diseases most frequently notified were: malaria, new cases (49 484), gonorrhoea

(40 242), syphilis, new cases (31 871), measles (28 910), dysentery, all forms (26 504), whooping-cough (16 327), leprosy (11 347), tuberculosis, all forms (6390), bilharziasis (5708), diphtheria (807), infectious hepatitis (576), typhoid and paratyphoid fevers (509).

Hospital Services

At the end of 1963, Madagascar had the following hospitals and in-patient establishments:

Category and number	Number of beds
General hospitals	11 4 649
Rural hospitals	147 6 034
Tuberculosis hospital	1 232
Maternity hospital	1 34
Paediatric hospital	1 66
Psychiatric hospital	1 650
Leprology hospitals	4 214
Medical centres	291 3 196
Hospital for the treatment of poliomyelitis	1 95
Leprosaria	3 808

These 461 hospitals and in-patient establishments provided 15 978 beds, which is equivalent to 2.7 beds per 1000 population.

Out-patient care was available in 1963 in six hospital out-patient departments, one polyclinic, 151 medical centres, 105 dispensaries, 286 nursing aid posts and 11 mobile health units. Over five million persons paid 9 797 474 visits to these 560 establishments.

Medical and Allied Personnel

At the end of 1964, Madagascar had 619 doctors, of whom 440 were in government service. The doctor/population ratio was thus one to 10 000. Other health personnel included:

Dentists	42
Pharmacists	72
Sanitary inspectors	80
Laboratory technicians	33
X-ray technicians	4
Fully qualified midwives	99
Assistant midwives	412
Fully qualified nurses	56
Assistant nurses	1 733
Health visitors	101

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	286 442
BCG	5 670
Diphtheria and tetanus	5 651
Diphtheria, tetanus, typhoid and paratyphoid fevers	571
Diphtheria, whooping-cough and tetanus	206
Yellow fever	122
Poliomyelitis	88
Cholera	10
Others	1 859

Specialized Units

In 1964, maternal and child welfare services were based on 412 centres, where 195 644 pregnant women, 501 363 children under one year of age and 710 540

children aged one to four received services. Itinerant nurses visited 37 881 families. In all, 141 738 deliveries, representing 68.8 per cent. of all births, were attended by a doctor or qualified midwife. Six school health units provided medical services to 264 124 schoolchildren, equivalent to 38.14 per cent. of the total school population. There were 56 dental health units, of which 46 were mobile units; they treated 101 285 patients. The medical rehabilitation centre received 557 new patients, and 8029 new patients made 16 564 visits to the psychiatric out-patient clinic. Madagascar has a blood bank, a Pasteur Institute and nine public health laboratories.

Environmental Sanitation

Each town on the island has a public water supply system and sewerage system. Waste and waste water disposal systems for use in villages are being investigated.

Government Health Expenditure

In 1964, the total government consumption expenditure was 29 558 million Malagasy francs, of which 2853 million (i.e. 9.7 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure on these services of 462 Malagasy francs per head. A further sum of 126.8 million Malagasy francs was spent on capital account for the improvement and expansion of health services.

MALAWI

Population and Other Statistics

In 1963 the population was estimated to be 3 753 000.

The communicable diseases most frequently notified in 1965 were: measles (19 296), syphilis, new cases (6568), whooping-cough (3982), tuberculosis, new cases (2151), typhoid and paratyphoid fevers (298), smallpox (273), infectious hepatitis (60), poliomyelitis (59).

Organization of the Public Health Services

The Minister of Health is responsible to the Parliament of Malawi for the administration of the health services; he is assisted by a parliamentary secretary. The Minister exercises control through and is advised by a permanent secretary who, if he is not a physician, is advised by the Chief Medical Officer. He is also assisted by the senior assistant secretary and the

departmental officers. The control of nursing staff is in the hands of the Chief Nursing Officer. That of health inspectors and health assistants who are concerned with preventive and social medicine is vested in the Chief Health Inspector. A senior assistant secretary is concerned with general administration and with the training of local staff to occupy senior positions. Outside the Ministry, in addition to a normal hospital and health centre administration, the central medical stores are controlled by a principal pharmacist and the public health laboratory is under the control of a director; both these officers are responsible directly to the Ministry of Health. The control of the general public health services is the responsibility of the Chief Health Inspector acting through regional health inspectors. There are 24 district councils which are local health authorities. Attached to them are health assistants seconded from government service who act as advisers to and executive officers of the Council Health Committee.

Hospital Services

In 1964, Malawi had altogether 4904 hospital beds provided in government establishments, mission hospitals and dispensaries and in establishments operated by private companies. Of this total number, 3004 beds were provided in government establishments and were distributed as follows:

Category and number	Number of beds
Central hospital	1 468
General hospitals	2 550
District hospitals	13 1 260
Rural hospitals	19 609
Rural health centres 87
Special hospitals	2 30

Medical and Allied Personnel and Training Facilities

In 1963 Malawi had 49 doctors, equivalent to one for 76 600 inhabitants. Other health personnel included:

Medical assistants	443
Dentists	4
Pharmacists	2
Auxiliary midwives	343
Fully qualified nurses	79
Sanitarians	5
Physical therapist	1
X-ray technicians	6
Other health auxiliaries	1 023

In addition to the local training of medical and health assistants, arrangements were made at the end of 1964 for the training of nurses at the central hospital. A comprehensive plan for the training of Malawians for all senior professional posts in the Ministry of Health has been prepared. Between 1963 and 1965, 18 students were sent abroad for medical training, 86 for training as nurses, and one for training as a pharmacist.

Communicable Disease Control and Immunization Services

Malaria continues to be the disease with the highest morbidity and mortality. It is followed by diseases of the respiratory system. There is still a large amount of bilharzia infection. Eye diseases cause considerable disability; they are mostly of an inflammatory nature. Ancylostomiasis is widespread. In certain areas, malnutrition is found quite frequently, especially among children. During the rainy season, many rheumatic conditions are encountered. Diseases of the digestive system and ulcers are very common. Most of the work done in controlling these diseases has been directed to their diagnosis and treatment. Preventive measures have been taken against smallpox; 709 551 persons were vaccinated during 1965. This

campaign has been carried out by mobile teams. It is hoped to recruit permanent vaccinators, each in charge of the vaccination and revaccination in a certain number of villages. In 1964, a project for the control of tuberculosis was planned and started by the University of North Carolina. It is being carried out by specially trained United States Peace Corps volunteers who work with local health assistants under the direction of a specialist in tuberculosis. In 1965 the British Leprosy Association started a leprosy control campaign in the southern part of Malawi.

Specialized Units

In 1964, maternal and child health services were based on 35 centres. Other specialized units included three dental service units, an out-patient psychiatric clinic, a leprosy clinic and a public health laboratory.

Major Public Health Problems

The most important health problems are those related to the eradication of smallpox and malaria. Public hygiene and environmental sanitation also constitute public health problems, particularly in rural areas. The protection of water supplies and the provision of adequate latrines are receiving increasing attention.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Nyasaland attained internal self-government in March 1962. In 1963 it left the Federation of Rhodesia and Nyasaland, established in 1953, and it became entirely independent in July 1964. The name of the territory was then changed to Malawi. The decade under review has been marked by an expansion of health and medical services.

National Health Planning

A five-year development plan was prepared in 1964, and included provision for the establishment of the Ministry of Health. With a view to controlling the subsequent recurrent expenditure involved, the total capital development permitted to the Ministry was £2 331 000. The general content of the plan for health was aimed at consolidation rather than expansion. More money will be devoted to the rehabilitation of existing hospitals than to the construction of new ones. Owing to the uncertainty about finding

financial provision for the plan, detailed estimates are not prepared beyond the next year. The plan was conceived in the Ministry of Health without external assistance and approved by the Minister. Its execution, however, is the joint responsibility of the Ministry of Health and the Ministry of Works under the overall supervision of the National Development Committee and the Ministry of Development. The National Development Committee co-ordinates all plans relating to social and economic development.

Population and Other Statistics

At the last census, carried out on a sample basis between June 1960 and May 1961, the population of Mali was 4 100 000. Population estimates for the period 1961-1964 are given below:

1961	4 207 000
1962	4 305 000
1963	4 394 000
1964	4 485 000

The communicable diseases most frequently notified in 1963 were: dysentery, all forms (90 937), malaria, new cases (62 736), measles (34 063), gonorrhoea (25 270), syphilis, new cases (16 030), whooping-cough (11 754), leprosy (8618), trypanosomiasis (6654), influenza (5031), trachoma (4587), tuberculosis, all forms, new cases (2338), smallpox (1096).

Organization of the Public Health Services

The responsibility for the health of the country rests with the Minister of Public Health and Social Affairs.

The Minister is assisted by a Director-General of Health, who administers the public health, hospital and technical services, and a Director of Social Affairs. The departmental organization of the ministry comprises: social affairs, professional education and training, inspection, personnel, external relations, health education, development planning and legislation.

In parallel with the health services provided by the Ministry of Public Health and Social Affairs, Mali has an extensive system of social security benefits and pensions which is administered by the National Institute of Social Insurance.

Hospital Services

In 1963, in-patient facilities were available in 46 government hospitals and medical institutions with 2903 beds—0.7 beds per 1000 population. The

Government Health Expenditure

In 1964 the total general government expenditure on current account amounted to £16 002 104, of which £935 302 (i.e. 5.8 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of £0.23 per head on these services. In Malawi over 90 per cent. of general government health expenditure is incurred at the central level and only about 3 per cent. at the local level.

MALI

64 046 in-patients admitted during the year received 925 342 days of in-patient care.

The total of 2903 beds was distributed as follows:

Category and number	Number of beds
General hospitals	8 1 791
Medical centres	30 749
Hospitals for trypanosomiasis and leprosy	6 193
Leprosarium	1 90
Ophthalmological clinic	1 80

Medical and Allied Personnel

In June 1964, 100 physicians—equivalent to one doctor per 44 800 inhabitants—were working in Mali. There were also 11 medical assistants, three dentists and 14 pharmacists. The Government employed 71 fully qualified midwives, 44 fully qualified nurses, 918 assistant nurses, 112 auxiliary nurses and one X-ray technician.

Communicable Disease Control and Immunization Services

Malaria is prevalent throughout the country. In 1963, 325 755 cases and 3075 deaths were reported, giving a specific morbidity rate of 7414 per 100 000 inhabitants and a death rate of 70.0 per 100 000. The Major Endemic Diseases Service (Service de Lutte contre les Grandes Endémies) is responsible for control activities against the major communicable diseases. The number of trypanosomiasis cases is calculated at about 500 a year. There are about 100 000 leprosy cases, which is equivalent to a morbidity rate of 2.3 per cent. The incidence of onchocerciasis is very high in certain areas of the country. About 25 out of every 1000 inhabitants suffer from tuberculosis. A BCG mass vaccination campaign was planned for 1966. In 1963 there were 34 321 cases of measles, with 442 deaths. Systematic vaccinations have been organized in the areas most affected by the disease.

Bilharziasis is also widespread in Mali, particularly in young children.

The following immunization procedures were carried out in 1962:

Smallpox	710 082
Yellow fever	215 313
Poliomyelitis	83 163
BCG	37 367
Tetanus	1 161
Diphtheria	895
Cholera	518
Typhoid and paratyphoid fevers	333

In 1963, 28 190 children were immunized against measles.

Major Public Health Problems

Malaria is the most important health problem in Mali, causing both mortality and much incapacity with loss of working time. It is followed in order by measles, gastro-enteritis, broncho-pneumonia, malnutrition, tuberculosis and trypanosomiasis, which cause a high mortality, particularly among infants and children. The incidence of accidents among children under one year is also causing concern.

National Health Planning

A national health plan has been drawn up with the assistance of a WHO consultant. This plan is divided into three periods of five years each. National health planning is the responsibility of the Ministry of Public Health and Social Affairs. It collaborates with the Planning Ministry which co-ordinates the plans for all departments. A national health planning committee has been set up in the Ministry of Public Health and Social Affairs.

International Collaboration

Within the Organization for Co-ordination and Co-operation in the Control of Major Endemic Diseases (OCCGE) Mali collaborates with other French-speaking African countries. It also receives considerable assistance from UNICEF and WHO.

Government Health Expenditure

In 1962, the total general government consumption expenditure was 14 590 million Mali francs, of which 1307 million (i.e., 9.0 per cent.) were devoted to health services. This was equivalent to an expenditure of approximately 300 Mali francs per head on these services.

MAURITANIA

Population and Other Statistics

In 1963, the African population of Mauritania was estimated at 780 000.

The communicable diseases most frequently notified in 1963 were: syphilis, new cases (40 094), malaria, new cases (35 062), gonorrhoea (6419), dysentery, all forms (4925), influenza (4351), measles (3864), leprosy (1844), whooping-cough (1833), tuberculosis, all forms, new cases (1086), infectious hepatitis (1031), trachoma (101).

Organization of the Public Health Service

The Minister of Public Health, Labour and Social Affairs who is in charge of the Health Department, is assisted by a *Directeur de cabinet*. The Directorate-General of Health, which is headed by a director and an assistant director, is composed of five divisions dealing with technical and administrative matters. For purposes of health administration the country is divided into fifteen medical districts, each in the charge of a doctor or an *agent technique de la santé*. The Major Endemic Diseases Service (Service des Grandes Endémies) which has one medical centre and four mobile teams, is responsible for the control of endemic diseases.

Hospital Services

In 1963 Mauritania had four rural hospitals with 135 beds, ten medical centres with 95 beds and nine maternity centres with 65 beds. The total bed capacity of 295 is equivalent to 0.4 beds per 1000 population.

In the same year, out-patient facilities were available at four hospital out-patient departments, one polyclinic, 16 health centres, 56 dispensaries and were also provided by five mobile health teams.

Medical and Allied Personnel

In 1964, 28 doctors were working in Mauritania. The doctor/population ratio was one to 28 000. There were also:

Dentists	2
Pharmacists	2
Fully qualified midwives	6
Veterinarians	5
Sanitary agent	1

The data for other health personnel are available only for 1963, when numbers were as follows:

Traditional birth attendants	7
Fully qualified nurses	40
Fully qualified nurses with midwifery qualifications	3
Assistant nurses	142
Auxiliary nurses	85

Immunization Services

The following immunization procedures were carried out in 1963:

Smallpox	51 843
Smallpox and yellow fever	10 722
Measles	37 962
BCG	1 770
Cholera	830
Typhoid and paratyphoid fevers, tetanus and diphtheria	607
Typhoid and paratyphoid fevers	348
Plague	160
Epidemic typhus	56

Specialized Units

Maternal and child welfare services were based in 1963 on nine centres, where 19 458 pregnant women, 9400 children under one year of age and 39 238 children aged between one and five years received services. Deliveries attended by a doctor or qualified midwife totalled 1922. Mauritania also had six dental health units.

National Health Planning

Since Mauritania became independent, two development plans have been implemented, the first being a

three-year plan covering the years 1960-1962 and the second a four-year plan for the period 1963-1966. Priority in this latter plan was given to the development of the economic infrastructure and to the production sector. The health priorities figuring in the plan were development and modernization of dispensaries and hospitals and training of paramedical personnel. Constructional work included a pharmaceutical supply centre, a national public health centre, a national maternal and child welfare centre, and a training school for nurses and midwives which was to be opened in 1965. The health plan which was prepared in the Directorate-General of Health merely met the most urgent requirements. A general planning committee attached to the President's office co-ordinated the plans of the various departments. The absence of reliable statistical data considerably impedes planning activities.

Government Health Expenditure

In 1963, the total central government expenditure on capital and current account amounted to 3974 million CFA francs, of which 275 million (i.e. 6.9 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 353 CFA francs per head on these services.

MAURITIUS AND DEPENDENCIES

Population and Other Statistics

At the last census, taken in June 1962, the population of Mauritius was 681 619. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	662 400	681 619	701 432	722 089
Number of live births	26 092	26 267	27 978	27 528
Birth rate (per 1000 population) .	39.4	38.5	39.9	38.1
Number of deaths	6 505	6 325	6 709	6 184
Death rate (per 1000 population)	9.8	9.3	9.6	8.6
Natural increase (per cent.) . .	2.96	2.92	3.03	2.95
Number of deaths, 1-4 years .	817	584	757	590
Death rate, 1-4 years (per 1000 population at risk)	9.14	6.37	8.13	6.22
Number of infant deaths	1 618	1 579	1 660	1 561
Infant mortality rate (per 1000 live births)	62.0	60.1	59.3	56.7
Number of maternal deaths . .	32	41	41	41
Maternal mortality rate (per 1000 live births)	1.23	1.56	1.47	1.49

Of the 6184 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (1268), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other

diseases peculiar to early infancy and immaturity (745), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (671), vascular lesions affecting the central nervous system (373), arteriosclerotic and degenerative heart disease (317), pneumonia (316), malignant neoplasms (273), anaemias (240), bronchitis (234), all accidents (226, including 78 in motor-vehicle accidents).

The communicable diseases most frequently notified in 1963 were: influenza (38 955), dysentery, all forms (4906), syphilis, new cases (244), infectious hepatitis (195), diphtheria (145), typhoid fever (89), gonorrhoea (66), malaria, new cases (22).

Organization of the Public Health Services

Following the enactment of the Ministry of Health Ordinance of 1962, the post of Director of Medical Services was abolished and a post of Permanent Secretary of Health was created instead. The two posts of deputy director were given the title of principal medical officer, one in charge of the curative services and the other in charge of preventive services. The Principal Assistant Secretary is the head of the Administrative Division. This division is concerned

with the formulation of policy, the handling of establishment and personnel matters, the control of expenditure and the collection of revenue, and generally for all administrative and executive matters. The Principal Medical Officer in charge of the curative services is responsible for supervising the management and operation of government hospitals and all other in-patient establishments and for the organization of examinations for nursing and midwifery students. The Principal Medical Officer in charge of preventive services is responsible for quarantine services, epidemic and endemic diseases, vital statistics, health education, nutrition, environmental sanitation, industrial health, family planning, maternal and child health services, school health services and laboratory services.

Hospital Services

At the end of 1962, Mauritius had 43 hospitals and in-patient establishments, of which 13 were government-maintained. The total bed capacity was 3097, of which 2508 were beds in government establishments. The bed/population ratio was 4.5 per 1000. The 3097 beds were distributed as follows:

Category and number	Number of beds
General hospitals	38
Tuberculosis hospital	1
Psychiatric hospital	1
Leprosarium	1
Prison hospitals	2
	2 155
	55
	780
	61
	46

Out-patient facilities were available in 1964 at 11 hospital out-patient departments, 41 dispensaries and five mobile units. A total of 539 431 new patients attended these establishments, at which altogether 1 853 042 attendances were made.

Medical and Allied Personnel and Training Facilities

At the end of 1962, Mauritius had 128 doctors, of whom 56 were in government service. The doctor/population ratio was thus one to 5400. Other health personnel employed by the Government included:

Dentists	9
Pharmacists	4
Fully qualified midwives	73
Fully qualified nurses	287
Fully qualified nurses with midwifery qualifications	286
Assistant nurses with certificate	46
Rural health nurses	10
Sanitary inspectors	61
Physical therapists	16
Laboratory technicians	43
X-ray technicians	15
Sisters of mercy	4
Health workers	3
Zone supervisors	3
Field assistants	2
Entomologists	2

To practise medicine and surgery in Mauritius, it is necessary to be the holder of either a qualification which is registrable in the United Kingdom or a state degree in medicine from any of the faculties of France. The conditions governing the practice of dentistry are similar to those applicable to doctors; the majority of the dentists have qualified in the United Kingdom. Nursing officers and midwives must be registered at the Ministry of Health before being allowed to practise. Only those trained in the United Kingdom or in Mauritius are eligible for registration.

There are no facilities available for training doctors and dentists. A school of nursing was opened in 1957. The training course for nurses lasts three years and for midwives eighteen months, one-third of the time being spent on the district midwifery service. Sanitary cadets are trained for two years on a syllabus similar to that of the Overseas Health Inspectors' Certificate.

Immunization Services

The following immunization procedures were carried out in 1962:

Smallpox	155 137
BCG	20 557
Yellow fever	3 157
Cholera	488

Specialized Units

In 1964, 40 centres were engaged in maternity and child care. They were attended by 61 381 pregnant women, 14 167 infants under one year and 15 887 children aged from one to five years. Domiciliary visits were paid to 2314 pregnant women. Of all deliveries, 16 529 (60 per cent.) were attended by a doctor or qualified midwife. Mauritius had one school health unit which looked after 128 476 schoolchildren, e.g., 81.2 per cent. of the total school population. Eight dental health units treated 91 862 patients. The three psychiatric out-patient clinics registered 1670 new patients during 1964. Other specialized units included a tuberculosis dispensary and a leprosy dispensary. The public health laboratory carried out 250 850 examinations.

Environmental Sanitation

Of Mauritius' total population in 1964, 622 575 inhabitants had piped water to their dwellings, some 97 200 had water from public fountains and 2300 from other sources. With regard to sewage collection and disposal, 101 450 inhabitants were served by sewerage systems, some 28 900 had sewage treatment facilities and 450 000 had individual installations, either septic tanks or latrines.

Major Public Health Problems

The main public health problems in Mauritius are: under-nutrition, anaemias, ancylostomiasis, ascariasis, bilharziasis and tuberculosis. Over-population also gives rise to considerable concern.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The most important developments during the ten-year period have been the various housing projects sponsored by the Sugar Industry Labour Welfare Fund Committee in aid of sugar industry workers, the Central Housing Authority in respect of the victims of the cyclones of 1960 and the town councils and the Municipality of Port Louis for local residents. The

water supply has been extended following the provision of additional piped water supplies by the Government.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure amounted to 181 million rupees of which 18.8 million rupees (i.e. 10.4 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 26.4 rupees per head on these services as compared with 22.6 rupees per head in 1959/60. A further sum of 633 156 rupees was spent on capital account for the improvement and expansion of health facilities; about 25 per cent. of this expenditure was directly incurred on projects included in long-term plans for the development of health services.

MOZAMBIQUE

Population and Other Statistics

At the last census, taken in September 1960, the population of Mozambique was 6 578 604. Population estimates for the period 1961-1964 are given below:

1961	6 620 589
1962	6 704 558
1963	6 788 527
1964	6 872 496

The communicable diseases most frequently notified in 1963 were: malaria, all cases (74 893), influenza (72 988), gonorrhoea (20 838), dysentery, all forms (16 765), syphilis, new cases (8400), tuberculosis, all cases (6025), whooping-cough (5347), leprosy, new cases (2953), measles (2697), infectious hepatitis (1070), typhoid and paratyphoid fevers (261), smallpox (102).

Organization of the Public Health Services

The Governor-General, assisted by the Provincial Secretary, is responsible for the administration and supervision of the health and welfare services, which are provided by government departments and religious missions. In 1964, the health and welfare services of Mozambique were reorganized. They comprise the following departments: medical, administrative, public health, pharmaceutical services, welfare. As part of the central administration there are a number of specialized services concerned with the control of endemic diseases, e.g. tuberculosis, leprosy, trypanosomiasis. There are also services for maternal and child health and nutrition. For purposes of health

administration the Province is divided into health regions, health areas and health districts. Each health region is in the charge of a medical inspector, who is assisted by advisory bodies and health boards. The district health services are in the charge of medical officers who are under the direct supervision of the chief medical officer of the health area of which they are part.

Hospital Services

At the end of 1964, Mozambique had 395 public hospitals and establishments for in-patient care, providing 10 455 beds (not including those in 37 private maternity clinics). The bed/population ratio was 1.5 per 1000. During 1964, 89 285 admissions were recorded in government hospitals, other than the medical centres. The 10 455 beds were distributed as follows:

Category and number	Number of beds
General hospitals	39
Rural hospitals	83
Medical centres (without doctor) . . .	29
Maternity clinics (government) . . .	189
Maternity clinics (private)	37
Psychiatric hospitals	2
Trypanosomiasis clinics.	9
Leprosaria	7
	1 722
	75
	1 000

Out-patient care was available in 1964 in 82 hospital out-patient departments, 82 health centres, three dispensaries, 398 medical aid posts, three mobile health units and 15 X-ray units. During the year, 3 244 894 new out-patients attended these establishments.

Medical and Allied Personnel

In 1964, Mozambique had 382 doctors, of whom 223 were in government service and 159 in private practice. The doctor/population ratio was one to 18 000. Other health personnel included:

Dentists	29
Pharmacists	173
Pharmaceutical assistants	227
Fully qualified midwives	7
Auxiliary midwives	185
Fully qualified nurses	394
Fully qualified nurses with midwifery qualifications	48
Assistant nurses	668
Veterinarians	45
Laboratory technicians	34
X-ray technicians	12
Other health personnel	140

Communicable Disease Control and Immunization Services

Bilharziasis continues to be an important health problem as new irrigation schemes provide new sources of infestation. More than one million bilharziasis patients were treated in out-patient clinics in 1963. There was a slight decrease in the incidence of syphilis, mainly due to treatment with antibiotics, but the incidence of gonorrhoea has increased. In 1955, 18 238 cases of syphilis and 15 462 cases of gonorrhoea were recorded in out-patient clinics, as compared with 8211 and 20 664 respectively in 1963. Smallpox vaccination in Mozambique has been compulsory since 1920 and is systematically carried out. Smallpox vaccines have been produced in Mozambique since 1943, and nearly five million doses were manufactured in 1964. It is estimated that at present about 80 per cent. of the total population is protected against smallpox. Diarrhoeal infections are the main causes of infant mortality, which is very high in the Province. A malaria pre-eradication programme, planned in collaboration with WHO, was started in 1961 in a pilot zone south of the Save River which has a population of 1.5 million. It is expected to convert this project into an eradication programme covering the whole territory. The incidence of yaws is particularly high in the coastal districts. A yaws control campaign was initiated in 1959 in the districts of Zambezia, Nampula and Cabo Delgado. Mobile control teams were organized. In the first phase of the campaign over 2.6 million persons in these districts were given penicillin injections. Before 1952, the number of yaws cases diagnosed in health establishments varied between 50 000 and 60 000 a year which represented between 5 and 8 per cent. of cases of all diseases treated. This percentage dropped to 0.7 per cent. in 1964, when 9315 cases were diagnosed. An

epidemic of infectious hepatitis occurred in 1964 with 1916 cases, 1468 of them in Lourenço Marques.

The tuberculosis control service has the overall responsibility for the organization of the control programme, of which the main features are tuberculin testing, mass radiography of certain population groups (school population, civil servants, workers who live in overcrowded urban centres, etc.) and BCG vaccination. In 1964 there were 1933 new cases of tuberculosis, compared with 1379 in 1961. To ensure greater efficiency in the control activities, the Province has been divided into three zones with centres in Lourenço Marques, Beira and Nampula. Each centre has a principal dispensary, a sanatorium, a mobile vaccination team and a network of secondary dispensaries. Leprosy is endemic throughout the Province. A control service was established in 1950. For this purpose the Province was divided into four zones, each with a regional leprosy dispensary which administers mobile teams engaged in case-finding and surveillance activities. In 1964, 69 924 leprosy patients received ambulatory treatment and 2463 were hospitalized. Trypanosomiasis is also found in the Province and tsetse control programmes have been organized.

The following immunization procedures were carried out in 1964:

Smallpox	1 056 726
BCG	22 066
Poliomyelitis (Salk vaccine)	12 231
Yellow fever	7 397
Whooping-cough	1 442
Diphtheria	1 125
Cholera	1 020
Typhoid and paratyphoid fevers, tetanus and cholera	953
Whooping-cough and tetanus	307
Tetanus	219
Diphtheria, whooping-cough and tetanus	212

Specialized Units

In 1964, 187 pre-natal centres and 187 child welfare centres were engaged in maternity and child care. They were attended by 23 641 pregnant women and 49 730 children. Domiciliary visits were paid to 757 pregnant women and 5036 children. There were 67 226 schoolchildren (25 per cent. of the total school population) under health supervision at 458 school health centres. In 1963, 63 915 patients were treated at 82 dental health units; 3221 out-patients attended the nine hospital rehabilitation departments; and 3027 new out-patients attended 22 702 psychiatric out-patient consultations given in general hospitals and psychiatric clinics. Other specialized out-patient facilities included 82 leprosy clinics, nine trypanosomiasis clinics and four tuberculosis dispensaries. The 84 public health laboratories carried out 447 416 examinations.

Major Public Health Problems

The main public health problems are those which arise from the incidence of the communicable diseases.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review was marked by the intensive development of educational facilities. The number of lycées and public primary schools was doubled and the number of technical schools was trebled. This provision is in addition to the large number of private and mission educational establishments. In the field of health, control services in respect of several of the main communicable diseases were set up and control programmes started. In 1962 a rural labour code was promulgated. The health and public welfare services of the overseas provinces of Portugal were reorganized in 1964 and new regulations were issued regarding the

technical schools of the public health and welfare services.

Medical and Public Health Research

The Medical Research Institute of Mozambique was established in 1955 under the auspices of the Institute of Tropical Medicine in Lisbon. Considerable research has been carried out on malaria, bilharziasis, ancylostomiasis, infectious hepatitis and the anaemias.

Government Health Expenditure

In 1963 the total current health expenditure by public and general government health agencies amounted to 215.2 million escudos, of which 177.8 million escudos was incurred by the central government departments. This was equivalent to an expenditure of 31.7 escudos per head on these services. A further sum of 24.1 million escudos was spent on capital account for the expansion and improvement of health facilities.

NIGER

Population and Other Statistics

Population estimates for the period 1961-1964 are given below:

1961	2 906 000
1962	2 995 000
1963	3 117 000
1964	3 250 000

During this period the birth rate is estimated to have averaged 50 per 1000, the death rate 25 per 1000 and the natural increase 2.5 per cent. Infant mortality is estimated to have averaged 200 per 1000 live births.

The communicable diseases most frequently notified in 1964 were: malaria, new cases (93 480), measles (14 502), amoebic dysentery (5052), meningococcal infections (2884), whooping-cough (2844), influenza (325), bacillary dysentery (79), smallpox (30).

Organization of the Public Health Services

After the country became independent in 1960, a Ministry of Health was created and a Director of Health was put in charge of the administrative aspects of this department. He is assisted by a deputy director. The Directorate of Health comprises the Major Endemic Diseases Services (Service des Grandes Endémies), established in 1962, and divisions responsible for nutrition, the hospitals of Niamey and Zinder, hygiene, school health, maternal and child health,

and medical districts. The Directorate of Social Affairs controls the social welfare centres.

Hospital Services

In 1964, the 128 hospitals and establishments for in-patient care had a total bed capacity of 1740—equivalent to 0.5 beds per 1000 population—distributed as follows:

Category and number	Number of beds
General hospitals	2 780
Medical centres (without doctor) . . . 104	660
Maternity clinics	22 300

Medical and Allied Personnel and Training Facilities

At the end of 1964, Niger had 49 physicians working in government service. The doctor/population ratio was thus one to 66 325. Other health personnel included:

Dentists	3
Pharmacists	3
Pharmaceutical assistant	1
Fully qualified midwives	15
Assistant midwives	8
Fully qualified nurses	23
Assistant nurses	381
Auxiliary nurses	121
Laboratory technician	1
X-ray technician	1
Other health personnel	58
Welfare officers (assistantes sociales)	3
Auxiliary welfare workers (aides et auxiliaires sociales)	11

The training school for nurses, which was set up in 1958, is being reorganized. Medical personnel are trained in Dakar and Abidjan, and also in Europe, mainly in France. This also applies to the training of midwives.

Communicable Disease Control and Immunization Services

At the end of 1964 malaria control activities were limited to spraying operations in Niamey. It was proposed to start a pre-eradication project with the assistance of WHO. There were 20 000 known leprosy cases in Niger in 1964. Cerebrospinal meningitis is epidemic during the dry season, with peaks every four years. During the last epidemic outbreak, which occurred in 1962, 15 365 cases were reported. A control programme using sulfamethoxy-pyridazine has been organized. Following a tuberculosis survey, a control project was initiated at the end of 1964 with the establishment of a pilot zone to determine the prevalence of the disease, and to organize control activities, particularly BCG vaccination. Measles is one of the main causes of infant mortality;

20 000 children were immunized in 1963 and 150 000 in 1964 with vaccine provided by the United States Agency for International Development. Venereal diseases are a serious health problem throughout the country. Only a small proportion of the cases are treated.

The following immunization procedures were carried out in 1964:

Poliomyelitis (Sabin vaccine)	858 652
Smallpox (simple and combined with yellow fever)	586 703
Measles	150 000
Yellow fever (combined)	70 381
BCG	58 870
Cholera	324
Typhoid and paratyphoid fevers, diphtheria and tetanus	248

Specialized Units

In 1964, maternal and child health services were based on 22 pre-natal and 22 child health centres, which were attended by 75 260 pregnant women, 601 933 infants under one year of age and 428 620 children aged between one and five years. A total of 20 540 deliveries (13 per cent. of all deliveries) were attended by a doctor or qualified midwife. Two dental health units treated 20 000 patients.

NIGERIA

Population and Other Statistics

At the last census, taken in November 1963, the population of Nigeria was around 55 670 000. It was distributed as follows:

Northern Region	29 759 000
Eastern Region	12 394 000
Western Region	10 266 000
Mid-West Region	2 536 000
Federal Territory of Lagos	665 000

Mid-year population estimates for the whole country for the period 1961-1964 are given below:

1961	54 000 000
1962	54 900 000
1963	55 500 000
1964	56 400 000

The following table gives vital statistics for the year 1963 only for the Lagos Federal Territory, where registration of births and deaths is compulsory by law.

	1963
Mean population	647 000
Number of live births	27 486
Birth rate (per 1000 population)	42.4
Number of deaths	5 540
Death rate (per 1000 population)	8.6
Natural increase (per cent.)	3.38
Number of deaths, 1-4 years	1 559
Number of infant deaths	1 863
Infant mortality rate (per 1000 live births)	67.8
Number of maternal deaths	78
Maternal mortality rate (per 1000 live births)	2.8

The following were the main causes of death in the Lagos Federal Territory in 1963: pneumonia; senility without mention of psychosis, ill-defined and unknown causes; cirrhosis of the liver; diseases peculiar to early infancy and immaturity.

The communicable diseases most frequently reported in 1964 in the whole country were: measles (82 300), whooping-cough (19 368), yaws, new cases (3535), meningococcal infections (2525), infectious hepatitis (1713), smallpox (1454), typhoid and paratyphoid fevers (1167), poliomyelitis (465).

Organization of the Public Health Services

Each of the four regions is self-governing in matters of health, education and social services. The Federal Ministry of Health is responsible for health services in the Federal Territory of Lagos and for all matters relating to international health which concern the country as a whole, including epidemiological reporting, sanitary control at ports and airports and relationship with international agencies. Co-ordination of the health activities of all regions at national level is achieved through the National Council of Health, which comprises all the ministers of health of the Federation. The Federal Minister of Health is the Chairman of this council. It has specialized technical advisory committees, as for example the smallpox

eradication committee, the malaria and the nutrition committees.

The regional ministries of health are responsible for the health services in the regions, and have an administrative division of hospital or curative services and a division of preventive health services. The Federal Ministry of Health has, in addition, a division for chemical investigations and a statistics unit. Each regional ministry of health has provincial and divisional health units.

Hospital Services

In 1962, Nigeria had 970 hospitals and establishments for in-patient care providing 20 884 beds (equivalent to a bed/population ratio of 0.4 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	206
Rural hospitals	596
Medical centres (without doctor)	77
Tuberculosis hospitals	4
Infectious diseases hospitals	15
Maternity hospitals	21
Paediatric hospital	1
Psychiatric hospitals	4
Eye hospital	1
Orthopaedic hospitals	2
Leprosaria	42
Old people's home	1
	44
General hospitals	14 873
Rural hospitals	1 646
Medical centres (without doctor)	181
Tuberculosis hospitals	216
Infectious diseases hospitals	457
Maternity hospitals	855
Paediatric hospital	85
Psychiatric hospitals	933
Eye hospital	100
Orthopaedic hospitals	283
Leprosaria	1 211
Old people's home	44

Out-patient facilities were provided in 1964 at 140 hospital out-patient departments, 23 polyclinics, 94 health centres, 1084 dispensaries, 26 medical aid posts and 15 mobile health units.

Medical and Allied Personnel and Training Facilities

In 1963, 1508 doctors were registered in Nigeria, of whom 1108 were in active practice. This is equivalent to a doctor/population ratio of one to approximately 37 000. Other health personnel included:

Dentists	59
Pharmacists	454
Fully qualified midwives	7 763
Assistant midwives	1 273
Fully qualified nurses	7 894
Assistant nurses	1 357
Veterinarians	59

Nigeria has two medical schools—one in Ibadan and one in Lagos. In 1963 they had a combined intake of 80 students. It is planned to increase this number to between 200 and 300 a year by 1968. In 1963 there were also 39 nursing schools, 70 midwifery schools, four schools for the training of public health inspectors, a school of pharmacy and a university department of pharmacy, four schools for the training of dispensary

assistants and attendants, a school and two university departments for laboratory technology, a school of dental technology and a school of dental hygiene.

Communicable Disease Control and Immunization Services

Among the quarantinable diseases smallpox is a major problem in Nigeria. The disease is endemic in all areas, although the Eastern Region and the Federal Territory of Lagos are less affected than others. The notification rate is highest in the Northern Region. During the past eight years annual smallpox vaccination campaigns have been carried out in Lagos. Plans are under way for a comprehensive smallpox eradication programme covering the whole country. Cerebrospinal meningitis is endemic in the Northern Region, where epidemics break out in the dry season between January and April. Mass sulfonamide treatment of cases and contacts is the control measure used in addition to improvements in housing and the elimination of overcrowding. Measles appears in epidemic form. All areas are severely affected and the peak is in the dry season immediately before the onset of the rains. Vaccines, though very expensive, are being tried out in some centres and results so far obtained are encouraging. Tuberculosis is becoming increasingly important. The number of cases increased from 9874 in 1959 to 13 619 in 1964. Each region has an organized tuberculosis service for case-finding, treatment and BCG vaccination, especially of infants. Tetanus, whooping-cough, diphtheria, poliomyelitis, leprosy, infectious hepatitis, yaws and malaria are also important. There was an outbreak of poliomyelitis in Ibadan in 1963. This was dealt with by a mass immunization programme for infants and children under five years, using oral vaccine. Intestinal helminthiasis is now so common as to rank among the major communicable diseases.

The following immunization procedures were carried out in 1963:

Smallpox	254 719
BCG	28 344
Diphtheria, whooping-cough, tetanus	20 751
Yellow fever	6 774
Cholera	896
Typhoid and paratyphoid fevers	747
Epidemic typhus	628
Poliomyelitis (Salk vaccine)	461

Specialized Units

Because of the difficulty of obtaining comprehensive statistical data on maternal and child health for the whole of Nigeria, the data given are based on the combined experience of Lagos and the Eastern Region.

In these areas, in 1964, there were 517 pre-natal and 512 child health centres, attended by 711 667 pregnant women and 118 382 children. A total of 114 393 deliveries were attended by a doctor or qualified mid-wife. There were also seven school health units, 12 dental health units, 22 independent medical rehabilitation centres and two hospital rehabilitation departments, four psychiatric out-patient clinics and 35 public health laboratories.

Major Public Health Problems

The most important health problems in Nigeria are related to the control of endemic diseases, the provision of a healthy environment, rural water supply and sewage disposal. There is also the question of the nutritional state of the population. Smallpox, malaria, cerebrospinal meningitis, sleeping sickness and measles are diseases of major importance. The infant mortality is high. Serious problems are caused by the lack of adequate medical facilities in the country, particularly in rural areas. Folk medicine continues to play an important role, especially since modern facilities are available only to a small proportion of the population.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Political advance was the most outstanding development of the last decade. In addition to the existing four governments of the Federation (Northern, Eastern, Western and the Federal Territory), the Mid-West Region was created in 1963. The economy of Nigeria is expanding rapidly. A six-year development plan for the years 1962-1968 was prepared. Under

this plan the Federal Government intends to spend a total of £10.3 million on health services. Among the important health projects envisaged in the plan is the provision of urban water supplies. A total of £1.8 million is allotted to urban water supply in the Lagos area. Emphasis is laid on the training of doctors, nurses and midwives by all governments of the Federation. Other developments included in the plan are the planning of the Lagos metropolitan area, housing facilities to cope with the increase in population in the Federal Territory, and the provision of cheap transport facilities. Provision is also made for the establishment of a new medical school in Lagos.

Medical and Public Health Research

Medical research is carried out in the research departments of the two medical schools at Ibadan and Lagos, in special units of the Federal Ministry of Health and in special research institutes such as the Medical Research Institute at Yaba, Lagos, which is specializing in virology, the Institute of Trypanosomiasis Research at Kaduna, the Leprosy Research Institute at Uzuakoli and the Child Health Institute at Ibadan University. These institutions are all government establishments and are financed by the Federal Government, though grants for specific fields of research have been given by foundations.

International Collaboration

Nigeria has received assistance in the field of health from UNICEF and WHO; the country has taken an active part in the work of the health commission of the Organization of African Unity.

PORtUGUESE GUINEA

Population and Other Statistics

At the last census, taken in December 1960, the population of Portuguese Guinea was 521 336. Population estimates for the period under review are:

1961	521 864
1962	522 920
1963	523 976
1964	525 000

In 1961, the birth and death rates were respectively 18.3 and 10.6 per 1000 population. The natural increase was 0.77 per cent.

The communicable diseases most frequently notified in 1963 were: malaria, all cases (69 665), gonorrhoea (4386), measles (4116), influenza (2254), dysentery, all

forms (1169), leprosy (868), whooping-cough (735), tuberculosis, all forms, all cases (642), syphilis, all cases (459), trachoma (435), trypanosomiasis (268).

Organization of the Public Health Services

Following the decree of 23 January 1964, which dealt with the reorganization of the overseas provincial health services, these services now include the social welfare services and are described as the "provincial department of health and welfare services". They comprise three divisions: technical, administrative and welfare. The Province is divided into ten health districts.

Hospital Services

At the end of 1963, Portuguese Guinea had 31 hospitals and establishments for in-patient treatment, to which 11 645 patients were admitted during the year. The total number of beds was 839—1.6 beds per 1000 population—distributed as follows:

Category and number	Number of beds
General hospital	1 320
Rural hospitals	2 223
Medical centres	25 218
Maternity hospitals	3 78

Out-patient facilities were available at three hospital out-patient departments, six health centres, ten health units, 51 medical aid posts and four first-aid posts.

Medical and Allied Personnel and Training Facilities

In 1963, 34 doctors were working in Portuguese Guinea. The doctor/population ratio was one to 15 400. Other health personnel included:

Dentist	1
Pharmacists	6
Pharmaceutical aides	11
Fully qualified nurses	35
Fully qualified nurse with midwifery qualifications	1
Auxiliary midwives	41
Auxiliary nurses	95
Visiting nurses	2
Paediatric nurse (puericulture)	1
Laboratory technicians	3
X-ray technicians	3
Dental mechanic	1
Welfare workers	2

The training school in Bissau offers courses for nurses, auxiliary nurses and midwives. In 1962, 25 auxiliary midwives, 22 auxiliary nurses and six nurses qualified at this school.

Communicable Diseases Control and Immunization Services

Malaria is still a serious problem in the Province. Free distribution of antimalarial drugs was continued during the period under review. In 1963, 612 225 tablets were distributed to approximately 10 000 persons. Also in 1963, 6687 cases of ancylostomiasis were treated. Eradication of this disease will be possible only through improved sanitary conditions, especially in rural areas. The permanent team for the survey and control of trypanosomiasis and other endemic diseases continued its examination of the population.

The following immunization procedures were carried out in 1963:

BCG	155 246
Smallpox	25 261
Yellow fever	832
Diphtheria, whooping-cough and tetanus	23

Specialized Units

In 1964, maternal and child welfare services were based on 24 maternity centres and one child health centre, attended by 2774 children under one year and 11 905 children aged between one and five years. There were 2740 deliveries attended by a doctor or qualified midwife. The dental health unit treated 6523 patients. Fifteen new out-patients attended the clinic for psychiatric disorders, where altogether 191 consultations were given. There were also two public health laboratories where 41 350 examinations were carried out during the year.

Major Public Health Problems

The most important public health problems in Portuguese Guinea are malaria, tuberculosis, leprosy, trypanosomiasis and intestinal parasitosis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

One of the most significant developments of recent years has been the migration of the indigenous population towards urban centres. Progress has been made in increasing the number of health facilities and health personnel and in controlling leprosy, tuberculosis and trachoma. The equipment of in-patient and out-patient establishments and transport facilities have also been improved. The reorganization of the overseas health and welfare services has given a greater autonomy to certain of the executive health departments and contributed to the improvement of the preventive health services. In 1964 a general regulation regarding the functions of the technical schools of the health and welfare services of the overseas provinces was issued. This should facilitate the provision of training facilities.

Government Health Expenditure

The government budget for 1964 involved an estimated expenditure of 21 349 748 escudos for the provision of health services. This was equivalent to an expenditure of 41 escudos per head on these services. Included in the total given above was a sum of 5 480 000 escudos for the campaign against trypanosomiasis and a further sum of 1 525 000 escudos, of which 800 000 escudos were donated by the Gulbenkian Foundation, for the antituberculosis campaign.

RÉUNION

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	347 000	358 000	370 000	382 000
Number of live births *	15 205	15 937	16 482	16 560
Birth rate (per 1000 population) . . .	43.8	44.2	44.5	43.4
Number of deaths *	4 001	4 121	4 058	3 789
Death rate (per 1000 population) . . .	11.5	11.5	11.0	9.9
Natural increase (per cent.)	3.23	3.31	3.35	3.35
Number of infant deaths *	1 344	1 345	1 158	1 229
Infant mortality rate (per 1000 live births)	88.4	84.4	70.3	74.2

* Excluding liveborn infants who died before registration of birth.

The communicable diseases most frequently notified in 1963 were: dysentery, all forms (67), typhoid and paratyphoid fevers (40), whooping-cough (37), diphtheria (23).

Hospital Services

In 1964 the island of Réunion had 14 hospitals and establishments for in-patient care providing 2295 beds—equivalent to 6.0 beds per 1000 population—distributed as follows:

Category and number	Number of beds
General hospitals	3 785
Rural hospitals	3 203
Tuberculosis hospital	1 214
Maternity hospitals	3 67
Psychiatric hospital	1 403
Leprosarium	1 53
Old people's homes	2 570

Medical and Allied Personnel

In 1964, 126 doctors were working on the island, 33 in government service and 93 in private practice. The doctor/population ratio was one to 3000. Other health personnel included:

Dentists	32
Pharmacists	60
Fully qualified midwives	72
Fully qualified nurses	306
Sanitary Inspector	1

Communicable Disease Control and Immunization Services

Tuberculosis case-finding and rehabilitation of cured tuberculosis patients are still problems in Réunion. The prevalence of syphilis is increasing. There are frequent cases of amoebic dysentery and typhoid fever which are related to the lack of adequate water supply and to deficient food hygiene. Intestinal parasitism is widespread; it is mainly due to the housing conditions and to insufficient health education of the inhabitants.

The following immunization procedures were carried out in 1964:

Poliomyelitis (Salk vaccine)	45 542
Smallpox	34 305
Whooping-cough	26 588
BCG	9 502
Diphtheria, tetanus, typhoid and paratyphoid fevers	319
Cholera	163

Chronic and Degenerative Diseases

Chronic and degenerative diseases cause 30 per cent. of the total mortality. Hypertension is a frequent cause of death. The incidence of albuminuria is exceptionally high, and nephritis and nephrosis are common. Of all men hospitalized for mental disorders in 1964, 44 per cent. were alcohol addicts. Alcoholism is also frequent among women.

Major Public Health Problems

Environmental health is the island's most important health problem. Personal hygiene, nutrition and housing are closely related to the economic level of the population. Water supply, particularly in rural areas, is also a problem. Great efforts have still to be made in health education of the population.

RWANDA

The communicable diseases most frequently reported in 1964 were: influenza (13 840), whooping-cough (13 792), measles (13 731), bacillary dysentery (760), typhoid and paratyphoid fevers (357), relapsing fever (225), infectious hepatitis (223), meningococcal infections (94), poliomyelitis (16).

Population and Other Statistics

At the last census, taken in June and July 1952, the African population of Rwanda was 2 143 978. In 1964, the estimated population was 3 018 000.

Hospital Services

In 1964, Rwanda had 82 hospitals providing 3935 beds and one sanatorium with 181 beds. The bed/population ratio was 1.3 per 1000.

Out-patient facilities were available at 20 hospital out-patient departments, 20 polyclinics, ten health centres and 84 dispensaries.

Medical and Allied Personnel

In 1964 Rwanda had 31 doctors, which is equivalent to a doctor/population ratio of one to 97 000. Other health personnel included:

Medical assistants	42
Dentist	1
Pharmacists	3

Nurse/midwives	41
Auxiliary midwives	6
Midwifery aides	81
Nurses	36
Male nurses	82
Auxiliary nurses	10
Nursing aides (female)	6
Nursing aides (male)	188
Sanitary inspectors	3
Other auxiliary personnel	124

Specialized Units

In 1964, maternal and child health care was based on 84 pre-natal care units and child health centres; 237 943 pregnant women attended the former and 578 246 children the latter specialized units. The independently maintained rehabilitation centre was attended by 243 new out-patients.

SÃO TOMÉ AND PRÍNCIPE

Population and Other Statistics

At the last census, taken on 15 December 1960, the population of São Tomé and Príncipe was 64 406. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	61 933	58 946	57 358	59 165
Number of live births	2 998	2 990	2 922	3 160
Birth rate (per 1000 population) . . .	48.4	50.7	50.9	53.4
Number of deaths	1 269	1 091	1 065	993
Death rate (per 1000 population) . . .	20.5	18.5	18.6	16.8
Natural increase (per cent.)	2.79	3.22	3.23	3.66
Number of infant deaths	382	310	290	291
Infant mortality rate (per 1000 live births)	127.4	103.7	96.9	92.1
Number of maternal deaths	1	5	4	10
Maternal mortality rate (per 1000 live births)	0.33	1.7	1.0	3.16

Of the 993 deaths recorded in 1964 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (401), malaria (62), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (61), congenital malformations, infections of the newborn and other diseases peculiar to early infancy and immaturity (46), anaemias (41), avitaminoses and other deficiency states (37), tuberculosis, all forms (35), pneumonia (30), accidents (26), malignant neoplasms (24).

The communicable diseases most frequently notified in 1963 were: malaria, new cases (7935), influenza (1132); dysentery, all forms (492), whooping-cough (328), infectious hepatitis (308), gonorrhoea (302), measles (275), tuberculosis, all forms, new cases (148), syphilis, new cases (50), typhoid and paratyphoid fevers (37).

Hospital Services

In 1964, São Tomé and Príncipe had three general hospitals with 376 beds (including one private hospital with ten beds), 36 rural hospitals with 1698 beds and two maternity clinics with 19 beds. The total number of 2093 beds was equivalent to 35.3 beds per 1000 population. During the year 14 731 patients were admitted to the government hospitals.

Out-patient medical care was given at two hospital out-patient departments, one government and 51 private health centres and nine medical aid posts. During 1964, 66 811 attendances were recorded at these establishments.

Medical and Allied Personnel

In 1964, 18 doctors, including 14 in government service, were working in São Tomé and Príncipe. The doctor/population ratio was one to 3300. Other health personnel included:

Dentist	1
Pharmacists	4
Auxiliary pharmacists	4
Pharmaceutical assistants	4
Fully qualified midwives	4
Assistant midwives	4
Fully qualified nurses	8
Fully qualified nurse with midwifery qualifications	1
Assistant nurses	76
Veterinarian	1
Physical therapist	1
Laboratory technicians	2
X-ray technician	1
Dental mechanic	1
Health visitor	1

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	4 076
BCG	3 071
Yellow fever	1 159
Diphtheria, whooping-cough and tetanus	817
Tetanus	36

Specialized Units

In 1964, four maternal and child health centres gave services to 872 pregnant women, 561 children under

one year of age and 132 children aged from one to four years. A total of 1646 deliveries (52.1 per cent. of all deliveries) were attended by a doctor or qualified midwife. The whole school population of 6253 children was under medical supervision at 11 school health centres. The dental health clinic treated 1048 patients. There were also a tuberculosis dispensary and a leprosy unit.

SEYCHELLES

Population and Other Statistics

At the last census, taken in 1960, the Seychelles had a population of 41 425. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	42 936	43 748	45 089	46 472
Number of live births	1 775	1 733	1 855	1 867
Birth rate (per 1000 population)	41.3	39.6	41.1	40.2
Number of deaths	574	505	513	482
Death rate (per 1000 population)	13.4	11.5	11.4	10.4
Natural increase (per cent.)	2.79	2.81	2.97	2.98
Number of infant deaths	101	71	116	82
Infant mortality rate (per 1000 live births)	56.9	41.0	62.5	43.9
Number of maternal deaths *	2	0	3	2
Maternal mortality rate (per 1000 live births)	1.1	0	1.6	1.1

* The maternal deaths are those recorded at the general hospital.

Of the 482 deaths recorded in 1964 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (110), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (50), chronic rheumatic heart diseases, arteriosclerotic and degenerative heart disease, and other diseases of the heart (45), pneumonia (45), malignant neoplasms (37), vascular lesions affecting the central nervous system (27), avitaminoses and other deficiency states (20), tuberculosis, all forms (19).

Organization of the Public Health Services

The Medical Department is primarily responsible for the initiation and direction of medical and public health activities in the Seychelles. The Department is controlled by the Director of Medical Services, who is responsible to the Development Secretary. The latter represents the Department on the Executive and Legislative Council. The Director of Medical Services is also the superintendent of the general hospital and is responsible for the Medical Officer of Health, who has under his charge the Chief Public Health Inspector

and the Senior Public Health Sister. The Senior Mental Attendant, the Attendant of the leprosarium and the Senior Executive Officer, who is in charge of financial matters, are also under the Director of Medical Services.

Hospital Services

At the end of 1964, there were the following hospitals and in-patient establishments:

Category and number	Number of beds
General government hospital	1 155
Rural hospitals	3 53
Medical centres	2 4
Tuberculosis hospital	1 92
Psychiatric hospital	1 60
Leprosarium	1 22
Old people's home	1 89

The total bed capacity was thus 475, which is equivalent to 10.2 per 1000 population. In 1964, 10 447 patients were admitted to these establishments.

In 1963, out-patient medical care was provided at four hospital out-patient departments, four health centres and two dispensaries.

Medical and Allied Personnel

In 1964, 14 doctors were working in the Seychelles, of whom two were in private practice. The doctor/population ratio was thus one to 3300. Other health personnel included:

Dentists	2
Pharmacists	1
Fully qualified nurses	4
Fully qualified nurses with midwifery qualifications	32
Assistant midwives	10
Sanitary Inspectors	8
Laboratory technician	1
X-ray technician	1

Communicable Disease Control and Immunization Services

There is no malaria, bilharziasis, trachoma or filariasis in the Seychelles. At the end of 1964, there

were 765 notified tuberculosis cases, of which 600 were receiving treatment. The tuberculosis morbidity rate is at present 2.2 per 1000 population. A tuberculosis control programme started in 1961/62 with a mass radiography survey, following which a sanatorium was built and completed in 1964. Funds were also provided to run a domiciliary service. BCG vaccination started in 1956, but it was not until 1963 that a definite plan was put into operation. By the end of 1964 all newborn babies on the island of Mahé were given BCG. New legislation became effective in 1964, giving the Medical Officer of Health power to compel patients and suspected cases to stay in hospital or to be X-rayed. Funds were also provided for dependant's allowances for patients. The minimum wage is paid to all cases admitted to the sanatorium.

In 1964, ten years after the completion of the venereal disease control campaign, syphilis and gonorrhoea have again become a national problem. During the year, 1883 cases of gonorrhoea were treated in clinics. No case of smallpox has been notified for the past 70 years. Outbreaks of poliomyelitis have not occurred in the Seychelles, but the results of sample blood tests show that poliomyelitis virus is definitely present. It is expected that in later years, when environmental sanitation and water supplies have improved, changing the immunity status of the population, this disease will probably become a problem.

The following immunization procedures were carried out in 1963:

Smallpox	11 835
Diphtheria, whooping-cough and tetanus	3 305
BCG	2 373
Yellow fever	645
Cholera	553

Specialized Units

In 1963, maternal and child health services were provided at 13 centres, where 1641 pregnant women attended. There were 25 775 pre-school children under medical supervision in 1964. All deliveries were attended by a doctor or qualified midwife. Since 1960, pre-natal care has been intensified. Attendance at the maternal health centres increased from 40 per cent. of all pregnant women in 1952 to 88 per cent. in 1964. Two dental health units gave treatment to 8841 patients in 1964, and the public health laboratory carried out 29 686 examinations.

Major Public Health Problems

The island's main public health problems are poor environmental sanitation and the lack of safe water supplies. These are the principal cause of amoebic dysentery, round-worm infestation and gastro-enteritis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The grant given to the Seychelles by the United Kingdom Government under the scheme for colonial development and welfare grants, has been allocated to all departments: medical, agricultural, public works, etc. Thanks to the grant the following programmes have been initiated in the health field: an extensive tuberculosis programme and the building of a sanatorium, a radiological department, and an infant welfare programme with nine health centres of which four have already been built. Funds also became available for new equipment and the extension of existing hospitals, for research into the causes of anaemia and for the supply of medicine to combat the condition, and for the purchase of vitamin tablets for the outlying islands where local foodstuffs are poor in vitamin B. Other developments in the decade which should be mentioned are: the survey to provide a pure water supply to the island, a land settlement scheme, the construction of urban subsidized housing, and an expansion of the education programme.

National Health Planning

The efforts of the Medical Department are concentrated on reducing the high mortality in the age-groups under ten years and over 40 years. Most of the deaths in these groups are directly due to intestinal parasites and their manifestations. An infant welfare plan has been set up, aiming at the establishment of nine public health clinics to be used for maternal and child care and education in the elementary rules of hygiene. A housing scheme aims at the construction of 300 houses in Victoria in a three-year development period. They will be provided with septic tanks. At the end of 1964, 100 houses had been completed and were fully occupied. A very intensive campaign is also conducted against anaemia, which is mostly due to ancylostomiasis. To eradicate this disease mass treatment with vermicide and iron tablets was started in 1964 and a latrine construction programme is under consideration.

Government Health Expenditure

In 1963 the total general government consumption expenditure was 9.80 million rupees, of which 1.24 million rupees (i.e., 12.7 per cent.) were allocated to health services. This is equivalent to an expenditure of 27.6 rupees per head, as compared with 25.2 rupees per head in 1962. A further sum of 116 276 rupees was spent on capital account for the improvement and expansion of health facilities.

SOUTHERN RHODESIA

Population and Other Statistics

At the last census, taken in April-May 1962, the African population of Southern Rhodesia was 3 618 150. The census of the non-African population, taken in September 1961, showed a population of 239 310. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	3 760 000	3 880 000	4 010 000	4 140 000
Number of births*	175 000	180 000	186 000	192 000
Birth rate (per 1000 population)	47	46	46	46
Number of deaths*	50 700	52 500	54 400	56 100
Death rate (per 1000 population)	13	14	14	14
Natural increase (per cent.)	3.4	3.2	3.2	3.2

* Approximate figures.

The communicable diseases most frequently reported in 1964 were: tuberculosis, all forms (4665), leprosy, new cases (290), smallpox (204), typhoid and para-typhoid fevers (179), diphtheria (75), poliomyelitis (68), infectious hepatitis (27).

Hospital Services

In 1964, Southern Rhodesia had 224 hospitals and establishments for in-patient care providing 16 912 beds which is equivalent to a bed/population ratio of 4.1 per 1000. There were 564 935 admissions in 1964, and 7 019 095 days of medical care were given. The distribution of hospitals and beds was as follows:

Category and number	Number of beds
General hospitals	21 4 656
Rural hospitals	106 5 975
Medical centres	72 3 282
Tuberculosis hospitals	5 800
Infectious diseases hospitals	9 1 124
Psychiatric hospitals	3 867
Leprosarium	1 50
Physical therapy centres	3 64
Old people's homes	4 114

Medical and Allied Personnel

In 1964, Southern Rhodesia had 966 doctors, of whom two were doctors of medicine qualified in

dentistry. Of these 966 doctors, 222 were working in government service. The doctor/population ratio was one to 4300. Other health personnel included:

Medical assistants	1 225
Dentists	148
Pharmacists	357
Fully qualified midwives	10
Assistant midwives	10
Maternity assistants	1 167
Fully qualified nurses	2 656
Fully qualified nurses with midwifery qualifications	1 352
Veterinarians	70
Sanitary inspectors	108
Physical therapists	47
Laboratory technicians	54 *
X-ray technicians	37 *
Opticians	48
Health assistants	170

* In government service.

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	1 312 346
BCG	204 731
Diphtheria, whooping-cough and tetanus	104 000
Yellow fever	13 500
Typhoid fever	4 250
Cholera	1 150

Environmental Sanitation

In 1964, of the total population of Southern Rhodesia, 626 738 had piped water to their dwellings, 104 256 had water from communal standpipes or bore-holes and 1044 had private bore-holes. Regarding sewerage systems, 576 086 had water-borne systems, 117 777 had septic tanks, 34 673 had "aqua privies" and pit latrines and 3502 pail closets.

Government Health Expenditure

In 1964, the total general government consumption expenditure amounted to £38 million, of which £4.5 million (i.e. 11.8 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of £1.1 per head on these services. A further sum of £417 000 was spent on capital account for the expansion and improvement of health facilities.

TOGO

Population and Other Statistics

At the last census, taken in December 1960, the population of Togo was 1 439 800. Population estimates for the years 1961-1965 are as follows:

1961	1 480 000
1962	1 523 000
1963	1 565 000
1964	1 603 000
1965	1 638 000

Following a sample survey carried out in 1961, the birth and death rates are estimated at 55 and 29 per 1000 population respectively, and the infant mortality rate at 127 per 1000 live births.

The communicable diseases most frequently reported in 1964 were: malaria, new cases (282 312), measles (14 955), gonorrhoea (6178), dysentery, all forms (4853), whooping-cough (3695), influenza (2536), yaws, new cases (2456), bilharziasis (2332), syphilis, new cases (2279), leprosy (1662), infectious hepatitis (1186).

Hospital Services

In 1962, Togo had 37 hospitals and establishments for in-patient care, excluding medical centres (without doctor). The total bed capacity was 3354 including 153 beds in medical centres. The bed/population ratio was 2.1 per 1000. The beds in hospitals were distributed as follows:

Category and number	Number of beds
General hospitals	2
Rural hospitals	14
Maternity hospitals	16
Trypanosomiasis hospitals	3
Leprosaria	2
	800
	1 220
	399
	72
	710

Medical and Allied Personnel

In 1965, 45 doctors were working in Togo, of whom 35 were in government service and ten in private practice. The doctor/population ratio was one to 36 000. Other health personnel included:

Medical assistants	56
Dentists	4
Pharmacists	16
Fully qualified midwives	72
Traditional birth attendants	70
Fully qualified nurses	358
Nurses	100
Sanitary engineer	1

Immunization Services

The following immunization services were carried out in 1962:

Smallpox combined with yellow fever	107 399
Smallpox (simple)	63 300
BCG	3 668
Poliomyelitis (Salk vaccine)	885

UNITED REPUBLIC OF TANZANIA

Population and Other Statistics

At the last census of Tanganyika, taken in 1957, the population was 8 788 466. In Zanzibar and Pemba the last census, taken in 1958, showed a population of 299 111. Population estimates for Tanganyika for the period 1961-1964 are as follows:

1961	9 421 000
1962	9 607 000
1963	9 798 000
1964	9 990 000

The communicable diseases most frequently recorded in out-patient clinics in Tanganyika in 1963 were: gonorrhoea (46 644), dysentery, all forms (41 524), measles (21 815), trachoma (3644), whooping-cough (2498), relapsing fever (2308), influenza (1300), infectious hepatitis (668), smallpox (677), typhoid and paratyphoid fevers (604).

Organization of the Public Health Services

The health services of the United Republic of Tanzania are administered by the Ministry of Health in Dar-es-Salaam (covering Tanganyika) and the Ministry of Health and Social Services in Zanzibar (covering Zanzibar and Pemba). Both these ministries are responsible to their respective ministers.

The Ministry of Health in Dar-es-Salaam is under a minister, assisted by a principal secretary, a chief medical officer, a deputy chief medical officer, a principal medical officer, a chief health inspector, a chief pharmacist and a principal matron. In addition to supervising the public health services throughout Tanganyika, the Ministry is responsible for the maintenance, upkeep and also the staffing of a majority of the hospitals, dispensaries and health centres. The Ministry also controls the non-governmental hospitals, which are largely run by voluntary agencies, and

provides half the annual cost of these institutions. Many of the dispensaries and some of the rural health centres are under the control of the local government district councils. The public health services of the larger towns are administered by town councils, again advised by the Ministry of Health. There are a few private hospitals and clinics, particularly on industrial and agricultural estates, but the Ministry has a considerable degree of control over these establishments.

Tanganyika is divided into 17 regions, each having a regional medical officer in charge of the health services. Government and voluntary agency institutions and private medical practices within the region come within this officer's sphere of administration. At the district level, the district medical officers are responsible for the overall organization of both preventive and curative services.

Hospital Services

In 1964, Tanganyika had altogether 356 hospitals and establishments for in-patient care, providing 19 415 beds—equivalent to a bed/population ratio of 1.9 per 1000—distributed as follows:

Category and number	Number of beds
General hospitals	103
Medical centres	248
Tuberculosis hospitals	2
Infectious diseases hospitals	2
Psychiatric hospital	1
	11 355
	6 639
	358
	71
	992

Additional in-patient facilities were provided at 22 leprosaria. During 1964, 377 605 patients were admitted to all these establishments. Out-patient facilities were available at 102 hospital out-patient departments and 991 health centres.

Medical and Allied Personnel and Training Facilities

In 1964, Tanganyika had 500 doctors who were actively practising in the country. The doctor/population ratio was thus one to 20 000. Other health personnel included:

Medical assistants	181
Dentists	31
Fully qualified midwives	52
Fully qualified nurses	1 002
Fully qualified nurses with midwifery qualifications	476
Nursing auxiliaries	50
Health Inspectors	58
Assistant health inspectors	37
Sanitary inspectors	21

The data for other categories of paramedical personnel are available only for 1963, when numbers were as follows:

Physical therapists	4
Laboratory technicians	13
Laboratory assistants	53
X-ray technician	1

A vigorous training programme for health service personnel has been undertaken. During the period 1954-1964, such training has included the instruction of nationals in nursing and in clinical and preventive medical procedures, below the level of undergraduate medical training. In 1963 the Dar-es-Salaam School of Medicine was opened for undergraduate medical training. Students are now trained at this school as well as at Makerere College in Uganda and at medical schools overseas.

Communicable Disease Control and Immunization Services

Malaria is endemic over most of Tanganyika; it has been virtually eliminated from Zanzibar and Pemba Islands. In all towns malaria control measures of drainage and larviciding continue to be used, but little progress has been made in the control of the disease in rural areas. The malaria service has undertaken a six-year survey of the incidence of the disease and its various vectors throughout the country. Vesical bilharziasis is endemic in every part of the country and rectal bilharziasis is endemic in western Tanganyika but is not established on the eastern coastal plain. Much research is being undertaken into the vectors of the disease and the methods of controlling them, particularly in a form that will be within the reach of the peasant farmer. The chemotherapy of bilharziasis is also being studied. African trypanosomiasis is endemic in certain demarcated and restricted foci on the mainland. People at risk are resettled in tsetse-free areas, and the bush and forest harbouring the fly are cut down or treated with insecticide. Enteric diseases and bacillary and amoebic dysentery are very common.

Pulmonary tuberculosis is widespread. Tuberculin-testing and X-ray examinations are carried out, particularly among the child population. Mass BCG vaccination campaigns are being undertaken by district councils in many parts of the country, and a special service has been established for the detection and treatment of cases. Bubonic plague is endemic in two foci, namely Singida and the southern Pare Mountains in Tanganyika. The disease becomes epidemic at intervals of several years. It is sylvatic and does not appear to penetrate to towns. Studies of the rodent and flea vectors have been carried out for several years in order to establish the points in the cycle which may be susceptible to special attack. At present chief reliance is placed on the destruction of the insect vector in houses by the application of insecticides. In 1964, an outbreak of plague occurred with 500 to 600 cases and 11 deaths. Outbreaks of smallpox occur in different areas throughout the year. Mass vaccination campaigns are constantly in progress.

and 1.5 million smallpox vaccinations were carried out in 1964. Tick-borne diseases and helminthic infestations are found throughout Tanzania. Occasional outbreaks of poliomyelitis also occur and widespread vaccination campaigns using Sabin vaccine are conducted by the district councils. Leprosy is endemic throughout Tanzania; cerebrospinal meningitis is endemic in certain foci.

Specialized Units

In 1964, 361 pre-natal centres and 335 child health centres were engaged in maternal and child welfare. These centres recorded 234 657 first attendances of pregnant women and 169 130 first attendances of children aged up to five years. A total of 119 932 deliveries were attended by a doctor or qualified midwife. Although there is only one specially organized school health service, namely that of the Dar-es-Salaam City Council, schoolchildren everywhere receive regular medical attention from the local government and voluntary agency medical authorities. Apart from the special dental clinics, many general clinics also give dental care. In 1963 there were also one independent rehabilitation centre, five hospital rehabilitation departments and three psychiatric out-patient clinics. Other specialized units included three tuberculosis units and 23 leprosy out-patient clinics. The public health laboratory carried out 153 903 general pathological examinations and 5614 special and research investigations in 1963.

Environmental Sanitation

In 1963, 113 000 inhabitants were served with piped water to their dwellings; 245 000 had water from public fountains; 5.5 million had to rely on community or private wells and four million on other sources. Two hundred thousand inhabitants were served by sewerage systems, 20 000 had sewage treatment facilities and nearly eight million had individual installations.

Major Public Health Problems

The country's major health problems are those arising from the incidence of the endemic diseases already mentioned.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The health services of Tanganyika steadily developed during the decade under review on the basis of carefully designed five-year plans. With the introduction of responsible self-government in Tangan-

yika in 1959, the former medical department became a Ministry of Health, and the former Director of Medical Services changed his designation to Chief Medical Officer. Tanganyika's independence in 1961 affected the Ministry of Health mainly in relation to the subsequent splitting of the provinces into 17 regions, thus to some extent necessitating a fragmentation of the medical administrative organization. An important feature of development since independence has been the village and community self-help projects, under which dispensaries and hospital wards are constructed by the local communities on a voluntary basis.

National Health Planning

The Ministry of Health is closely concerned in the five-year development plan covering the period 1964-1969. The objective of the health plan is to improve the standard of health of the citizens of Tanganyika through a co-ordinated national health service. Increasing emphasis will be placed on the preventive aspects of medicine and on the extension of urgently needed health services into the rural areas. It is planned to extend the average expectancy of life to about 50 years by 1980, by reducing the infant mortality. The present estimated expectation of life is 35-40 years. A target of one hospital bed for every 1000 inhabitants in each district has been set under the plan. Each of the 17 regions will have a regional hospital with the full range of services. By mid-1969 consultant hospitals will have been established in Dar-es-Salaam, Tanga, Moshi and Mwanza. By the end of the planning period a close approach will have been made to the target of providing one health centre to every 50 000 inhabitants. It is intended to develop these centres initially as part of the Ministry of Health organization, and subsequently to allow them to become the responsibility of local authorities. In support of the programme of expansion of medical services, numbers of medical and paramedical workers will be increased and their standard of training improved. To this end a considerable enlargement in the Ministry of Health medical training programme is envisaged. It is intended to improve standards in the control of epidemic and endemic diseases, using the rural health centre as the focus from which the various campaigns can be initiated. Special stress will be placed on nutrition and health education. In order to achieve these objectives, central government capital and recurrent annual expenditure on health services will be increased by about 20 per cent.

Medical and Public Health Research

In addition to the clinical research carried out by individual medical practitioners in hospitals, various

research activities have also been undertaken on a unit basis by staff of the Ministry of Health special divisions. Three institutes sponsored by the East African Common Services Organization (an inter-country organization based in Nairobi, Kenya) exist in Tanzania: the East African Institute for Medical Research, Mwanza, which principally studies bilharziasis, the East African Institute for Malaria and Vector-borne Disease, Amani, and the Tropical Pesticides Research Institute, Arusha.

International Collaboration

Collaboration with other countries has mainly taken the form of exchange of notification of epidemic contagious diseases. Assistance in the field of health

has been received from UNICEF and WHO. Bilateral exchanges of technical information and of students are made with the United Kingdom and increasingly with other countries.

Government Health Expenditure

In the 1964/65 fiscal year the total general government consumption expenditure was 34.5 million pounds sterling,¹ of which £3.0 million (i.e., 8.6 per cent.) was devoted to the provision of health services. This is equivalent to an expenditure of £0.3 per head on these services. An additional sum of £392 000 was spent on capital account for the improvement and expansion of health facilities; almost 60 per cent. of this amount was related to health projects included in the national development plan.

UPPER VOLTA

Population and Other Statistics

Population estimates for the years 1961-1964 are given in the following table:

1961	4 400 000
1962	4 500 000
1963	4 650 000
1964	4 716 000

In 1960/61 the birth rate was estimated at 49.1 per 1000 population, the general death rate at 30.5 per 1000, and the infant mortality rate at 174 per 1000 live births. The natural increase was 1.86 per cent.

In 1964, the following communicable diseases were most frequently notified: malaria, new cases (132 734), amoebic dysentery (20 372), vesical bilharziasis (13 401), whooping-cough (10 407), trachoma (8152), measles (7129), meningococcal infections (1263), bacillary dysentery (892), typhoid and paratyphoid fevers (133), poliomyelitis (96).

Organization of the Public Health Services

The responsibility for all health functions in Upper Volta rests with the Minister of Health and his personal cabinet of senior advisers and officers. Among the services under the direction of the cabinet are the following: the directorate of the Major Endemic Diseases Service (Service des Grandes Endémies), the directorate of social affairs, the directorate of the national pharmacy, the directorate of the national nursing school and the directorate of the three central hospitals.

Two services are responsible for providing medical and health care to the rural population, namely the

Major Endemic Diseases Service (Service des Grandes Endémies) and the medical welfare service. The Major Endemic Diseases Service is headed by a director and has 11 doctors who are in charge of a sector each. On an average, two case-finding and vaccination teams operate in each sector. The medical welfare service comprises 22 medical districts, each of which is in charge of a doctor who is directly responsible to the Minister. Each medical district consists of one or several sections (*cercles*) provided with medical centres and dispensaries.

Hospital Services

In 1964, Upper Volta had three general hospitals with 1268 beds. The 29 929 patients admitted to these hospitals received 467 934 days of in-patient care. There were also 30 medical centres with 505 beds and 71 maternity centres with 826 beds. The grand total of 2599 beds was equivalent to 0.6 beds per 1000 population.

Out-patient care was available in 1963 in two hospital out-patient departments, 23 health centres, 221 dispensaries and 21 medical aid posts. There were over three million new out-patients and more than ten million attendances were made at these establishments.

Medical and Allied Personnel and Training Facilities

In 1964, 75 doctors were working in Upper Volta. The doctor/population ratio was thus one to 63 000.

¹ The official currency in the United Republic of Tanzania is the East African shilling (20 EA shillings = £1).

Other health personnel included:

Dentists	2
Pharmacists	13
Fully qualified midwives	10
Auxiliary midwives (matrones)	50
Assistant midwives	19
Qualified nurses	159
Assistant nurses	834
Nursing students	179
Specialized nurses (laboratory, radiology, pharmacy, surgery)	163
Veterinarians	15
Sanitarians	17
Welfare officers (assistantes sociales)	7
Auxiliary welfare workers (aides sociales)	22

A nursing school was established in 1962 in Ouagadougou, providing a three-year course of professional education. The first six nurses graduated in 1965.

Communicable Disease Control and Immunization Services

The control of important endemic and epidemic diseases such as leprosy, trachoma, treponematosis, trypanosomiasis and onchocerciasis is undertaken by the Major Endemic Diseases Service (Service des Grandes Endémies). Although malaria occurs throughout the country, no eradication campaign has yet been organized. Onchocerciasis is a very widespread disease, causing blindness in about 8 to 10 per cent. of the affected population, which is estimated at about 350 000 to 400 000 cases. In some villages of the southern part of the country, 70 to 80 per cent. of the inhabitants suffer from the disease. A pilot treatment project was set up in 1963 in five villages where the population was treated with Notezine-moranyl or with "mel W". As the eradication of the vector is proving very difficult, a mass treatment campaign is envisaged. A plan for the control of tuberculosis was submitted to the Development Fund for Overseas Countries of the European Economic Community in 1964. Very little, however, is yet known about the incidence and the extent of this disease. Vesical bilharziasis also afflicts a considerable portion of the population. Molluscicide spraying and health education are at present the only measures taken against this disease. Whereas onchocerciasis is predominant in the south of the country, trachoma is widespread in the northern part, where it is estimated to occur in 5 to 10 per cent. of the population. The total number of trachoma cases in the whole country is estimated at 700 000. The mobile ophthalmological team of the Major Endemic Diseases Service gives treatment in some limited areas. The results have, however, not been very satisfactory because the patients often do not follow the treatment. Measles is also very common in Upper Volta. In 1962, nearly 28 000

cases were reported, causing more than 1000 deaths. As a result of the mass vaccination campaign organized between November 1962 and March 1963, the morbidity and mortality from the disease were reduced to 5117 cases and 211 deaths in 1964.

The following immunization procedures were carried out in 1964:

Smallpox	1 028 480
Smallpox and yellow fever	488 397
BCG	80 012
Measles	33 652
Yellow fever	750
Cholera	250

In 1965, 184 423 vaccinations were given against poliomyelitis.

Specialized Units

Maternal and child care is provided in all medical centres, medical aid posts and dispensaries. Special maternal and child health centres exist only in Ouagadougou and Bobo-Dioulasso. In 1963, 73 840 pregnant women, 130 227 children under one year and 184 541 children aged from one to five years were under medical supervision. Domiciliary care was given to 378 395 children. There were 28 682 deliveries attended by a doctor or qualified midwife. Two school health units looked after 16 107 schoolchildren; 8500 patients received treatment at two dental health units, and 774 psychiatric consultations were given to 109 new out-patients. Two public health laboratories carried out nearly 30 000 examinations.

Major Public Health Problems

The most important public health problems in Upper Volta are the high incidence of malaria, measles, onchocerciasis, tuberculosis, trachoma, leprosy and vesical bilharziasis. Malnutrition is another public health problem about the extent of which very little is known.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Upper Volta became a member of the French Community in 1958 and attained full independence in 1960. A new constitution was promulgated in the same year. About 95 per cent. of the population is engaged in agriculture, which is being increasingly developed. Much work is also being done in the field of education. The proportion of children attending school has risen from 2.3 per cent. to 9 per cent. A special rural

education programme was set up in 1962. In the field of health, the hospital and health centre network has developed progressively with the construction of a new hospital in Ouagadougou in 1961 and the extension of other hospitals.

National Health Planning

The five-year plan which was drawn up in 1962 could not be implemented. Two projects for the construction of hospitals and medical centres were initiated in 1959, one being financed by the Development Fund for Overseas Countries of the European Economic Community and the other by the French *Fonds d'Aide et de Coopération*.

International Collaboration

Upper Volta is collaborating in health matters with the members of the Organization for Co-ordination and Co-operation in the Control of Major Endemic Diseases (OCCGE). It also receives assistance from UNICEF and WHO.

Government Health Expenditure

In 1963, the total general government health expenditure, on capital and current account, was 870 million CFA francs; this is equivalent to an expenditure of 187 CFA francs per head on these services. About 16 per cent. of the total government health expenditure was financed at the central level, the remainder by local authorities.

ZAMBIA

Population and Other Statistics

The last census of the African population, taken in May 1963, showed a population of 3 409 110. The census of September 1961 recorded a non-African population of 84 380. Population estimates for the period under review are as follows:

1961	3 300 000
1962	3 400 000
1963	3 496 000
1964	3 600 000

In 1964 the communicable diseases most frequently notified were: measles (6016), tuberculosis, all forms, new cases (3456), smallpox (2214), whooping-cough (1078), leprosy (902), infectious hepatitis (374), dysentery, all forms (317), syphilis, new cases (254), influenza (196), gonorrhoea (175). With the exception of smallpox, the figures above refer only to hospital in-patients.

Hospital Services

In 1963, Zambia had the following hospitals and establishments for in-patient care:

Category and number	Number of beds
General hospitals	12
Rural hospitals	61
Tuberculosis hospital	1
Psychiatric hospital	1
Leprosaria	29
Medical centres	176

There were thus 280 hospitals with a total of 9921 beds, which was equivalent to a bed ratio of 2.8 per 1000 population.

Out-patient services were given at 17 hospital out-patient departments, 232 health centres and one mobile health unit. In 1964 these establishments recorded 3 464 380 new patients.

Medical and Allied Personnel

At the end of 1963, Zambia had 392 doctors, of whom 82 were in government service, 242 in private practice, 42 employed by the mining industry and 26 employed by missions. There was thus one doctor per 8900 population.

Other health personnel included:

Dentists	29
Pharmacists	80
Veterinarians	20
Fully qualified midwives	3 *
Fully qualified nurses	69 *
Ward attendants	44 *
Dressers	755 *
Health assistants	77 *
Sanitarians	10 *
Laboratory and X-ray technicians	34 *

* In government service.

A total of 204 full-time nurses, 11 part-time nurses and 12 male nurses were employed by mining and other industries.

Immunization Services

The following immunization procedures were carried out in 1963:

Smallpox	728 970
Tuberculosis	88 400
Yellow fever	24 290
Poliomyelitis	11 425

Specialized Units

In 1964, there were 106 centres for pre-natal care. Two school health units looked after 5871 schoolchildren; three dental units treated 21 479 patients. There were also five hospital rehabilitation departments, 30 leprosy out-patient clinics and a public health laboratory, which carried out 106 637 investigations of all kinds.

Government Health Expenditure

In the 1963/64 fiscal year the total Ministry of Health expenditure on current account was £3.85 million. This was equivalent to an expenditure of approximately £1.1 per head. A further sum of £2.82 million was spent on capital account for the improvement and expansion of existing health facilities.

REGION OF THE AMERICAS

ANTIGUA

Population and Other Statistics

At the last census, taken on 7 April 1960, the population of Antigua was 54 304. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	62 164	58 159	61 387	60 389
Number of live births	1 768	1 787	1 833	1 886
Birth rate (per 1000 population) . . .	28.4	30.7	29.9	31.2
Number of deaths	503	405	574	501
Death rate (per 1000 population) . . .	8.1	7.0	9.4	8.3
Natural increase (per cent.)	2.03	2.37	2.05	2.29
Number of deaths, 1-4 years	42	20	78	36
Death rate, 1-4 years (per 1000 population at risk)	7	3	10	6
Number of infant deaths	97	75	100	90
Infant mortality rate (per 1000 live births)	54.9	42.0	54.6	47.7
Number of maternal deaths	8	8	7	6
Maternal mortality rate (per 1000 live births)	4.5	4.5	3.8	3.2

Of the 501 deaths recorded in 1964 the main causes were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (49), malignant neoplasms (47), vascular lesions affecting the central nervous system (46), hypertension (43), senility without mention of psychosis, ill-defined and unknown causes (43), avitaminoses and other deficiency states (27), pneumonia (26).

The communicable diseases most frequently notified in 1963 and 1964 were the following: gonorrhoea (214 in 1963), syphilis, new cases (188 in 1963), influenza (146 in 1964), measles (14 in 1964), dysentery, all forms (14 in 1964).

Hospital Services

All medical and health services in Antigua are provided by the Government. In 1963, there were one general hospital providing 180 beds, one psychiatric hospital with 200 beds and one leprosarium with 40 beds. The total number of 420 beds was equivalent to 6.8 beds per 1000 population. Additional medical care facilities were available in a home for the aged and infirm which had 150 beds.

In the same year out-patient care was given at the hospital out-patient department, three health centres and 16 dispensaries.

Medical and Allied Personnel

In 1963 Antigua had 16 doctors, equivalent to one doctor for 3800 inhabitants. There were also three dentists, 13 pharmacists, 20 sanitary inspectors, seven laboratory and X-ray technicians, and 81 fully qualified nurses, including 45 with midwifery qualifications. Ninety-one fully qualified midwives were registered; however, not all of them were in practice.

Immunization Services

In 1963 the following immunization procedures were carried out: 6420 vaccinations against typhoid and paratyphoid fevers, 5083 against poliomyelitis, 1450 against diphtheria, whooping-cough and tetanus, and 1009 against smallpox.

Specialized Units

In 1964, 637 pregnant women and 1912 children under one year of age attended the 11 maternal and child health centres. All deliveries were attended by a qualified midwife or doctor. About 27 per cent. of the total school population were under medical supervision. Three dental health units gave services to 4854 persons.

Environmental Sanitation

At the end of 1964, 35 000 of Antigua's population lived in six communities with less than 10 000 inhabitants. In those communities, 2450 persons were served with piped water to their dwellings, 27 000 depended on water from public fountains and 5550 on other sources. In the only community with 26 000 inhabitants, 6950 were served with piped water to their dwellings, 17 200 depended on public fountains and 1850 on other sources. Four thousand persons were served by sewerage systems. There were 1023 houses with individual installations.

Government Health Expenditure

In 1964, the total general government expenditure amounted to WI \$7 001 766, of which WI \$1 334 095 (i.e., 19 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure on these services of WI \$22 per head.

ARGENTINA

Population and Other Statistics

At the last census, taken in September 1960, the population of Argentina was 20 759 140. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963*	1964*
Mean population	21 011 041	21 350 416	21 687 919	22 019 451
Number of live births	476 259	490 414	487 883	481 639
Birth rate (per 1000 popula- tion)	22.7	23.0	22.5	21.9
Number of deaths	176 477	184 013	186 058	184 518
Death rate (per 1000 popula- tion)	8.4	8.6	8.6	8.4
Natural Increase (per cent.) .	1.43	1.44	1.39	1.35
Number of infant deaths . .	28 158	28 811	30 365	29 026
Infant mortality rate (per 1000 live births)	59.1	58.7	62.2	60.3
Number of maternal deaths*	545	588
Maternal mortality rate (per 1000 live births)*	1.1	1.2

* Provisional figures.

In 1962 the total number of deaths was 184 013. The main causes were: senility without mention of psychosis, ill-defined and unknown causes (37 738), malignant neoplasms (29 640), cardiovascular diseases (25 298), vascular lesions affecting the central nervous system (13 823), congenital malformations and diseases peculiar to early infancy and immaturity (12 327), all forms of violence, and accidents (11 173), pneumonia (5935), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (5255), bronchitis (992).

The communicable diseases most frequently notified in 1964 were: measles (53 018), whooping-cough (40 711), tuberculosis, all forms, new cases (21 101), gonorrhoea (11 051), syphilis, new cases (6195), diphtheria (3118), infectious hepatitis (2931), amoebic dysentery (2090), trypanosomiasis (1592), typhoid and paratyphoid fevers (1545), leprosy (1502).

Organization of the Public Health Services

The Ministry of Welfare and Public Health has the overall responsibility for the administration of the health and welfare services in Argentina. Its activities cover the following main fields: public health, social assistance, health administration, research and education. The provincial governments have great autonomy in health matters within their provinces. Apart from the Ministry of Welfare and Public Health,

various other ministries and public and private welfare and health organizations are also concerned with health services in their respective fields.

Hospital Services

In 1962, Argentina had 2253 hospitals and establishments for in-patient care, providing 129 870 beds—equivalent to a bed/population ratio of 6.1 per 1000. Of these, 1291, providing 103 569 beds, were state establishments. The total number of 129 870 beds was distributed as follows:

Category and number	Number of beds
General hospitals	1 850
Medical centres	54
Tuberculosis hospitals	76
Maternity hospitals	115
Paediatric hospitals	31
Psychiatric hospitals	59
Others	59
Leprosaria	9

Out-patient facilities were available in 1964 in the following establishments controlled by the Ministry of Welfare and Public Health: 123 hospital out-patient departments, 19 sanitation centres, 72 health centres, four dispensaries, 18 medical aid posts and 14 other out-patient establishments. During the year 1 131 056 out-patients made 2 748 518 attendances at these various establishments.

Medical and Allied Personnel

In 1962, Argentina had 31 831 doctors, which is equivalent to a doctor/population ratio of one to 670. Other health personnel included:

Dentists	11 584
Fully qualified midwives	7 092
Fully qualified nurses	28 114
X-ray technicians	1 359

Immunization Services

The following immunization procedures were carried out in 1964:

Poliomyelitis	347 826
Smallpox	262 161
Diphtheria, whooping-cough and tetanus . . .	105 314
Diphtheria	87 588
BCG	45 340
Whooping-cough	11 733
Tetanus	8 544
Typhoid and paratyphoid fevers	7 989

Specialized Units

In 1964, maternal and child welfare services were based on 188 pre-natal centres and 280 child health centres at which 56 000 attendances of pregnant women, 622 000 of infants under one year and 156 000 of children aged between one and five years were recorded. Domiciliary care was given to 8000 pregnant women, 42 000 infants and 2000 pre-school children. According to data provided by the Ministry of Welfare and Public Health, 29 091 deliveries were attended by a doctor or qualified midwife. A total of 1 514 475 schoolchildren were receiving health care and supervision. The four dental health units were attended by 59 485 patients and the two independent medical rehabilitation centres by 1831 outpatients. There were also 12 psychiatric out-patient clinics, where 6186 patients were recorded during the year. Other specialized units included nine tuberculosis centres, a venereal disease clinic and nine leprosy clinics.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Among the main achievements in the economic field during the ten-year period under review have been the reduction of unemployment, the salary increase of industrial workers and the expansion of the internal market. Planning centres for the study of educational problems and needs have been established at the national and regional levels. In order to resolve some difficulties at the primary educational level, school canteens and recreation centres have been set up. The number of houses in Argentina is estimated at 4 727 000, of which 675 000 are in a dangerous or defective condition. In 1964, 107 000 new houses were built. Developments in the field of health include the extension and modernization of hospitals and health establishments, the integration of health policy with the plans for general economic and social development, and the regionalization of the health services.

National Health Planning

In 1961, the National Planning Council was set up. The Minister of National Economy is the chairman of this council, which is placed in the office of the President of the Republic. An advisory group

within the Council is responsible for the study of the various economic aspects of the health services. Another important body concerned with planning activities is the Federal Council of Investments, a body which was set up by the provinces themselves and which includes a representative from each province. The Federal Council of Investments acts in an essentially advisory capacity on regional technical programmes. It is composed of various technical advisory groups dealing with the main development sectors, including the health sector. The health service advisory group deals with social investments and proposals for the improvement and consolidation of health programmes. A joint committee of the Ministry of Welfare and Public Health, the National Planning Council and the Federal Council of Investments has been established for the co-ordination of sectorial planning.

At present, Argentina has no proper national health plan. A number of studies with a view to the preparation of such a plan have been carried out, including the making of an inventory of all existing health resources; preparation of a methodology for studying the cost of health services; establishment of mortality and morbidity recording systems in all provinces; mechanization at the central level of the collection and analysis of statistical data, etc. It is proposed to study the planning methodology which has been evolved by PAHO and the Center of Studies for Development of the Central University of Venezuela.

In 1963, the Directorate for Health Planning and Evaluation was established.

International Collaboration

Argentina has maintained close collaboration in the field of health with its neighbouring countries with a view to co-ordinating efforts in the control and eradication of communicable diseases. It is also an active member of UNICEF, WHO and of the Organization of American States.

Government Health Expenditure

In the fiscal year 1963/64 the total central government expenditure amounted to 138 080 million pesos, of which 7916 million pesos were devoted to the provision of health services. This was equivalent to an expenditure of 360 pesos per head on these services.

BARBADOS

Population and Other Statistics

The last census, taken in April 1960, showed a population of 232 327. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	232 665	235 000	239 000	242 000
Number of live births	6 754	6 881	6 756	6 506
Birth rate (per 1000 population) . . .	29.0	29.3	28.3	26.9
Number of deaths	2 410	2 116	2 090	2 127
Death rate (per 1000 population) . . .	10.4	9.0	8.7	8.8
Natural increase (per cent.)	1.86	2.03	1.96	1.83
Number of deaths, 1-4 years	109	87	96	92
Death rate, 1-4 years (per 1000 population at risk)	4.2	3.3	3.6	2.9
Number of infant deaths	570	376	418	339
Infant mortality rate (per 1000 live births)	84.4	54.6	61.9	52.1
Number of maternal deaths	15	16	22	9
Maternal mortality rate (per 1000 live births)	2.2	2.3	3.3	1.4

Of the 2127 deaths recorded in 1964, the main causes were: vascular lesions affecting the central nervous system (331), malignant neoplasms (255), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (219), arteriosclerotic and degenerative heart disease (206), senility without mention of psychosis, ill-defined and unknown causes (154), pneumonia (109).

The following communicable diseases were notified in 1964: tuberculosis, all forms, new cases (79), typhoid fever (22), diphtheria (5), meningococcal infections (1).

Hospital Services

In 1962, Barbados had a complement of 2690 beds (equivalent to 11.4 beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	5
Tuberculosis hospital	1
Maternity clinics	2
Psychiatric hospital	1
Leprosarium	1
Institutions for the infirm and destitute	11
	1 296

Out-patient medical care was provided in 1964 at one hospital out-patient department, where 15 948 new patients attended, and at nine health centres and 11 dispensaries. A total of 242 007 attendances was recorded at the hospital out-patient department and at the health centres.

Medical and Allied Personnel

In 1962, 82 physicians were working in Barbados. There was thus one doctor per 2900 inhabitants. Other health personnel included:

Dentists	20
Pharmacists	103
Fully qualified midwives	35
Fully qualified nurses	248
Auxiliary nurses	355
Veterinarians	6

Communicable Disease Control and Immunization Services

In the tuberculosis control programme the following measures are taken. Routine tuberculin testing is carried out on schoolchildren and negative reactors are given BCG vaccination. Contacts of notified cases are tuberculin-tested and X-rayed and BCG is administered where appropriate. Free treatment of venereal diseases is provided at all health centres. Contacts are traced, examined and treated. There has been a marked fall in the incidence of early and congenital syphilis but the incidence of gonorrhoea remains high. There were 2668 cases of gonorrhoea in 1964 and 635 new cases of syphilis. In 1963 there was an outbreak of paralytic poliomyelitis with 74 notified cases and four deaths. No cases were notified in 1964. A small number of cases of typhoid fever are notified each year. All contacts are immunized with TAB vaccine. An environmental sanitation programme was started in 1959 with the assistance of UNICEF and WHO. At the end of 1964, 97 per cent. of the target figure of 10 000 installations had been completed. There is an island-wide water supply system. All water for domestic use is chlorinated. Ancylostomiasis occurs in the damper areas of the island.

Routine poliomyelitis, diphtheria, whooping-cough and tetanus immunization is given to all infants attending the child health clinics. The following immunization procedures were carried out in 1965:

Poliomyelitis	13 973
Smallpox	9 400
BCG	8 468
Diphtheria, whooping-cough and tetanus	8 059
Typhoid and paratyphoid fevers	2 592
Yellow fever	244

Specialized Units

In 1964, maternal and child welfare services were provided at 12 pre-natal and 12 child health centres,

where 4962 pregnant women and 2831 children under one year of age attended. A total of 2229 deliveries (34.3 per cent. of all births) were institutional. Three dental service units gave treatment to 12 764 patients. The psychiatric out-patient clinic was attended by 695 new patients. The public health laboratory carried out 43 206 examinations during the year.

Environmental Sanitation

During 1964, 114 000 inhabitants were being served with piped water to their dwellings; 128 000 had to rely on public fountains and 1000 depended on community or private wells.

Major Public Health Problems

The important health problems in Barbados are malnutrition, respiratory tuberculosis and venereal disease. Malnutrition, with its associated conditions in the infant and young child, is the most serious. These conditions become apparent soon after weaning, usually at about the age of six months, and continue up to the age of about four years.

International Collaboration

International collaboration in health work has mainly taken the form of exchange of information on communicable diseases. In the curative field, local facilities, particularly in psychiatry, have been made available to neighbouring territories, while facilities in thoracic surgery and neurosurgery have been provided to Barbados by Jamaica, Trinidad and Tobago, Canada and the United States of America. Assistance in environmental sanitation projects, the *Aedes aegypti* eradication programme and training of health personnel has been received from UNICEF and WHO.

Government Health Expenditure

In the fiscal year 1964/65 the total general government expenditure on current account amounted to WI \$37.8 million, of which WI \$5.5 million (i.e. 14.5 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of WI \$22.5 per head on these services as compared with WI \$15 per head in 1960/61. A further sum of WI \$1.2 million was spent on capital works in the health field, over 82 per cent. of these funds being spent on projects included in plans for the development and expansion of health services.

BOLIVIA

Population and Other Statistics

At the last census, taken in September 1950, the enumerated population of Bolivia was 2 704 165. The census results were subsequently adjusted on account of under-estimation to 3 019 031, which included an estimated 87 000 tribal Indians. Population estimates and some other vital statistics for the period 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	3 500 000	3 549 000	3 597 000
Number of live births	93 984	101 514	77 850
Birth rate (per 1000 population)	26.9	28.6	21.6
Number of deaths	27 234	30 604	21 544
Death rate (per 1000 population)	7.8	8.6	6.0
Natural Increase (per cent.)	1.91	2.00	1.56

In 1964, the total number of deaths was 33 363. The main causes were: birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (5012), senility without mention of psychosis, ill-defined and unknown causes (4148), ulcer of the

stomach and duodenum, appendicitis, intestinal obstruction and hernia, gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (3234), tuberculosis, all forms (2972), rheumatic fever (2807), cirrhosis of the liver (2059), accidents and other forms of violence (1958), arteriosclerotic and degenerative heart disease (1672), malignant neoplasms (1275).

The communicable diseases most frequently notified in 1964 were: influenza (932), measles (415), diphtheria (208), whooping-cough (144), typhoid fever (131), gonorrhoea (78), malaria, new cases (73), bubonic plague (49), typhus (47), scarlet fever (40).

Hospital Services

In 1962, the total bed capacity in hospitals was 7371, which is equivalent to a bed/population ratio of 2.1 per 1000.

Out-patient facilities were available in 1964 in 13 hospital out-patient departments, 16 health centres,

30 medical aid posts, and 92 health posts, as well as from two mobile health teams. During the year, 213 063 patients made 464 895 attendances.

Medical and Allied Personnel

In 1963, Bolivia had 977 doctors, which is equivalent to a doctor/population ratio of one to 3700. Other health personnel included:

Dentists	591
Pharmacists	470
Fully qualified nurses	367
Assistant nurses, midwifery and nursing auxiliaries	3 508

Immunization Services

The following immunization procedures were carried out in 1963:

Smallpox	517 270
Poliomyelitis	102 696
Yellow fever	39 472
Diphtheria	30 794
Whooping-cough	7 084
BCG	6 044
Typhoid and paratyphoid fevers	2 428

Specialized Units

In 1964, maternal and child welfare services were based on 16 centres, where 4615 pregnant women, 8661 infants under one year and 26 427 children aged between one and five years attended. Domiciliary care was given to 4615 pregnant women, 21 102 infants and 7105 pre-school children. Ten dental health units gave treatment to 22 442 patients. Other specialized units included three independent medical rehabilitation centres, and four psychiatric out-patient clinics attended by 445 patients. There were also four public health laboratories.

BRITISH GUIANA ¹

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	577 085	594 031	611 889	628 514
Number of live births	24 808	25 316	25 384	25 015
Birth rate (per 1000 population)	43.0	42.6	41.5	39.8
Number of deaths	5 381	4 861	4 573	...
Death rate (per 1000 population)	9.3	8.2	7.8	...
Natural Increase (per cent.)	3.37	3.44	3.37	...
Number of infant deaths	1 232	1 236	1 367	1 056
Infant mortality rate (per 1000 live births)	49.7	48.8	53.9	42.2

Of the 4573 deaths recorded in 1963, the main causes were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (831), pneumonia (452), senility without mention of psychosis, ill-defined and unknown causes (426), hypertension (357), vascular lesions affecting the central nervous system (289), bronchitis (172), diabetes mellitus (150), chronic rheumatic heart disease and other diseases of the heart (113), all accidents (110, including 11 in motor-vehicle accidents).

The most frequently reported communicable diseases in 1963 were: gonorrhoea (5910), influenza (1888), syphilis, new cases (800), whooping-cough (570), meningococcal infections (570), measles (537), malaria, new cases (495), poliomyelitis (311), dysentery, all forms (252), typhoid fever (228), tuberculosis, all forms, new cases (184).

Organization of the Public Health Services

The overall responsibility for the health services of the country rests with the Minister of Health and Housing. He is assisted by the Permanent Secretary, who is responsible for the administration of these services, and by the Chief Medical Officer, who is also Chief Medical Adviser to the Minister. The Deputy Chief Medical Officer is in charge of general medical care and the Principal Medical Officer of the preventive aspects of the services. The Ministry comprises three health divisions: environmental sanitation, public health nursing and health education. The Central Board of Health is the constituted authority for all matters relating to health in the whole territory. The Chief Medical Officer is the Chairman of the Board and the Principal Medical Officer is its chief executive officer. For administrative purposes, the country is divided into local sanitary districts, each of which is under the jurisdiction of a local sanitary authority.

The town councils of Georgetown and New Amsterdam have their own health departments and staffs. Other local authorities use the services of the staff of the Central Board of Health.

Hospital Services

In 1964, British Guiana had 202 hospitals and institutions for in-patient care with 3681 beds (equivalent to 5.9 beds per 1000 population), distributed as follows:

¹ Now an independent State under the name Guyana.

Category and number	Number of beds
General hospitals	13
Rural hospitals	12
Medical centres	173
Tuberculosis unit	1
Psychiatric hospital	1
Rehabilitation hospital	1
Leprosarium	1
	354

Out-patient services were provided at 16 hospital out-patient departments, 33 health centres, eight dispensaries, four medical aid posts and ten mobile health units.

Medical and Allied Personnel

In 1963, 233 doctors were registered in British Guiana. The doctor/population ratio was thus one to 2600. There were also:

Dentists	2
Midwives	228
Fully qualified nurses	144
Veterinarians	8
Sanitary engineer	1
Sanitary inspectors	59
X-ray technicians	5

Communicable Disease Control

British Guiana has embarked on an antimalaria programme in the interior areas of the territory with a view to achieving total eradication. Two sectors in the north-west district of about 30 000 square miles and with a total population of 30 000 have been free from malaria for nearly three years—a result achieved entirely by control by chloroquinized salt. A malaria outbreak occurred in 1962 near the Brazilian border, after which DDT house spraying was introduced in the border areas. It is expected that DDT spraying on Brazilian territory along the frontier will help to control the disease. Medicated salt has been issued free of charge to the inhabitants of the border district since 1964. A chloroquine-resistant strain of *Plasmodium falciparum* has been met with in one area. The inhabited coastlands, which had been free from *Aedes aegypti* for several years, were found to be reinfested in 1962. A control campaign, assisted by PASB and WHO, was started. Preliminary spraying operations were introduced in 1964 and resulted in the reduction of the *A. aegypti* index from 33 per cent. to 16 per cent. in the city of Georgetown.

The tuberculosis incidence rate declined from 37.4 per 100 000 in 1958 to 30.5 in 1963 and the tuberculosis mortality rate from 14.2 per 100 000 to 7.1 during the same period. Case-finding, tuberculin tests and BCG vaccination are the main control measures employed by the health authorities.

The total number of leprosy cases on the register up to the end of 1964 was 1207, representing a prevalence rate of 1.9 per 1000 population. Case-finding work is carried out at skin clinics held at all health centres and through annual surveys of schoolchildren in all elementary schools in the territory.

The first outbreak of paralytic poliomyelitis occurred in 1957, with 100 cases. As a preventive measure a mass vaccination campaign was commenced early in 1960. A new epidemic outbreak was recorded at the end of 1962. By the middle of 1963 about 90 per cent. of the total child population from three months to six years of age had had Sabin oral vaccine.

In 1961 British Guiana and the United States of America agreed to operate and finance jointly a filariasis control project. Intensive entomological and parasitological work was initiated in 1961 in various areas to determine the existing infection and infectivity rates in the vector.

Specialized Units

In 1964, British Guiana had 165 maternal and child health centres, a school health service, seven dental health units, four psychiatric out-patient clinics, two tuberculosis clinics, a leprosy clinic and five public health laboratories.

Environmental Sanitation

In 1964, of the total population of the territory, 337 000 had water piped to their dwellings or obtained it from public fountains; 105 000 inhabitants had sewage treatment facilities and 65 000 had individual installations.

Major Public Health Problems

The major public health problem is the resurgence of *Aedes aegypti* breeding in the coastlands. Gastro-enteritis and colitis are common causes of mortality, more especially in children under five years of age. Typhoid fever also causes concern. Dietary deficiencies are common. Protein malnutrition and B-complex vitamin deficiencies are often linked with the comparatively high incidence of respiratory infection and gastro-enteritis among infants.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade British Guiana became self-governing. Whereas previously a colonial secretary

was responsible for the administration of the services, under the new system political representatives with ministerial status are in charge of the various departments of the Government.

National Health Planning

During the period under review an integrated health service programme was initiated in the Ministry of Health and Housing, involving the assistance of UNICEF and WHO. This plan aims *inter alia* at the following: the reorganization of the basic structure of the health services at all levels and the extension of these services at the regional and local levels; the integration of all existing health services, both preventive and curative, within an organized plan of action; the training of health personnel, the improvement and extension of existing facilities for communicable disease control, environmental sanitation, statistical services and health education.

Medical and Public Health Research

A controlled field trial of acetone-dried and inactivated, and heat-phenol-inactivated typhoid vaccines was carried out in British Guiana from 1960 to 1964. The study is being continued to determine the duration of effectiveness of both vaccines. Both vaccines are effective but the superiority of the acetone-dried vaccine is still marked.

Government Health Expenditure

In 1963 the total general government consumption expenditure amounted to WI \$36.2 million, of which WI \$9.4 million (i.e., 25.7 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of WI \$15.3 per head on these services as compared with WI \$10.1 in 1960. The Ministry of Works and Hydraulics allocated WI \$103 000 on current account and WI \$378 000 on capital account for the provision and expansion of rural water supplies.

BRITISH HONDURAS

Population and Other Statistics

At the last census, taken in 1960, the population of British Honduras was 90 121. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	94 236	96 340	99 804	102 875
Number of live births	4 244	4 461	4 783	4 568
Birth rate (per 1000 population)	45.0	46.3	47.9	44.4
Number of deaths	708	853	712	729
Death rate (per 1000 population)	7.5	8.9	7.1	7.1
Natural increase (per cent.)	3.75	3.74	3.95	3.73
Number of deaths, 1-4 years	91	111	82	90
Number of infant deaths	232	310	250	247
Infant mortality rate (per 1000 live births)	54.7	69.5	52.3	54.1
Number of maternal deaths	13	2	5	0
Maternal mortality rate (per 1000 live births)	3.1	0.4	1.0	0

Of the 729 deaths recorded in 1964, the main causes were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (147), congenital malformations, birth injuries, post-natal asphyxia and atelectasis and other diseases peculiar to early infancy and immaturity (64), senility without mention of psychosis, ill-defined and unknown causes (55), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (55), vascular lesions affecting the central nervous system (52), malignant neoplasms (51), pneumonia (43), avitaminoses and other deficiency states (13), tuberculosis, all forms (12).

In 1964, the communicable diseases most frequently notified were: syphilis, new cases (796), dysentery, all forms (273), tuberculosis, new cases (74), measles (50), malaria, new cases (35), typhoid and paratyphoid fevers (6), scarlet fever (3).

Organization of the Public Health Services

Under the new constitution promulgated in 1964 when the territory attained self-government, the Minister of Health is responsible for all the medical and health services of the territory. He is advised by a chief medical officer who is responsible for implementing the government policies and for the efficient functioning of the services. As curative and preventive services are totally integrated, the Chief Medical Officer is also senior health officer. Two medical officers of health are responsible to him for the preventive services. In the districts, the medical officers in charge of hospitals are also responsible for the supervision of the preventive services at district level.

Hospital Services

In 1963, hospital accommodation was provided in seven government general hospitals with 261 beds and in a private general hospital with 13 beds, a tuberculosis hospital with 52 beds and a psychiatric hospital with 122 beds. Additional medical care facilities were available in a home for the infirm with 58 beds.

There were altogether 506 beds, equivalent to 5.1 beds per 1000 population. Government hospitals recorded 6942 admissions.

Out-patient services were provided in 1964 in eight hospital out-patient departments and 26 health centres, where 69 997 attendances were made.

Medical and Allied Personnel

During 1963, 27 doctors were working in British Honduras. This is equivalent to one doctor for every 3700 inhabitants. In 1964, other health personnel included:

Dentists	3
Pharmacists	2
Fully qualified midwives	66
Assistant midwives	2
Traditional birth attendants	132
Fully qualified nurses	85
Fully qualified nurses with midwifery qualifications	50
Nursing auxiliaries and aides	22
Sanitary engineer	1
Sanitary Inspectors	14
Laboratory technicians	8
X-ray technicians	5
Dispensers	19
Health educators	2

Communicable Disease Control and Immunization Services

The malaria eradication programme, which is now in the consolidation phase, has reduced the incidence of malaria. A mass treatment project is planned to eliminate a small residual focus which persists in the northern part of the territory. An active case-finding programme is conducted by the tuberculosis service. An increase in the incidence of syphilis has been noticed. Specialized diagnostic and treatment clinics where free treatment is given are held weekly to deal with this disease. Thanks to a vigorous and continuous immunization programme the incidence of the communicable diseases of childhood is kept under control. No cases of smallpox have been reported for the past 25 years. Investigations have shown that rabies can be found in certain species of wild life in the country. A rabies control programme has been initiated, including annual mass vaccination of kept dogs and extermination of stray dogs in urban areas. No human cases have occurred so far.

The following immunization procedures were carried out in 1963:

Diphtheria, whooping-cough and tetanus	8 911
Smallpox	8 306
BCG	7 140
Typhoid and paratyphoid fevers	3 042
Influenza	2 774
Poliomyelitis	1 974
Tetanus	1 080

Specialized Units

In 1964, maternal and child welfare services were based on 26 pre-natal centres and 107 child health units, where 3842 pregnant women and 3705 children under one year of age received services. Domiciliary care was given to 1456 pregnant women, 1814 children under one year and 1692 pre-school children. A total of 2343 deliveries (51 per cent. of all births) were attended by a doctor or qualified midwife. Other specialized units included a dental health unit, a tuberculosis unit, a venereal disease clinic and a diabetic clinic.

Major Public Health Problems

The main health problems in British Honduras are diseases of the gastro-intestinal tract and of the respiratory tract, and malnutrition. Gastro-enteritis in infants is responsible for approximately 25 per cent. of the infant deaths annually. Deaths from all gastro-intestinal diseases account for about 12 per cent. of the deaths from all causes. It is hoped that improved public water supplies and sewage disposal systems will contribute to controlling these diseases. Diseases of the respiratory tract and virus diseases come next in importance. Improved housing conditions are needed to combat these infections. Although there have been considerable rebuilding activities following the devastations of hurricane "Hattie" in 1961, overcrowding is still a problem, especially in urban areas. Malnutrition caused by shortage of protein and vitamins is frequently seen in the territory, especially in pre-school children and schoolchildren.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The present seven-year development plan, which aims at substantial improvements in the economy of the territory by 1970, places particular emphasis on developing an agriculture-based economy assisted by small industries. Water supply systems in urban areas have been developed and a water provision and sewage disposal programme for rural areas is now in progress. The major social development during the decade has been the initiation of the "village council" system in rural areas. These village councils are the bodies which initiate projects and through which development programmes are brought to rural communities.

National Health Planning

The seven-year development plan includes provision for the improvement and expansion of medical and health services. In the main the plan provides for an

increase in the number of hospital beds, a new tuberculosis sanatorium and mental hospital and a new infirmary for the aged and chronically ill, a public health laboratory, the expansion of the home delivery service to provide better maternity care, additional health centres to extend maternal and child health services in rural areas, and improved nurse-training facilities. The environmental control services are to receive special attention.

The pilot project which provided for the construction of approximately 1000 latrines and 50 wells in rural areas had been almost completed by 1964, and expansion of the project to other areas was being planned. A programme to provide public water supplies in urban areas was being pursued. Three of the seven urban areas had already been provided with some form of water system and one was under construction in another township.

International Collaboration

British Honduras collaborates in health matters with Honduras, Jamaica and the United States of America. It also receives assistance from specialized agencies, particularly from UNICEF and WHO.

Government Health Expenditure

In 1964, the total general government expenditure on current account was BH \$8 859 000, of which BH \$934 000 (i.e., 10.5 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of BH \$9.1 per head on these services, as compared with BH \$6.6 in 1957. A further sum of BH \$140 000 was spent on capital account for the improvement and expansion of health facilities.

CANADA

Population and Other Statistics

At the last census, taken on 1 June 1961, the population of Canada was 18 238 247. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	18 269 000	18 600 000	18 928 000	19 237 000
Number of live births	475 700	469 693	465 767	452 915
Birth rate (per 1000 population)	26.0	25.3	24.6	23.5
Number of deaths	140 985	143 699	147 367	145 850
Death rate (per 1000 population)	7.7	7.7	7.8	7.6
Natural Increase (per cent.)	1.83	1.76	1.68	1.59
Number of deaths, 1-4 years	1 998	2 045	1 962	1 886
Death rate, 1-4 years (per 1000 population at risk)	11.15	11.23	10.74	10.29
Number of infant deaths	12 940	12 941	12 270	11 169
Infant mortality rate (per 1000 live births)	27.2	27.6	26.3	24.7
Number of maternal deaths	219	191	165	137
Maternal mortality rate (per 1000 live births)	0.46	0.41	0.35	0.30

Of the 145 850 deaths recorded in 1964 the most important causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (48 597), malignant neoplasms (25 637), vascular lesions affecting the central nervous system (15 030), accidents (10 564, including 4862 in motor-vehicle accidents), congenital malformations and diseases peculiar to early infancy and immaturity (6297), pneumonia (4962), hypertension (3462), diabetes mellitus (2488), suicide and self-inflicted injuries (1586). There were also 670 deaths from tuberculosis (all forms), and 300 from influenza.

The communicable diseases most frequently notified in 1964 were: gonorrhoea (20 628 cases), scarlet fever and streptococcal sore throat (10 605), infectious hepatitis (8218), whooping-cough (4844), tuberculosis, all forms (4541), dysentery, all forms (3891), syphilis, new cases (2771); there were also 195 notifications of typhoid and paratyphoid fevers, 115 of meningococcal infections, 25 of diphtheria and 19 of paralytic poliomyelitis.

Organization of the Public Health Services

In Canada, the constitutional responsibilities for health rest at three levels; those of the central Government, the ten provinces and the local boards of health. At the centre, the health and welfare functions of the Government are combined in the Department of National Health and Welfare under a minister, who is a member of the Cabinet.

The health branch of the Department is in effect the Federal Agency for Health. It is responsible for the implementation of federal health programmes, some of which it carries out directly, but the majority pass through the provincial governments, local boards and voluntary health organizations. It has also the important tasks of giving leadership in the national health field, and of co-operating in international health activities. As its principal advisory body, the Department has the Dominion Council of Health which, with its technical committees, assists in the co-ordination of federal and provincial programmes and in health planning and evaluation.

The health branch has a tripartite structure. Its three divisions are described respectively as the Medical

Services, the Health Services and the Food and Drug Directorates.

The Medical Services Directorate provides comprehensive medical care to Indians, Eskimos and the inhabitants of the Northern Territories. It is also in charge of the quarantine service, and provides medical services to a number of special groups of the population, including civil servants, mariners and immigrants.

The Health Services Directorate is mainly concerned in stimulating the strengthening of health services throughout the country by means of the National Health Grants Programme. Through this channel it also supports hospital construction, the training of professional and technical personnel, and public health research. In addition it has important functions relating to the National Hospital Insurance Scheme, national public health and virus laboratories, occupational health, radiation protection and international health activities.

The Food and Drugs Directorate administers acts designed to control the safety, purity and quality as well as the labelling and advertising of all foods, drugs, cosmetics and therapeutic devices manufactured or sold in Canada through its laboratories and the field service which it maintains. It also operates a national poison control centre, and provides an information retrieval service, as well as conducting considerable research on standards and methods of analysis for new products.

The ten provincial governments follow with appropriate modifications the central pattern of administration. There is usually a department of health (with or without an associated welfare branch) and a minister at its head. The provincial governments are responsible either directly or through the local health boards, units or departments for the major health services including vital and health statistics, hospitals, communicable disease control, environmental sanitation, maternity and child care services, mental health, nursing services, nutrition, laboratory services, etc. They are associated with the central Government in the implementation of the Hospital Insurance and Diagnostic Services Act of 1957.

At local level the basic health services, for environmental sanitation, communicable disease control, maternal, infant and school health, health centres, etc., are managed by a local board of health, which has as its staff a medical officer of health, sanitary inspectors and public health nurses and other personnel. At the end of 1963 there were 223 public health units or departments, each with a full-time medical officer of health at its head. (There were also certain health departments where the medical officer of health was employed part-time.) Of the 223 units, 193 were local health units with a total staff of 2937 persons serving a population of 9.7 million. There were also 30 city

health departments employing 2373 health personnel and covering six million people.

The role of the voluntary health organizations is well recognized in Canada. They sponsor important supporting services concerned with specific diseases or with home nursing. They are particularly active in health education.

Hospital Services

On 1 January 1963 there were 1293 public and private hospitals in Canada with a total of 197 318 beds, which is equivalent to 10.4 beds per 1000 population.

To these hospital totals there should be added 1631 nursing homes and other institutions with a total of 57 874 beds. With the addition of these beds to the hospital quota, there was an overall provision of hospital and institutional beds of 13.5 beds per 1000 of the Canadian population.

The distribution of the 1293 hospitals and 197 318 hospital beds was as follows:

Category and number	Number of beds
General hospitals	1 010
Tuberculosis hospitals	42
Mental hospitals and institutions .	77
Eye hospitals	52
Convalescent hospitals	79
Other specialized hospitals	33
	105 416
	7 350
	67 430
	1 161
	10 689
	5 272

The 33 specialized hospitals included hospitals for paediatrics, orthopaedics, cancer, infectious diseases, leprosy and epilepsy. The hospitals, excluding the mental hospitals, the epileptic colonies and the leprosy hospital, admitted 2 927 541 patients in 1962. The 77 mental hospitals and institutions with 67 430 beds, equivalent to 34 per cent. of the total hospital bed complement, admitted 65 168 patients in the same period.

Medical and Allied Personnel and Training Facilities

In 1962/63, there were approximately 21 000 doctors actively practising in Canada, giving a doctor/population ratio of one to 900. In 1964, there were 6103 dentists, including those in the armed forces and retired practitioners. Other health personnel in 1962/63 included:

Pharmacists	8 322
Graduate nurses*	50 730
Sanitary engineers	135
Sanitary inspectors	1 275
Physical therapists	968
Occupational therapists	641
Laboratory technicians	4 334
X-ray technicians	2 183
Dietitians	924
Medical records librarians	890

* In 1961, nursing personnel of other grades totalled 62 553.

There have been only relatively minor changes in the already extensive facilities for training professional and technical personnel in the health field, but certain additions will be necessary to implement the recommendations of the Royal Commission on Health Services. However, pending the major planning operations which will be required to meet these recommendations, it has been considered advisable to provide training courses in a limited number of special fields where deficiencies have arisen, largely because of modern developments in medicine and the social sciences. Such deficiencies are apparent in community health work, psychology, speech therapy and audiology, physical medicine, prosthetics, and particularly in ophthalmology. Training is being provided at both undergraduate and post-graduate level.

Communicable Disease Control and Immunization Services

The Medical Services Directorate of the Department of National Health and Welfare administers the International Sanitary Regulations and has also established an elaborate screening procedure for ensuring the health of immigrants. This procedure has been applied particularly as regards tuberculosis, where it has proved highly successful, and is now being applied to other conditions, e.g., mental disorders.

Within Canada, the control of both the communicable and the chronic degenerative diseases is a responsibility of the provincial governments, but there is a considerable degree of assistance both by way of advice and the provision of immunizing materials from the centre, which has also a co-ordinating effect. In the field of the communicable diseases, there have been three main areas of activity, namely poliomyelitis, tuberculosis and the venereal diseases. Poliomyelitis reached its maximum incidence in 1953, with a paralytic notification rate of 28.3 per 100 000 population. Salk vaccine was introduced in 1955, when a mass campaign was initiated. Since that time no fewer than 55 million doses of the vaccine have been distributed to the provinces. There was a recurrence of the disease in 1959, when the incidence again rose to 10.8 per 100 000. Trials of the Sabin oral vaccine were instituted in 1960, and since that date six million doses of a trivalent live vaccine have been administered. As the result of these activities paralytic poliomyelitis can be said to have been virtually eliminated in Canada. In 1964 the notifications and deaths were the lowest on record, namely 21 cases and two deaths.

As in many other countries, the death rate from tuberculosis in Canada has declined rapidly in recent years, particularly since the introduction of the anti-tuberculosis drugs. Active case-finding programmes,

which include surveys of special groups, have been instituted. For the newly discovered case there follows a period of about six months' hospitalization. Thereafter domiciliary supervision commences, while drug treatment is continued as long as is considered necessary. BCG is used as a general protective measure only in two provinces, but is available everywhere to individuals at special risk. The tuberculosis (all forms) death rate has declined from 7.1 per 100 000 in 1957 to 4.0 in 1963. The notification rate for new and active cases, though also lower, is not falling at the same rate. It was 40.1 per 100 000 in 1957, as compared with 30.2 in 1963.

Similarly to the trend in other countries, the reported incidence of syphilis and gonorrhoea declined subsequent to the end of the Second World War and the introduction of penicillin in treatment. However, since 1959, the reported incidence of gonorrhoea has risen every year, reaching the high level of 105.0 per 100 000 population in 1964. The position with regard to syphilis is very similar. In 1960, 2168 new cases of syphilis were reported, equivalent to a rate of 12.2 per 100 000. In 1964 the total was 2771, and the rate 14.5.

Chronic and Degenerative Diseases

In the case of the chronic and degenerative diseases and disabilities special attention is being given to blindness, cancer, rheumatism and alcoholism, and the interest in the prevention and treatment of these and other similar chronic conditions is developing. Federal grants are being provided to an increasing extent for projects concerned with the various aspects of blindness and its control. There are now 18 officially supported glaucoma clinics in various parts of the country, and other projects, such as retinal detachment clinics, have been organized. Increasing attention is being paid to the provision of ophthalmic services of all kinds for children. The successful fifteen-year cervical cancer screening project in British Columbia covered about 53 per cent. of the adult female population between 1949 and 1963, and the incidence of cervical cancer was reduced from 28.4 per 100 000 to 15.5 by 1962. Special concern for the care of arthritis and rheumatism patients has been shown by the establishment of five hospitals for these conditions. Voluntary agencies and provincial foundations have been active in providing treatment facilities for alcoholics, but the great mass of those affected still remain unrecognized or untreated. Public education on the subject is being intensified.

Specialized Units

The National Health Grants Programme, and especially the maternal health grants, have materially assisted the extension of the maternal and child health

services. Following the thalidomide episode, attention has been given to the prevention of congenital abnormalities and to the early recognition and rehabilitation of children suffering from these and other defects. As regards the maternity services, 442 859 births took place in hospital in Canada (excluding Newfoundland) during 1963. This total represents 98.3 per cent. of all deliveries.

Medical rehabilitation services were provided in 52 independent centres, where 9592 in-patients and 27 287 out-patients were treated in 1963. Similar services were also available at the rehabilitation or physical medicine departments of 65 hospitals.

There were 45 public laboratories in 1963 carrying out a large range of examinations. Owing to the participation of the hospital laboratories in this work, and the absence of a uniform reporting system, it is not possible to give either a total statement of the work done or a classification of the examinations undertaken.

Major Public Health Problems

The Royal Commission on Health Services, reviewing the present position of Canada's health problems, summarized its views in the following words:

In brief...we have been successful in controlling the most deadly communicable diseases including tuberculosis. The chronic diseases—cancer, heart disease, psychiatric disorders, diseases of the nervous system and diabetes—have shown little or no improvement and in many cases increases, as have accidents, allergies, arthritis, and the often minor but frequent diseases of the respiratory and digestive systems.¹

To this list can be added blindness, maternal, post-natal and infant mortality, and physical and mental abnormalities detected in early childhood. There is also an excessive loss of infant and young adult life in the special ethnic groups of Indians and Eskimos. Tuberculosis, though greatly reduced, has an incidence amongst them ten times greater than the national experience. But in these communities social and economic considerations are also major factors in the health situation, and medical measures are not the only remedy. Although the influence of dietary inadequacy is not so dramatically demonstrated in Canada, where there is an abundant food supply, as it is in some less favoured parts of the world, nutritional problems do exist. They occur in some isolated communities, and amongst certain vulnerable individuals, such as elderly men or women living alone. All the provincial health departments are cognizant of these

circumstances and have provided staff and facilities for their investigation and prevention.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The health situation of Canada has been influenced beneficially during the past decade by two major governmental actions. The first of these was the initiation of the National Health Grants Programme in 1948; the second the passing of the Hospital Insurance and Diagnostic Services Act in April 1957. In addition, there was the implementation of the recommendations of the Royal Commission on Health Services which was appointed in June 1961, and reported in mid-1964, which both supplement and complement the achievements of the two earlier actions. The system of national health grants has been modified in detail from time to time since its introduction, but its animating and operating principles are unchanged. Under this programme grants are made available to the provinces for the expansion or creation of health services in the following fields: hospital construction, professional training, mental health, tuberculosis, public health research, general public health, cancer, medical rehabilitation and maternal and child health. Within these broad headings, projects for the control of radiation hazards, home care services, day and night hospitals for certain types of psychiatric patients, and clinics for the early detection of cancer have all been developed. Federal support for the scheme of national health grants has increased steadily over the years and in 1962/63 amounted to approximately Can \$30.5 million for general grants and Can \$20 million for hospital construction. Over the sixteen-year period 1948-1963 a total sum of over Can \$645 million has been made available, of which Can \$498 million or 77 per cent. have actually been expended.

Under the Hospital Insurance and Diagnostic Services Act of 1957, the Minister is empowered to pay to the provincial governments certain sums in return for an agreement that specified in-patient services shall be made available to all recipients on uniform terms and conditions and in accordance with agreed standards of provision. These services include all those ordinarily provided in hospital—accommodation, food, nursing, drugs, operating-room facilities, radiological and other diagnostic services, and attendance by the paid hospital staff. The provision of in-patient services along these lines has been undertaken by all provinces. Comparable out-patient services can also be provided under the agreements, but not all provinces have found themselves in a position to make such services generally available. Provincial governments must find their share of the cost of these services,

¹ Canada, Royal Commission on Health Services (1964), *Report*, Ottawa, Duhamel, vol I, 157.

and do so either from general revenue, or by the application of a special annual hospitalization premium, or through special taxes, e.g., on sales or property. The federal contribution is on a percentage basis and can vary from one province to another. The cost to the Federal Government in 1963/64 was Can \$392 million. In 1964 approximately 99.1 per cent. of the population of Canada were covered by agreements made under the Act.

The terms of reference of the Royal Commission were broadly drawn. In brief they were:

To inquire into and report upon the existing facilities and the future need for health services for the people of Canada and the resources to provide such services, and to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that the best possible health care is available to all Canadians ...¹

In the preamble to their recommendations, the Commissioners stated that the evidence before them had demonstrated "the paradox of our age ... the enormous gap between our scientific knowledge and skills on the one hand and our organizations and financial arrangements to apply them". The Commission recommended that the gap be closed, and proposed a "Health Charter for Canadians". It stated that "the achievement of the highest possible health standards for all our people must become a primary objective of national policy".² It added that "this objective can best be achieved through a comprehensive, universal health services programme" which would be implemented in accordance with Canada's constitutional arrangements, based upon freedom of choice and free and self-governing professions and institutions and financed through pre-payment arrangements. Two other provisos were made. First that improvements in health service provision must be supplemented by measures relating to housing, nutrition, cigarette smoking, environmental pollution, accidents, drug addiction, etc., and secondly, that representative health planning agencies should be developed at every level of federal, provincial and municipal government. The broad approach to the establishment and maintenance of these services was that the Federal Government should enter into agreements with the provincial governments to provide grants on a formula basis. This would assist them to introduce and operate a programme of personal health services providing medical and dental care, prescription

drugs, optical and prosthetic services and home care. There should also be a complete reorganization of the mental health services, which would abolish all differences between the provision of treatment for physical and mental illness.

The implications of the implementation of this programme are considered under "National Health Planning".

National Health Planning

Every health plan on a national basis raises questions of manpower, the provision of facilities of various kinds and of finance. These questions were not evaded by the Royal Commission, but they were answered in broad terms, leaving their elaboration and the detailed planning to be carried out later by other bodies. Nevertheless the projections which the Royal Commission have carefully prepared are on record under the three main heads.

The manpower projections relate particularly to physicians, dentists, nurses and dental auxiliaries. It is considered that, between 1961 and 1971, 7100 physicians must be added to the existing supply, which will provide, after migration, retirement and other losses, a net increase of 5340 physicians. By 1991 that net increase must have reached a total of at least 19 350. The requirements for dentists are less, but they amount to a net increase of 1270 dentists by 1971, and of 8550 by 1991. For nurses there are minimum and maximum projections, but only for the period 1961-1971. The minimum requirement is 20 000 nurses, the maximum is approximately 42 000. A children's dental programme is scheduled to begin in 1968, and between that year and 1971 an additional 3000 dental auxiliaries must be available in order to implement it. By 1976 this number must increase to about 9000.

The provision of this personnel postulates increases in training facilities. For the increased supply of doctors 496 additional places must be found by the expansion of existing medical schools and the establishment of four new medical schools. These are the requirements for the period 1961-1971, but by 1991 the number of new places should be more than 1000. Between 1961 and 1971 an additional 100 places must be provided by the expansion of existing dental schools. The requirements for 1961-1991 are 300 additional places which will necessitate the construction of four new dental schools. The training of dental auxiliaries is even more pressing, and from seven to ten new schools will be required before 1968.

In addition to the foregoing the projection for hospital beds envisages the provision of an additional 60 000 between 1961 and 1971. Of this total, 40 000 will be required to meet the needs of the increasing

¹ Canada, Royal Commission on Health Services (1964), *Report*, Ottawa, Duhamel, vol I (preliminary note).

² Canada, Royal Commission on Health Services (1964), *Report*, Ottawa, Duhamel, vol I, 11.

population and of the reorganized mental care programme. There are at present 20 000 beds in obsolete hospitals which it is proposed to replace.

The financial implications of this entire programme are considerable but, in the view of the Commission they are not onerous. Assuming the implementation of the Royal Commission's recommendations and the continuation and normal development of the existing services, public health expenditure would rise from Can \$2007 million in 1961 to Can \$4407 million in 1971. These amounts do not include expenditure in research or grants-in-aid for education. If these are added, the grand total in 1971 would be Can \$4481.

In the ordinary sense in which the term national health planning is used, these projections and estimates do not constitute a national health plan, which is an integral part of a plan for national economic and social development. However, together with the abundant data on existing installations, services and personnel collected by the Royal Commission and its clear statement of objectives and priorities, they provide the essential material for health planning on a national scale in Canada.

Medical and Public Health Research

The main sources from which medical, dental and public health research in Canada derive their support are the federal and provincial governments, voluntary organizations and foundations and the National Institutes of Health of the United States of America. In addition the pharmaceutical industry carries out a considerable amount of research in its own fields.

A Medical Research Council was established in 1960, but its functions are largely advisory, though it also administers funds allocated to it for the support of research. Certain funds are placed at its disposal annually by the Government, and these are supplemented from other sources. The Council does not maintain any research institute or unit of its own, nor does it employ scientific and technical staff for research projects. Its interests are broad and not limited to any particular branch of the medical sciences. Its main field of action lies in the awarding of grants-in-aid. These are available for special research projects, for fellowships for trainees in research, and for stipends for experienced investigators working in university departments. Its range of interest also extends to the dental field, for which there is a special associate committee.

The Department of National Health and Welfare has both extra-mural and intra-mural programmes of research. The extra-mural programme is operated through grants-in-aid to universities, hospitals and research institutes. The major areas in which research is supported are those concerned with the operation of the health services, the control of communicable diseases and medico-social problems. But clinical research on arthritis, cardiovascular disease, nervous diseases, ophthalmology, etc., is also supported. Research for the specific purposes of the Department is carried out largely in its laboratories for food and drugs, hygiene and radiation protection, but the Research and Statistics Division is also active.

In 1964-65 a total sum of approximately Can \$13.4 million will be expended by the Department on these various research activities, involving 1386 projects, both extra- and intra-mural.

International Collaboration

In addition to discharging its obligations under the International Sanitary Regulations, Canada has also agreements and maintains liaison with the United States of America regarding a number of common problems and interests. These include studies concerned with the pollution of boundary waters and of the atmosphere, and questions relating to itinerant labour and immigration control.

Canada has also been active in its co-operation with the World Health Organization and the other specialized agencies of the United Nations system which operate programmes with a health component. Financial and technical assistance has been given to developing countries under the Colombo Plan, and by means of bilateral aid arrangements. During 1963 more than 200 persons were being trained in Canada in a number of disciplines under these programmes.

Government Health Expenditure

In the fiscal year 1963/64 general government expenditure (current and capital) on health services was Can \$1365 million. This is equivalent to an expenditure of approximately Can \$71 per head on these services. During the four years covered by this report, the percentage of the total general government expenditure on goods and services which was devoted to the provision of health services steadily increased from 13.7 per cent. in 1960/61 to 16.7 per cent. in 1963/64.

CANAL ZONE

Population and Other Statistics

At the last census, taken in April 1960, the population of the Canal Zone was 42 122. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	43 271	47 200	50 177	53 900
Number of live births	781	735	645	694
Birth rate (per 1000 population)	18.0	15.6	12.9	12.9
Number of deaths	122	126	130	155
Death rate (per 1000 population)	2.8	2.7	2.6	2.9
Natural increase (per cent.)	1.52	1.29	1.03	1.00
Number of infant deaths	19	15	6	10
Infant mortality rate (per 1000 live births)	24.3	20.4	9.3	14.4

Of the 155 deaths recorded in 1964, the main causes were: pneumonia (22), arteriosclerotic and degenerative heart diseases (21), malignant neoplasms (19), vascular lesions affecting the central nervous system (19), accidents (15, including seven in motor-vehicle accidents).

The communicable diseases most frequently notified in 1964 were: gonorrhoea (280), syphilis, new cases (69), tuberculosis, all forms, new cases (18), infectious hepatitis (13), amoebic dysentery (9), malaria, new cases (9).

Hospital Services

In 1963 the Canal Zone had four hospitals and in-patient care establishments, providing 985 beds (equivalent to a bed/population ratio of 19.6 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	565
Psychiatric hospital	300
Leprosarium	120

In 1963, 13 139 patients were admitted to the hospitals other than the leprosarium; they received 164 091 days of in-patient care.

Out-patient facilities were provided at 30 hospital out-patient departments, six health centres and one medical aid post. These establishments recorded altogether 272 669 attendances during the year.

Medical and Allied Personnel

In 1963, 94 physicians were working in government service. The doctor/population ratio was thus one to 530. Other health personnel included:

Dentists	16
Pharmacists	8
Fully qualified nurses	200
Nursing assistants and nursing aides	344
Veterinarians	4
Sanitary engineer	1
Sanitary Inspectors	7
Physical therapists	4
Laboratory technicians	49
X-ray technicians	11
Dental hygienist	1
Other scientific personnel	131

Immunization Services

In 1963 the following immunization procedures were carried out:

Poliomyelitis (Sabin vaccine)	140 513
Poliomyelitis (Salk vaccine)	4 121
Diphtheria, tetanus and whooping-cough	28 014
Smallpox	18 615
Typhoid and paratyphoid fevers	14 664
Cholera	10 049
Yellow fever	3 787
Plague	906
Epidemic typhus	698
BCG	598

Specialized Units

In 1964, maternal and child health services were based on six centres, which were attended by 1946 infants under one year and 1578 children aged between one and five years. Domiciliary care was given to 367 infants and 33 children aged between one and five years. All deliveries were conducted by a doctor or qualified midwife. The total school population was under medical and health supervision at five school health centres. One dental health unit gave treatment to 9132 patients. The psychiatric out-patient clinic was attended by 2034 new patients.

Environmental Sanitation

In 1964, 50 000 inhabitants—nearly 93 per cent. of the total population—had piped water to their dwellings; 40 000 were served by sewerage systems and 10 000 had also sewage treatment facilities.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure on health services amounted to US \$9 831 000. This was equivalent to an expenditure of US \$189 per head on these services, as compared with US \$181 per head in 1961/62. A further sum of US \$195 000 was spent on capital account for the improvement and expansion of health facilities.

CAYMAN ISLANDS

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table. As the registration of births and deaths is irregular, the figures given must be regarded as approximate.

	1961	1962	1963	1964
Mean population	9 012	8 677	8 763	8 853
Number of live births	277	290	303	270
Birth rate (per 1000 population)	30.7	33.4	34.6	30.5
Number of deaths	68	51	61	73
Death rate (per 1000 population)	7.5	5.9	7.0	8.2
Natural increase (per cent.)	2.32	2.75	2.76	2.23
Number of infant deaths	11	7	7	7
Infant mortality rate (per 1000 live births)	39.7	24.1	23.1	25.9

Of the 73 deaths reported in 1964 the main causes were: heart disease, vascular lesions of the central nervous system, cancer, senility, accidents and violence.

Hospital Services

In 1964, hospital accommodation was provided at the government hospital in Georgetown, which has a capacity of 34 beds. The total number of admissions during the year was 800.

A total of 6810 attendances were made at the out-patient department of this hospital. Out-patient care is also provided at six health centres, four of them situated in Grand Cayman and two in Cayman Brac. The government medical officer pays monthly visits to each in turn.

Medical and Allied Personnel

In 1964 there were three doctors, one dentist, one traditional birth attendant, five nurses, four practical nurses and one sanitarian. All staff are, as a rule, trained in Jamaica, and registration there is a requirement for qualified nurses practising in the Cayman Islands.

Communicable Disease Control

As in previous years, gastro-enteritis continues to be a common cause for admission to the hospital and to

out-patient departments. It occurs mainly in infants and young children and is often the cause of malnutrition. Respiratory tract infections are also very common, particularly among infants and children under five years. No case of poliomyelitis occurred in 1964.

Chronic and Degenerative Diseases

The incidence of hypertension appears to be fairly high. Psychoneurosis is also frequently met with. It occurs in women and in some children. Bronchial asthma is fairly common. The alcohol consumption is high but alcoholism is not a problem.

The level of nutrition is on the whole good but many infants and young children suffer from protein deficiency and avitaminosis. Ignorance of food requirements and scarcity of fresh milk, fruit and vegetables are the main causes of this situation.

Specialized Units

A pre-natal clinic which is held weekly at Georgetown hospital has an average attendance of approximately 30. In 1964, 158 deliveries were institutional. Towards the end of the year, a weekly clinic for infants and young children was started at this hospital, where there is also a dental clinic. Periodic visits are paid to schools and to other islands by the government dental officer. Dental caries and periodontal diseases are the most prevalent conditions.

Environmental Sanitation

The general level of sanitation is high. Garbage disposal services now cover the capital, West Bay and Savannah area. "Fogging" with pesticides, oiling of swamps and clearing of shrubbery are also carried out by government services. There is no municipal water supply, but each house is supplied with fresh water collected into a cistern from roof catchments. Most of the houses are substantially built and supplied with water closets. There is no supervision of food handling and meat inspection. However, the incidence of food poisoning is low.

CHILE

Population and Other Statistics

At the last census, taken in November 1960, the population of Chile was 7 374 115. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 858 000	8 029 000	8 217 000	8 492 000
Number of live births	283 445	288 884	277 144	275 323
Birth rate (per 1000 population)	36.1	36.0	33.7	32.4
Number of deaths	91 348	94 874	98 293	94 058
Death rate (per 1000 population)	11.6	11.8	12.0	11.1
Natural increase (per cent.) .	2.45	2.42	2.17	2.13
Number of deaths, 1-4 years	6 734	7 376	6 795	7 155
Death rate, 1-4 years (per 1000 population at risk) .	7.1	7.5	6.8	7.0
Number of infant deaths .	31 505	33 105	30 737	31 444
Infant mortality rate (per 1000 live births)	111.2	114.6	110.9	114.2
Number of maternal deaths .	923	914	803	866
Maternal mortality rate (per 1000 live births)	3.3	3.2	2.9	3.1

Of the 94 058 deaths recorded in 1964 the main causes were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (14 426), pneumonia (14 028), malignant neoplasms (8560), accidents (6404, including 1282 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (6359), arteriosclerotic and degenerative heart disease (5588), vascular lesions affecting the central nervous system (4773), tuberculosis, all forms (3853), measles (3364), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (2743).

The communicable diseases most frequently notified in 1964 were: measles (35 941), influenza (9175), whooping-cough (5279), typhoid and paratyphoid fevers (4732), syphilis, new cases (3502), scarlet fever (2218), diphtheria (1196), gonorrhoea (902), infectious hepatitis (618), dysentery, all forms (422), poliomyelitis (363).

Organization of the Public Health Services

The national health service, which is under the control of the Ministry of Public Health, is responsible for public health activities covering the total population, and for medical care services for beneficiaries of social insurance schemes and for the indigent. These two groups constitute about 71 per cent. of the total population. The service is in the charge of a director-general, assisted by an advisory board composed of

representatives of workers and employers, of the Faculty of Medicine of the University of Chile, of the Colegio Medico and of the Government.

The country is divided into 13 health zones, each of which is sub-divided into health areas. In each of the health areas there is a chief medical officer assisted by a technical advisory board.

There is also a national medical service for employees, which provides preventive medicine services and limited medical care for civil servants, "white-collar" workers and their families. There is, furthermore, an accidents insurance fund which comes under the Ministry of Labour and which has its own medical services.

Hospital Services

In 1964, Chile had 376 hospitals, providing 37 169 beds (equivalent to a bed/population ratio of 4.3 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	242
Rural hospitals	110
Tuberculosis hospitals	9
Infectious diseases hospital	1
Paediatric hospitals	9
Psychiatric hospitals	4
Cancer hospital	1
	24 919
	3 878
	2 607
	149
	1 879
	3 628
	109

Out-patient care was provided in 1964 at 194 hospital out-patient departments, 303 polyclinics, 510 medical aid posts and 31 first aid posts.

Medical and Allied Personnel

In 1960, 4250 doctors were working in Chile. The doctor/population ratio was thus one to 1800. Other health personnel included:

Dentists	2 510
Pharmacists	2 100
Fully qualified midwives	918
Fully qualified nurses	1 570
Assistant nurses and auxiliaries	10 355
Veterinarians	429

Communicable Disease Control and Immunization Services

The control programme against measles envisages the progressive immunization of 80 per cent. of all children between eight months and five years of age. During the last decade the annual number of poliomyelitis cases varied between 500 and 700. Following massive vaccination campaigns the annual incidence of

this disease has been reduced. Smallpox is practically eradicated throughout the country. Although the tuberculosis mortality is decreasing, the morbidity rate remains fairly high. BCG vaccination is given as a routine in maternity units and child health centres.

The following immunization procedures were carried out in 1964:

Smallpox	1 482 113
Poliomyelitis	1 104 976
Diphtheria, whooping-cough and tetanus	884 076
Diphtheria.	477 829
BCG	289 636
Measles.	242 266
Typhoid and paratyphoid fevers	196 732

Specialized Units

Special attention is being given to the provision of maternity and child health care, particularly in rural areas. Much emphasis is placed on education of mothers in personal hygiene and infant feeding. In 1964, eight million kilograms of powdered milk were distributed. A school feeding programme has been started in the primary schools and will serve approximately 650 000 children. In 1964 the number of consultations given to pregnant women was 398 319; 3 609 707 consultations for children were recorded; 202 796 deliveries (73 per cent. of all deliveries) were attended by a doctor or qualified midwife. In the same year, 264 dental health units recorded over two million attendances. There were also eight psychiatric out-patient clinics and 118 public health laboratories.

Major Public Health Problems

The most important health problems include the high infant mortality, especially in agricultural areas, where it reaches 230 per 1000 live births; the lack of adequate environmental hygiene, water supply and waste disposal; malnutrition and the unequal distri-

bution of food among the various population sectors, and the high incidence of tuberculosis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The ten-year period 1955-1964 was marked by a continuous population increase of about 2.5 per cent. annually. Very rapid urbanization has been encouraged by better living and working conditions in urban centres and by improved transport facilities. This migration has created serious problems in the fields of environmental sanitation, nutrition and the provision of health services. On the other hand urbanization has resulted in a higher cultural level of the population, with a considerable reduction of the illiteracy rate. During the period under review a national ten-year economic development plan was prepared with particular emphasis on the economic conditions of the country. Included in this plan is a programme for the development and improvement of the housing situation of the working classes. Although strict measures have been taken by the Government against the persistent inflation, it reached 38.5 per cent. during the period 1963-1964. This inflationary process has had a marked influence upon the government expenditure on health services. With regard to these services, the ten-year period was characterized by the consolidation of the organizational structure and by the greater attention given to health protection through preventive measures.

International Collaboration

Chile has continued to collaborate with the neighbouring countries in the field of health, particularly in the control of communicable diseases. It has also participated in the activities of international agencies such as FAO, UNICEF and PAHO/WHO.

COLOMBIA

Population and Other Statistics

At the last census, taken in May 1951, the population of Colombia was 11 548 172 (including adjustment for under-enumeration estimated at 191 683). Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	14 442 580	14 768 510	15 097 640	15 434 090
Number of live births	626 801	650 561	665 287	674 825
Birth rate (per 1000 population)	43.4	44.1	44.1	43.7

	1961	1962	1963	1964
Number of deaths	175 612	177 208	176 898	175 349
Death rate (per 1000 population)	12.2	12.0	11.7	11.4
Natural Increase (per cent.)	3.12	3.21	3.24	3.23
Number of deaths, 1-4 years	30 352	29 970	30 327	30 422
Death rate, 1-4 years (per 1000 population at risk)	16.6	15.6	15.4	15.6
Number of infant deaths	56 178	58 265	58 695	56 190
Infant mortality rate (per 1000 live births)	89.6	89.6	88.2	83.3
Number of maternal deaths	1 475	1 509	1 636	1 712
Maternal mortality rate (per 1000 live births)	2.4	2.3	2.5	2.5

Of the 175 349 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (24 825), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (22 595), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (18 427), pneumonia (11 649), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (10 445), bronchitis (8592), malignant neoplasms (8496), all accidents (7590, including 2028 in motor-vehicle accidents), vascular lesions affecting the central nervous system (5182), homicide and operations of war (4459), avitaminoses and other deficiency states (4134).

The communicable diseases most frequently notified in 1964 were: influenza (52 972), gonorrhoea (41 972), measles (26 625), whooping-cough (26 497), malaria, new cases (20 340), typhoid and paratyphoid fevers (9905), poliomyelitis (621), diphtheria (545), meningo-coccal infections (392), leprosy (288), scarlet fever (240), yaws, new cases (225).

Organization of the Public Health Services

The health services in Colombia are organized on three levels: national, regional and local. At the national level, the Ministry of Public Health is responsible for the general planning of public health, the supervision, assessment, co-ordination, technical and administrative evaluation of health programmes, the co-ordination of health plans and programmes with the national economic and social development plan, and the planning, carrying-out and supervision of training of personnel for the public health service. At the regional level, several politico-administrative divisions have been created with a view to regionalizing the health services. These regional administrations are responsible for the health programmes within their areas. At the local level there are hospitals, health centres, medical aid posts and other health institutions. Health posts are associated with health centres for clinical purposes and the latter in their turn with hospitals.

Hospital Services

In 1963, Colombia had 572 hospitals and establishments for in-patient medical care, providing 46 822 beds—equivalent to 3.1 beds per 1000 population. Of these 572 establishments 423, providing 39 628 beds, were state-maintained. The total bed capacity of the country was distributed as follows:

Category and number	Number of beds
General hospitals	484
Tuberculosis hospitals	17
Maternity hospitals	31
Paediatric hospitals	16
Psychiatric hospitals	20
Cancer hospitals	2
Heart hospital	1
Hospital for rehabilitation	1
	97

In 1964, 4 843 704 out-patients were treated at 386 hospital out-patient departments, 583 health centres and 419 health posts.

Medical and Allied Personnel and Training Facilities

In 1963, Colombia had 7453 doctors. The doctor/population ratio was thus one to 2025. Other health personnel included:

Dentists	4 890
Pharmacists	1 213
Fully qualified nurses	900
Auxiliary nurses	3 084

The Ministry of Public Health has made arrangements with the University of Antioquia for the establishment of a school of public health on the basis of the department of preventive medicine and public health of the university. The Ministry of Public Health, in collaboration with the University of Antioquia, the Kellogg Foundation and PAHO/WHO, has established a department for preventive and social odontology in the university. Training of sanitary engineers is carried out at the faculty of engineering of the National University.

Communicable Disease Control and Immunization Services

The highest morbidity and mortality is caused by diarrhoeal diseases and infections of the respiratory system. Infections of the newborn, cardiovascular diseases and malignant neoplasms are also important. In 1961, new legislation on leprosy control provided for the integration of local leprosy services into the permanent health services, the prohibition of compulsory seclusion of leprosy patients and the construction of sanatoria. At the end of 1964, 15 130 leprosy patients were registered, of whom 80 per cent. were under treatment. The eradication of *Aedes aegypti* has been achieved throughout the country, with the exception of the town of Cúcuta and of the area of Santa Marta. The malaria morbidity rate was 588.3 per 100 000 population in 1958 and 106.6 in 1963. The mortality rate from this disease was 11.04 per 100 000 in 1958 and 7.16 in 1963.

The following immunization procedures were carried out in 1963:

Smallpox	1 594 164
Typhoid and paratyphoid fevers	1 075 395
Diphtheria, whooping-cough and tetanus	522 462
BCG	93 022
Poliomyelitis	76 592
Yellow fever	30 236
Diphtheria and whooping-cough	20 381
Tetanus	6 245
Diphtheria	2 500

Specialized Units

Maternal and child welfare services were provided at the health centres. In 1964, 180 182 pregnant women made 572 739 attendances, and 192 739 children under one year and 195 496 children aged between one and five years received medical care. A total of 116 840 deliveries were attended by a doctor or qualified midwife; 102 581 visits were paid to pregnant women and 341 842 visits to infants. Specialized services were provided at 34 clinics for respiratory diseases, two dermatological sanatoria, and 26 dermatological dispensaries, and by 23 mobile X-ray units. In 1963 there were 349 dental health units, at which 1 169 949 patients were treated.

Environmental Sanitation

In 1960, 5 993 229 persons were served by piped water systems and 6 051 493 by sewerage systems.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The most important change which occurred during the decade under review was the migration of a large section of the population from rural areas to urban centres where employment opportunities, educational and welfare facilities are greater.

The reduction of agricultural production, increased industrialization and urbanization, with resulting environmental sanitation problems are the immediate consequences of these population movements. Between 1954 and 1964 the birth rate increased from 38.3 to 43.7 and the death rate dropped from 12.2 to 11.4 per 1000. These demographic changes have resulted in the present population pressure. Eradication campaigns against yellow fever and malaria have

yielded successful results. The Ministry of Public Health was reorganized in 1963.

National Health Planning

The ten-year health plan, covering the period 1962-1971, shows a considerable gap between the health problems of Colombia and the quality and quantity of the resources available to solve them. This gap is widened by the progressive population increase. The objective of the plan is to extend the health services to cover the whole population by establishing health centres, each of which is expected to serve approximately 100 000 inhabitants. Thus, 200 additional centres would be needed by 1970 to cover the estimated population increase. US \$992.6 million, including US \$134.7 million or 13.6 per cent. in foreign aid, will be required for the execution of this programme. At present, a new ten-year plan is being formulated for the period 1967-1976, using the methodology recommended by the Center of Studies for Development of the Central University of Venezuela. This will enable a comparison to be made with the earlier planning techniques employed for the 1962-1971 plan.

Medical and Public Health Research

During the period 1961-1964, a study of human resources for health work and a hospital survey were carried out.

Government Health Expenditure

In 1964, the total central government expenditure amounted to 5186 million pesos, of which 205 million pesos (i.e., 4.0 per cent.) were devoted to the provision of health services. A further sum of 328 million pesos was spent by intermediate and local government health agencies. Thus the total general government health expenditure amounted to 533 million pesos, which was equivalent to an expenditure of 35 pesos per head on these services. (The above figures refer only to expenditure financed by general government health agencies proper and do not include health expenditures financed from the funds of other government departments or from social security funds, etc. In fact only about 80 per cent. of the population are covered by those services; therefore real expenditure per head by government health agencies was almost 43 pesos per head.)

COSTA RICA

Population and Other Statistics

At the last census, taken in April 1963, the population of Costa Rica was 1 336 274. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 224 687	1 273 887	1 344 192	1 386 757
Number of live births	61 666	62 624	63 798	61 753
Birth rate (per 1000 population)	50.4	49.2	47.5	44.5
Number of deaths	9 726	10 861	11 376	12 269
Death rate (per 1000 population)	7.9	8.5	8.5	8.8
Natural increase (per cent.)	4.25	4.07	3.90	3.57
Number of deaths, 1-4 years	1 080	1 554	1 476	1 540
Death rate, 1-4 years (per 1000 population at risk)	5.8	8.1	7.3	7.4
Number of infant deaths . . .	3 803	4 121	4 456	4 889
Infant mortality rate (per 1000 live births)	61.7	65.8	69.8	79.2
Number of maternal deaths . . .	96	90	77	82
Maternal mortality rate (per 1000 live births)	1.6	1.4	1.2	1.3

Of the 12 269 deaths recorded in 1964, the main causes were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1897), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1717), senility without mention of psychosis, ill-defined and unknown causes (1327), malignant neoplasms (1072), pneumonia (843), arteriosclerotic and degenerative heart disease (588), all accidents (544, including 108 in motor-vehicle accidents), vascular lesions affecting the central nervous system (381), bronchitis (316), tetanus (205).

The communicable diseases most frequently notified in 1964 were: influenza (11 625), dysentery, all forms (4274), measles (3088), gonorrhoea (1828), whooping-cough (1529), malaria, new cases (1210), syphilis, new cases (1170), infectious hepatitis (695), diphtheria (95), typhoid and paratyphoid fevers (81), leprosy (28), scarlet fever (17), poliomyelitis (10).

Hospital Services

In 1963, there was a grand total of 47 hospitals and establishments for medical care, with 6112 beds—equivalent to 4.5 beds per 1000 population. There were 142 774 admissions recorded in these establishments. The 47 institutions were:

	Category and number	Number of beds
Government general hospitals	16	3 566
Private general hospital	1	156
Rural hospitals	8	154
Tuberculosis hospitals	2	535
Maternity hospitals	13	221
Psychiatric hospital	1	1 081
Private general clinics	2	61
Physical therapy centre	1	10
Leprosarium	1	177
Preventorium	1	140
Establishment for alcoholics	1	11

Out-patient medical care was provided in 1964 at 87 health centres and by seven mobile health units. At these establishments 532 919 patient attendances were recorded.

Medical and Allied Personnel

In 1963, 525 doctors were practising in Costa Rica. This is equivalent to one doctor for 2560 inhabitants. There were also:

Dentists	205
Pharmacists	389
Fully qualified nurses	367
Fully qualified nurses with midwifery qualifications	345*
Assistant nurses	511*
Auxiliary nurses	1 196
Veterinarians	18
Sanitary engineers	10
Sanitary inspectors	89
Microbiologists	80
Laboratory auxiliaries	250
Nutritionists	5

* In government service.

Immunization Services

The latest information available regarding immunization relates to 1962. In that year the following procedures were carried out:

Smallpox (primary vaccination)	107 588
Diphtheria, whooping-cough and tetanus	19 582
Poliomyelitis	5 000
Typhoid and paratyphoid fevers	1 887

Specialized Units

In 1964, maternal and child welfare services were based on 75 pre-natal centres and 73 child health centres. Approximately eighteen thousand pregnant women attended the pre-natal centres and the mobile health units and 14 000 children under one year of age and 35 000 children aged between one and five years received services at the child health centres.

Domiciliary care was provided to 9124 pregnant women, 13 209 infants under one year and 21 949 pre-school children. A total of 28 762 deliveries were attended by a qualified midwife and 6481 by a doctor. This represents 55.3 per cent. of the total number of births. The health units gave medical supervision to 16 862 schoolchildren, representing 7.02 of the total school population. Sixteen dental health units gave treatment to 80 056 patients. Costa Rica also has three independent rehabilitation centres and 25 public health laboratories which carried out 411 385 examinations in 1964.

Environmental Sanitation

Of the total population of Costa Rica in 1963, at

least 800 000 were served with water supplies to their dwellings, 89 000 had to rely on community or private wells and 462 000 on other sources.

Regarding sewage collection and disposal, 120 000 inhabitants had sewerage systems only, 18 000 had sewerage and sewage treatment systems and 826 000 were provided with individual installations.

Government Health Expenditure

In 1963, the total government current and capital expenditure was 568 million colones of which 123 million colones (i.e., 21.6 per cent.) were allocated to the provision of health and other welfare services. This is equivalent to an expenditure of 92 colones per head on these services.

CUBA

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	6 939 000	7 068 000	7 236 000	7 434 000
Number of live births	234 600	260 900	256 900	264 300
Birth rate (per 1000 population)	33.8	36.9	35.5	35.6
Number of deaths	46 066	50 621	49 188	48 048
Death rate (per 1000 population)	6.6	7.2	6.8	6.5
Natural increase (per cent.) .	2.72	2.97	2.87	2.91
Number of deaths, 1-4 years	1 576	1 616	1 376	1 347
Death rate, 1-4 years (per 1000 population at risk)	2.1	2.1	1.7	1.7
Number of infant deaths .	9 046	10 389	9 906	10 136
Infant mortality rate (per 1000 live births)	38.6	39.8	38.6	38.4
Number of maternal deaths .	222	281	289	296
Maternal mortality rate (per 1000 live births)	0.95	1.08	1.12	1.12

Of the 48 048 deaths recorded in 1964 the main causes were: malignant neoplasms (7287), arteriosclerotic and degenerative heart disease and other diseases of the heart (6842), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (4859), vascular lesions affecting the central nervous system (4243), hypertension (2648), pneumonia (2196), gastritis, duodenitis, enteritis and colitis (2088), accidents (2003, including 699 in motor-vehicle accidents), tuberculosis, all forms (1133).

The communicable diseases most frequently notified in 1964 were: influenza (8634), infectious hepatitis (5249), tuberculosis, all forms (3833), measles (2061),

syphilis (1788), amoebic dysentery (1355), typhoid and paratyphoid fevers (1215), gonorrhoea (832), diphtheria (619), malaria, new cases (613).

Organization of the Public Health Services

The assumption of power by the Revolutionary Movement on 1 January 1959 was followed by many changes in the social and economic structure of Cuba. Along with other government departments the ministry concerned with the administration of the health services was completely reorganized. Previously a Ministry of Health and Social Assistance had aimed at a concentration of functions and executive control. Despite this there had been considerable overlapping, and preference had been given to curative medicine rather than to an integration of both preventive and curative medicine. There had been no attempt to plan the provision and organization of the health services of the country. The new Ministry of Public Health remedied the majority of these defects during the period 1959-1964. It has operated in accordance with the following principles and concepts:

- (1) integration of preventive and curative medicine;
- (2) concentration of policy making and general supervision in the Ministry, with decentralization of executive direction as far as possible;
- (3) emphasis on the needs of the rural areas;
- (4) popular participation in the implementation of public health programmes;
- (5) planning of health services as part of national social and economic planning;
- (6) increased attention to research.

The health services of Cuba are organized at three functional levels: national and central for policy making, regional for co-ordination, and district for execution.

The Minister of Public Health is in charge of the central government health department. He is advised by two councils—the Scientific Council and the Executive Council. The function of the Scientific Council, which is composed of eminent scientists, is to advise the minister on matters referred to it, to point out fields where public health action has been made possible by recent scientific advances, and to foster co-operation between the Ministry and the schools of medicine. The Executive Council assists the Minister in the formulation, co-ordination and review of the health programme. Its membership comprises the five Vice-Ministers in charge of the five constituent divisions of the Ministry, together with a number of technical experts. The five divisions of the Ministry are concerned respectively with medical and allied education; medical care services of all types, including hospitals; hygiene, including environmental sanitation, and epidemiology; medical supplies; and finance, planning and statistical services.

There are six regional health service directorates, corresponding to the six provinces of Cuba. Each of these directorates represents the authority of the Minister in the geographical area of the region, and is responsible for the implementation of his policies. Internally each regional directorate is organized in five sub-directorates with functions broadly similar to those of the five headquarters divisions.

At the local level there are 126 municipalities. For health purposes, from three to six of these municipalities are grouped together under a district directorate, which is responsible for the administration of the health service units throughout the area. The population of these district areas ranges from 40 000 to 350 000.

Hospital Services

In 1962 there were 175 hospitals and other institutions for in-patient medical care in Cuba. Their total bed complement was 41 898—equivalent to six beds per 1000 population. There were 460 592 admissions during the year.

The distribution of the beds was as follows:

Category and number	Number of beds
General hospitals	107
Tuberculosis sanatoria	7
Maternity hospitals	7
Paediatric hospitals	6
Mental institutions	2
Leprosaria	2
Others	44
	11 757
	3 124
	1 811
	1 753
	5 750
	750
	16 953

Out-patient services were provided in 1964 at 156 hospitals, 179 polyclinics, 56 dispensaries apart from hospitals, and at 71 other centres. In all, over 17 million attendances were made at these various units.

Medical and Allied Personnel and Training Facilities

In 1962, there were 5841 physicians in Cuba, giving a doctor/population ratio of one to 1210. Other health personnel included:

Dentists	1 266
Pharmacists	274
Veterinarians	326
Fully trained nurses	5 701
Nursing auxiliaries	2 003
Laboratory technicians	378
X-ray technicians	336

Before 1959 the Ministry of Health and Social Assistance did not exercise any control over the distribution and employment of medical personnel. There was under-employment of doctors because of their uneven distribution throughout the country. Doctors tended to concentrate in the towns and, if unsuccessful there, to emigrate.

The Ministry of Public Health has taken steps to rectify this situation. Salaries have been increased and a period of two years' service in rural areas is now obligatory for all newly qualified doctors. In order to meet the increased demand for medical personnel a second medical school has been established in the University of Oriente. The training of the doctor is now more practical, the object being to produce a practitioner competent in the basic subjects of general medicine, paediatrics, surgery and obstetrics and gynaecology. The need to train specialists has not been overlooked. Suitable young graduates, after their two years' rural service, are given opportunities to train for two or three years in one of 26 specialties.

Action has been taken to increase the numbers of nurses, nursing auxiliaries, statisticians and technicians. Training is free, and maintenance stipends are paid. Much of this training is decentralized to the regional institutions.

Facilities have also been provided for the post-graduate training of senior personnel, administrative doctors, senior statisticians, sanitary staff, public health nurses, etc.

Communicable Disease Control and Immunization Services

A number of the common infections and tropical diseases are prevalent in Cuba, and their control constitutes one of the major activities of the health administrations. Outstanding amongst these diseases

are those of the gastro-intestinal tract. Whether caused by bacteria, viruses or parasitic infestations, these diseases are the principal feature of morbidity in Cuba, and are also the cause of 80 per cent. of the deaths in children under one year of age. A special programme has been instituted whereby these cases are taken wherever possible to special centres for rehydration. As a result of this programme the number of deaths from these diseases fell from 3592 in 1962 to 2223 in 1964.

There were 348 cases of poliomyelitis in 1961 but, as a result of intensive use of Sabin oral vaccine in three separate annual campaigns, only one case of the disease was notified during the two years 1963 and 1964. At the end of the third campaign in 1964 it was estimated that 94.6 per cent. of all children under the age of 14 had been immunized.

Tetanus, both of the newborn and at later ages, is relatively common in Cuba, and in 1964 it was the cause of 375 deaths. Immunization against the disease is practised extensively. In the case of children diphtheria, whooping-cough and tetanus triple antigen is used, and in the case of adults tetanus toxoid. In the course of a mass campaign between October 1962 and February 1963, nearly 800 000 children under the age of nine and 900 000 adults were immunized against tetanus.

Malaria, although prevalent in Cuba, was made the subject of an eradication campaign only in 1959. Since that date the situation has rapidly improved as the result of intensive action. In 1964 only 613 cases were notified, as compared with 3230 in 1961. In the earlier year, of 91 000 blood films examined 3.5 per cent. were positive. In 1964, 276 470 films were examined and 0.23 per cent. were found to be positive.

Tuberculosis remains one of the chief causes of mortality, with 1204 deaths in 1961 and 1133 in 1964. Control of the disease is based on 28 special dispensaries and eight consultative clinics. In 1964 it was decided to launch a mass campaign against the disease, using BCG vaccination and mass radiography as the weapons of attack, together with extensive health education activities. During the course of the year over 162 000 newborn children (96 per cent. of all born in institutions) were immunized with BCG, and at the same time more than 72 000 schoolchildren were revaccinated. Nearly 550 000 X-ray examinations of the chest were also carried out, of which 0.6 per cent. were positive. For active cases of the disease, free treatment, either in hospital or at home, together with appropriate rehabilitation, is available.

Specialized Units

In 1964 there were eight maternity hospitals, three hospitals for mothers and infants, and six paediatric

hospitals at which, in addition to in-patient care, appropriate out-patient services were available.

In 1964 there were 94 pre-natal maternity centres, at which nearly 900 000 attendances were made by pregnant women. In the same year 141 939 confinements (53 per cent. of the total) took place under institutional conditions.

At 48 child welfare centres approximately 650 000 attendances were made by infants under one year, and more than 750 000 by children between the ages of one and four.

School health services were based on 152 special centres, which served 30 per cent. of the entire school population and at which 78 156 children were treated.

Dental care was available at 86 hospital dental clinics, four of which provided facilities for maxillo-facial surgery, and at 248 dental clinics not situated in hospitals. There were also 25 stomatological clinics. Altogether, approximately 1 120 000 persons were treated at these establishments.

Psychiatric out-patient services were provided at 18 special centres in general and mental hospitals and in independent clinics. At these centres 85 110 consultations took place.

Medical and health services, including first-aid posts, are being introduced into industrial undertakings to an increasing extent, and were available at 209 establishments in 1964.

Laboratories of varying size are provided in 449 public health institutions including hospitals. They carry out a wide range of investigations in the several branches of pathology and microbiology, and in the clinical field. More than 6 700 000 investigations were carried out in 1964.

Environmental Sanitation

In 1964, 4 154 157 inhabitants of Cuba were living in 276 communities with populations of more than 1000. Of those, 3 077 032 had a piped water supply to their dwellings, 126 917 were supplied from public fountains, 414 308 obtained water from communal wells, and 536 700 depended on other sources. The remainder of the population living in smaller communities had to rely on wells and other local sources.

In the same grouping of 276 communities, only 28 possessed organized arrangements for the disposal of sewage. Of their total population, 1 230 638 were served by sewerage systems and an additional 89 933 had sewerage systems and some form of sewage treatment. The remainder, numbering over 2 800 000 persons, had only individual installations, such as septic tanks or latrines.

Major Public Health Problems

The majority of Cuba's public health problems are concerned with the control of certain communicable diseases, which have already been mentioned. They can be summarized in order of priority as follows:

- (1) diarrhoeal diseases as a very frequent cause of death in children under the age of one;
- (2) intestinal parasitoses (a careful study of the extent of helminthic infestation in a population of over 50 000 persons revealed a positivity index of 46 per cent.);
- (3) acute respiratory syndromes, which caused 2142 deaths in 1960, including 828 in infants under one year; intensive research is indicated as many of these syndromes may be due to virus infection;
- (4) tetanus, both in the newborn and in adults;
- (5) tuberculosis;
- (6) leprosy;
- (7) the continued prevalence of malaria;
- (8) the existing deficiencies in environmental sanitation, and the need for adequate and safe supplies of potable water and greatly improved arrangements for the disposal of wastes.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In so far as Cuba is concerned, the decade 1955-1964 must be considered in two parts—the pre-revolutionary period covering the years 1955-1958, and the years from 1959 to 1964 subsequent to the assumption of power by the Revolutionary Movement.

During the first period Cuba had a capitalist government and society. Changes except in the political field were not noteworthy, and the condition of the health services, in which there were many deficiencies, remained virtually stationary. The revolution made possible many changes in the social and economic life of the country. First amongst them has been the year by year advance in the standard of living, as seen in the better distribution and increased consumption of food, the extension of education, housing developments, and additional facilities for recreation. The health of the community has benefited from these developments but in addition important advances are to be recorded in the administration, staffing provision and equipment of health services.

Perhaps the most significant advances have been the recognition by the Government of its responsibility for the health of the people and the acceptance by the members of the medical profession of their role as practitioners of social medicine. There is now much

greater scope for doctors to exercise their professional skills and the tendency for young practitioners to emigrate has diminished. There has also been a definite movement towards the integration of preventive and curative medicine. Furthermore, considerable extensions have been made to hospitals and out-patient departments, and facilities have been provided for general practitioners to obtain modern medical equipment to assist them in their clinical work. As a result of these activities improvement can already be recorded in the mortality and morbidity from certain diseases such as poliomyelitis, malaria and the gastro-intestinal infections of young children.

National Health Planning

The national health plan for Cuba is part of the Government's overall plan for the social and economic development of the country.

The principles governing the formulation of the health plan were that it should be national in its coverage, regionalized in execution, and based on the scientific application of public health knowledge and experience. In addition the plan should envisage the participation of the public in all health activities.

The content of the plan can be summarized under the following six headings:

- (1) the provision of medical care through all channels, hospitals, out-patient departments, dispensaries and general practitioners (medical care should be both general and related to special fields such as maternal and child care, and to the most prevalent communicable diseases);
- (2) hygiene and epidemiology—including the improvement of environmental conditions, the large scale control or eradication of certain diseases, e.g., malaria and the zoonoses, and the use of intensive immunization programmes;
- (3) education and training of health service personnel at all levels;
- (4) research;
- (5) medical and health service economics;
- (6) the production of medical supplies, including drugs.

Medical and Public Health Research

Before 1959 research was carried out by individuals and was neither organized nor supervised. The fields of interest included occupational diseases, parasitology, tropical diseases and congenital heart conditions. Since 1961 research carried out in the Government's health service institutions has been sponsored and supervised by the Minister's Scientific Council, work-

ing through a special sub-committee. The research activities of the faculties of medicine are also supervised by a joint committee composed of members appointed by the faculties, and representatives of the special sub-committee of the Scientific Council. Research is now being carried out in a number of fields and on many subjects including steroids, haematology, antibiotics, the epidemiology of cancer, nutrition, and sensitivity of *Aedes aegypti* to insecticides.

International Collaboration

Since 1961 Cuba has paid increasing attention to the international aspect of health problems and has co-operated actively with FAO, UNICEF and PAHO/WHO. There has been considerable participation in

scientific meetings, both regional and national. Cuba has enjoyed the privilege of having a large number of fellowships assigned to health service staff both by WHO and by the socialist group of countries.

Government Health Expenditure

In 1964, total general government expenditure on current account was 1376.2 million pesos of which 133.4 million pesos (i.e., 9.7 per cent.) or approximately 18 pesos per head were devoted to the provision of health services, as compared with 14 pesos per head in 1962.

A further sum of 13.5 million pesos was spent on capital account for the improvement and expansion of health facilities.

DOMINICAN REPUBLIC

Population and Other Statistics

The last census, taken in August 1960, showed a population of 3 013 525. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	3 110 000	3 220 300	3 334 300	3 451 700
Number of live births	102 585	106 695	110 136	111 032
Birth rate (per 1000 population)	33.0	33.1	33.0	32.2
Number of deaths	26 018	22 359	22 026	22 649
Death rate (per 1000 population)	8.4	6.9	6.6	6.6
Natural increase (per cent.) .	2.46	2.62	2.64	2.56
Number of deaths, 1-4 years	4 522	3 751	3 962	3 818
Death rate, 1-4 years (per 1000 population at risk)	10.5	8.2	8.5	7.3
Number of infant deaths .	10 499	8 482	8 928	9 054
Infant mortality rate (per 1000 live births)	102.3	79.5	81.1	81.5
Number of maternal deaths .	115	113	134	126
Maternal mortality rate (per live births)	1.1	1.1	1.2	1.1

Of the 22 649 deaths recorded in 1964 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (10 397), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (3442), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1507), tetanus (587), all accidents (549, including 117 in motor-vehicle accidents), malignant neoplasms (470), pneumonia (457), bronchitis (409).

The communicable diseases most frequently notified in 1963 were: influenza (63 612), dysentery, all forms (17 785), gonorrhoea (14 028), malaria, new cases (8027), syphilis, new cases (7113), measles (4489),

whooping-cough (2973), tuberculosis, all forms, new cases (2180), typhoid and paratyphoid fevers (1481), diphtheria (512), trachoma (475), poliomyelitis (357), infectious hepatitis (186).

Hospital Services

In 1963, there were 79 hospitals and medical care institutions which provided 7687 beds (equivalent to 2.3 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	52
Tuberculosis hospitals	2
Maternity hospitals	16
Paediatric clinics	3
Psychiatric clinics	2
Ophthalmological clinic	1
Cancer hospital	1
Orthopaedic clinic	1
Leprosarium	1

Medical and Allied Personnel

In 1963, 2085 physicians, including 1499 private practitioners, were registered with the Ministry of Health and Welfare. The doctor/population ratio was thus one to 1600. There were also:

Dentists	470
Pharmacists	835
Fully qualified midwife	1
Auxiliary midwives	71
Fully qualified nurses	426
Assistant nurses	111
Auxiliary nurses	1 062
Veterinarians	43
Sanitary engineers	11
Sanitary inspectors	293
Laboratory technicians	45
X-ray technicians	21

ECUADOR

Population and Other Statistics

At the last census, taken in November 1962, the population of Ecuador, exclusive of the jungle inhabitants, was 4 581 476. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 453 610	4 591 236	4 733 772	4 880 732
Number of live births	208 455	215 980	225 099	219 137
Birth rate (per 1000 population)	46.8	47.0	47.6	44.9
Number of deaths	58 166	60 082	61 129	58 989
Death rate (per 1000 population)	13.1	13.1	12.9	12.1
Natural increase (per cent.)	3.37	3.39	3.47	3.28
Number of deaths, 1-4 years	12 644	13 304	13 539	13 403
Death rate, 1-4 years (per 1000 population at risk)	20.9	21.0	21.1	20.3
Number of infant deaths	20 058	20 710	21 298	20 608
Infant mortality rate (per 1000 live births)	96.2	95.9	94.6	94.0
Number of maternal deaths	574	522	587	519
Maternal mortality rate (per 1000 live births)	2.8	2.4	2.6	2.4

Of the 58 989 deaths recorded in 1964 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (13 323), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (5876), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (5792), bronchitis (5654), whooping-cough (3122), pneumonia (3053), accidents (2307, including 442 in motor-vehicle accidents), measles (2070), tetanus (1728), malignant neoplasms (1593), influenza (1593), tuberculosis, all forms (1153), anaemias (1060).

In 1964, the communicable diseases most frequently reported in hospitals were: influenza (3616), tuberculosis, all forms, new cases (2562), dysentery, all forms (1511), measles (900), whooping-cough (276), syphilis, new cases (228), leprosy (127).

Hospital Services

In 1964, Ecuador had 161 hospitals and establishments for in-patient care, providing 11 199 beds, which is equivalent to a bed/population ratio of 2.3 per 1000. Of these hospitals and establishments, 98, with 10 380 beds, were state-maintained. The total number of 11 199 beds was distributed as follows:

Category and number	Number of beds
General hospitals	66
Medical centres (without doctor) . . .	63
Tuberculosis hospitals	11
Infectious diseases hospitals	4
Maternity clinics	5
Paediatric clinics	5
Psychiatric hospitals	3
Cancer hospital	1
Leprosaria	3
	224

Medical and Allied Personnel

In 1964 Ecuador had 942 doctors. The doctor/population ratio was thus one to 5200. Other health personnel included:

Dentists	51
Pharmacists	35
Fully qualified midwives	30
Fully qualified nurses	228
Assistant nurses	537
Auxiliary nurses	1 365

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	797 630
Poliomyelitis (combined)	157 848
Typhoid and paratyphoid fevers	28 055
Whooping-cough	7 965
Diphtheria, whooping-cough and tetanus	377

Specialized Units

In 1963 there were 28 maternal and child welfare centres, which were attended by 7838 pregnant women, 56 427 infants under one year and 97 308 children aged between one and five years. Domiciliary visits were paid to 29 988 pregnant women, 59 320 infants under one year and 103 295 pre-school children. There were 12 school health units where 115 866 schoolchildren were under health supervision. Twenty-eight dental health units treated 22 549 patients.

Environmental Sanitation

Of Ecuador's total population, according to the 1962 census 690 305 had piped water to their dwellings, 105 709 had water from public fountains, 799 566 depended for water on community or private wells and 66 403 had water from other sources. With regard to sewage collection and disposal, 659 398 were served by sewerage systems and had sewage treatment facilities; and 165 095 had individual installations.

Government Health Expenditure

In 1965 the central government budget contained provision for an expenditure of 153 million sures on

health services. This is equivalent to an expenditure of 31 sures per head on these services. A further sum of 4.4 million sures was allotted on capital account for the improvement and construction of health facilities.

EL SALVADOR

Population and Other Statistics

At the last census, taken in May 1961, the population of El Salvador was 2 510 984. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	2 526 000	2 627 000	2 721 000	2 824 000
Number of live births . . .	124 871	127 154	133 395	132 709
Birth rate (per 1000 population)	49.4	47.9	49.0	47.0
Number of deaths	28 471	30 342	29 614	29 510
Death rate (per 1000 population)	11.3	11.6	10.9	10.4
Natural increase (per cent.) .	3.81	3.63	3.81	3.66
Number of deaths, 1-4 years	5 509	6 050	5 762	...
Death rate, 1-4 years (per 1000 population at risk) . .	14.5	16.5	15.2	...
Number of infant deaths . .	8 737	9 077	9 035	8 662
Infant mortality rate (per 1000 live births)	70.0	71.4	67.7	65.3
Number of maternal deaths .	186	171	157	118
Maternal mortality rate (per 1000 live births)	1.5	1.3	1.2	0.9

Of the 29 614 deaths recorded in 1963, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (10 290), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (2610), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1642), bronchitis (1034), homicide and operations of war (876), accidents (854, including 229 in motor-vehicle accidents), pneumonia (825), malignant neoplasms (578), tetanus (535), measles (518), whooping-cough (483), influenza (457), tuberculosis, all forms (417).

In 1964, the following were the most frequently notified communicable diseases: malaria, new cases (25 857), influenza (23 487), syphilis, new cases (8349), measles (8090), dysentery, all forms (4866), tuberculosis, all forms, new cases (4544), whooping-cough (3677), gonorrhoea (2909), typhoid and paratyphoid fevers (1314), infectious hepatitis (1069), diphtheria (303), Chagas' disease (60), paralytic poliomyelitis (20), leprosy (12).

Organization of the Public Health Services

The Ministry of Public Health and Welfare is responsible for the organization, administration, planning and evaluation of all health services in the country as well as for the establishments for the protection of children and old people. In 1964 the Ministry comprised four departments: administrative, legal, engineering and architecture, planning and evaluation. The Directorate-General of Health is placed within the Ministry and is responsible for all activities concerned with the prevention of disease and the promotion of health. It comprises four main departments dealing respectively with administrative services, legal advice, nursing schools and health training and general technical services. For health administration, the country is divided into four regions, each of which is administered by a regional director of health. Other government bodies providing curative health services include: the Institute for Social Security, the medical care organization for military personnel and school teachers, the Institute for Rural Colonization and the prison medical service.

Hospital Services

In 1963, hospital facilities were provided at the following establishments:

Category and number	Number of beds
Government general hospitals	10
Private general hospitals	9
Government medical centres	9
Tuberculosis hospitals	2
Government maternity hospital	1
Private maternity hospital	1
Government paediatric hospital	1
Government psychiatric hospital	1
Private psychiatric hospitals	2
Chronic diseases hospitals	3

These 39 hospital establishments provided altogether 6267 beds—equivalent to 2.3 beds per 1000 population.

In 1964, out-patient medical care was given at 12 hospital out-patient departments, nine health

centres, 53 health units, eight health posts and 62 health posts of the mobile health units. These establishments recorded altogether 1 129 134 attendances.

Medical and Allied Personnel and Training Facilities

In 1963, 581 doctors were working in government service—210 full-time and 371 part-time. The doctor/population ratio was thus one to 4700. Other health personnel included:

Dentists	157
Pharmacists	155
Fully qualified nurses	575
Assistant nurses	748*
Auxiliary nurses	600*
Veterinarian	1*
Sanitary engineers	7
Sanitary Inspectors	123
Laboratory technicians	72
X-ray technicians	20
Health educators	7
Nutritionists	3

* In government service.

The Faculty of Medicine of the National University plans to increase the number of first-year students from 40 to 100 over a period of five years. The two existing nursing schools increased the number of admissions in 1964 by 34 per cent. Since 1963, in-service training is given to nurses working in hospitals.

Communicable Disease Control and Immunization Services

Tuberculin tests and X-ray examinations are currently used for the detection of tuberculosis cases. Since 1963 and in accordance with the national health plan, particular emphasis has been placed on ambulatory care, while the duration of in-patient treatment tends to be shortened. Prophylactic treatment is given to contacts. BCG vaccinations increased from 35 114 in 1961 to 135 000 in 1964. The incidence of venereal diseases is increasing. Routine investigations are carried out in the course of the serological examinations of pregnant women and at the time of the delivery of health certificates to workers. All health establishments provide free treatment of venereal disease. Malaria is still prevalent in El Salvador. Epidemiological surveys and spraying operations were continued during the period under review. Of nearly 300 000 blood samples examined in 1964, 7.6 per cent. were found positive. In the same year spraying operations protected 123 687 persons. Because of the frequency of tetanus, especially among newborn children, a vaccination campaign, covering mainly pregnant women and agricultural workers most exposed to this disease, has been started and 110 000 persons were

vaccinated in 1964. In order to control the incidence of communicable diseases of the digestive system, various programmes to improve the environmental sanitation and water supplies have been initiated.

Specialized Units

In 1964, 135 maternal and child health centres gave services to 33 572 pregnant women, 22 512 infants under one year of age and 16 409 children aged between one and five years; and 22 287 domiciliary visits were paid to pregnant women, 26 797 to infants up to one year of age and 44 641 to pre-school children. A total of 30 037 deliveries (22.6 per cent of all births) were attended by a doctor or qualified midwife. The out-patient clinic for psychiatric diseases was attended by 10 829 patients. Twenty-nine public health laboratories carried out 784 467 examinations.

Environmental Sanitation

In 1964, of the total urban population of 1 116 289 living in 261 communities of between 2000 and 100 000 inhabitants, 642 000 persons were provided with piped water to their dwellings, 197 613 had to rely on public fountains for water and 276 676 on other sources. There were 358 000 persons served by sewerage systems only and 377 000 with private installations.

Major Public Health Problems

Gastro-enteritis and colitis are amongst the major causes of morbidity and mortality affecting mostly young children. These diseases have various and complex origins and their eradication is of importance to the overall development of the country. Malnutrition is another health problem of considerable magnitude. So also is malaria. The eradication programme which started in 1956 has not yet achieved interruption of transmission throughout the whole country and 30 per cent. of the population still live in areas where transmission remains high.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Four distinct governments succeeded each other between 1960 and July 1962. During this period a number of developments took place which directly or indirectly influenced the health situation in the country. Among these changes were: the extension of the services provided by the El Salvador Institute for Social Security, the legislation on industrial development, the setting-up of the National Council for Economic and

Social Planning, the introduction of the common market for Central America, the establishment of the national administration for water supplies and sewerage systems, improvement of the agricultural and industrial output, development of the road network and of the production of electric energy, and an increase in the number of schools and teachers. The structural organization of the Ministry of Public Health and Welfare has been changed. The number of health establishments has been increased. Much attention has been given to the improvement of medical recording systems and to the integration of preventive services into the services rendered by medical centres and units and by health posts.

National Health Planning

A national health plan for a ten-year period was prepared in 1963. The plan contains a diagnosis of the health situation in 1962-1963 and places particular emphasis on programmes for the training of various categories of personnel, on operational research and on malaria eradication activities. A planning department was established in the Ministry and the training of health statisticians was also started immediately. The co-ordination of the health plan with other existing

plans for social and economic development began in 1965. The plan also provides for a system of evaluation of the results obtained. Copies of the plan have been made available to all the ministries of health in the Americas.

International Collaboration

The Government of El Salvador receives assistance from UNICEF, WHO and the United States Agency for International Development.

Government Health Expenditure

In 1963, the total general government consumption expenditure was 149.3 million colones, of which 26.5 million colones (i.e., 17.6 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 9.8 colones per head on these services. A further sum of 1.7 million colones was spent on capital account for the improvement and expansion of existing health facilities. Over 80 per cent. of current and 94 per cent. of capital expenditures are financed from funds allotted to the Ministry of Public Health and Welfare.

FALKLAND ISLANDS (MALVINAS) AND DEPENDENCIES

Population and Other Statistics

At the last census, taken in March 1962, the population of the Falkland Islands (Malvinas) was 2172. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	2 113	2 172	2 136	2 102
Number of live births	48	49	44	42
Birth rate (per 1000 population)	22.7	22.6	20.6	20.0
Number of deaths	26	24	24	13
Death rate (per 1000 population)	12.3	11.0	11.2	6.2
Natural increase (per cent.)	1.04	1.16	0.94	1.38
Number of deaths, 1-4 years	0	0	0	0
Number of infant deaths	2	1	1	1
Infant mortality rate (per 1000 live births)	41.7	20.4	22.7	23.8
Number of maternal deaths	0	0	0	0

The causes of the 13 deaths recorded in 1964 fall in the following categories: arteriosclerotic and degenerative heart diseases; bronchitis; senility without mention of psychosis, ill-defined and unknown causes; vascular lesions affecting the central nervous system; congenital malformations, birth injuries, post-natal asphyxia and atelectasis.

In 1963, ten cases of gonorrhoea and six new cases of tuberculosis were notified.

Hospital Services

In 1962, there was one general hospital in Stanley, which provided 32 beds—equivalent to 14.7 beds per 1000 population. The out-patient department of the general hospital gave services to 768 persons, who made 1804 attendances in 1964.

Medical and Allied Personnel

In 1962, the health personnel included four doctors—equivalent to one doctor for 543 inhabitants—two dentists, three fully qualified nurses with midwifery qualifications and five auxiliary nurses.

Immunization Services

The following immunizations were carried out in 1962: 677 against smallpox, 117 against poliomyelitis,

46 BCG vaccinations, 28 against diphtheria, whooping-cough and tetanus, and three against cholera.

Specialized Units

In 1964, the maternal and child welfare services were based on a pre-natal centre and a child health centre at which 42 pregnant women, 45 infants under one year of age and 122 children aged from one to five years received medical care. All deliveries were attended by a doctor or qualified midwife. The total school population of 168 children was under medical supervision provided at the school health unit. Two dental health units gave services to 1066 patients.

Environmental Sanitation

In 1964, all inhabitants of the Falkland Islands (Malvinas) were served with piped water to their dwellings. Stanley is provided with a sewerage system.

Government Health Expenditure

In the 1963/64 fiscal year the total general government expenditure amounted to £345 601, of which £35 590 (i.e., 10.3 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of £16.8 per head on these services, as compared with £16.5 in 1961/62.

GRENADA

Population and Other Statistics

At the last census, taken in April 1960, the population of Grenada was 88 677. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	90 020	90 630	92 000	95 184
Number of live births	3 691	3 419	3 445	3 374
Birth rate (per 1000 population) . . .	41.0	37.7	37.4	35.4
Number of deaths	1 022	840	830	805
Death rate (per 1000 population) . . .	11.4	9.3	9.0	8.5
Natural increase (per cent.)	2.96	2.84	2.84	2.69
Number of deaths, 1-4 years	189	129	92	87
Number of infant deaths	266	179	186	172
Infant mortality rate (per 1000 live births)	72.1	52.4	54.0	51.0
Number of maternal deaths	1	3	14	...

Of the 830 deaths recorded in 1963 the main causes were: senility without mention of psychosis, ill-defined and unknown causes; gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn; malignant neoplasms; diseases peculiar to early infancy and immaturity; vascular lesions affecting the central nervous system.

Organization of the Public Health Services

The medical and public health services of Grenada are under the control of the Senior Medical Officer, who acts as an adviser on all health matters to the Minister of Social Services. The island of Carriacou also comes within the jurisdiction of the Senior Medical Officer. The Grenada health service is divided into two broad sections: curative services and preventive services. The island has ten medical districts, each with a district medical officer in charge.

Hospital Services

In 1964, eight hospitals and medical care establishments provided 711 beds which is equivalent to 7.5 beds per 1000 population. These beds were distributed as follows:

Category and number	Number of beds
General hospitals	3 280
Mental hospital	1 200
Tuberculosis clinic	1 60
Infectious diseases hospital	1 20
Home for the aged and infirm	1 137
Home for handicapped children . . .	1 14

In 1964, out-patient facilities were available at three hospitals, five health centres, seven dispensaries and 26 medical aid posts.

Medical and Allied Personnel

In 1960, Grenada had 20 doctors, equivalent to one doctor for 4500 inhabitants. Other health personnel included:

Dentists	4
Pharmacists	23
Fully qualified nurses	114
Assistant nurses	24
Veterinarian	1

Communicable Disease Control and Immunization Services

Grenada became free from *Aedes aegypti* following an extensive insect control programme assisted by UNICEF and WHO. In Carriacou, however, the mosquito developed resistance to DDT and is still prevalent. Annual two-cycle spraying of the malarious areas, drug distribution and taking of blood

smears commenced in 1957. Complete eradication of malaria has been achieved, the last positive case being registered in 1959. There were epidemics of polio-myelitis in 1954 and 1957, and an isolated case in 1959. A mass campaign in 1963 reaching over 30 000 children was conducted on an island-wide basis, using Salk vaccine. A more limited programme was undertaken in 1965, with oral vaccine, as a prelude to more extensive coverage of the population in 1966. A very successful yaws control programme led to the eradication of the disease. A rabies control programme with mass poisoning and trapping of mongooses is now in full progress. It was started with the ultimate object of destroying this wild life reservoir of the disease. Elimination of stray dogs and vaccination of the remainder of the dog population are also undertaken.

Specialized Units

In 1964, Grenada had 28 pre-natal centres, which recorded 4220 attendances by pregnant women. Domiciliary care was given to 9786 children. All deliveries were attended by a doctor or qualified midwife. Five dental clinics are held weekly throughout the island by the government dental surgeon. Other specialized units included an independent medical rehabilitation centre, a mobile unit for treatment of venereal diseases and a public health laboratory which carried out 13 665 examinations.

Environmental Sanitation

In 1957, with the assistance of UNICEF and WHO, the Government launched an environmental sanitation programme with a view to improving the water supply, excreta and waste disposal facilities and health education.

In 1964, 42 213 persons had piped water to their dwellings, 36 867 depended on public fountains and 12 104 on other sources; 6900 persons were served by sewerage systems and 63 126 were provided with individual installations—either septic tanks or latrines.

Major Public Health Problems

The major public health problems in Grenada are rabies, malnutrition and gastro-enteritis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In 1955, a disastrous hurricane passed over the island and destroyed cocoa and nutmeg plantations, houses and water supplies. With assistance from the United Kingdom the economy was rapidly restored as a result of the replanting and rejuvenation of the plantations and the introduction of banana as an export crop. The water supplies disrupted during the hurricane were re-established and have now reached the pre-hurricane level.

National Health Planning

With the assistance of UNICEF, PAHO and WHO, a comprehensive plan covering all aspects of health was prepared and is now being put into operation.

Government Health Expenditure

In 1964, the total general government current expenditure amounted to WI \$10 462 200, of which WI \$2 173 721 were devoted to the provision of health services. This was equivalent to an expenditure of WI \$22.8 per head on these services, as compared with WI \$9.8 per head in 1959.

GUATEMALA

Population and Other Statistics

At the last census, taken in April 1964, the population is provisionally stated to have been 4 278 341. Population estimates and some other vital statistics for the years 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	3 885 584	4 016 624	4 144 196
Number of live births	193 833	191 420	197 671
Birth rate (per 1000 population)	49.9	47.7	47.7
Number of deaths	63 287	69 287	71 449
Death rate (per 1000 population)	16.3	17.3	17.2
Natural increase (per cent.)	3.36	3.04	3.05

	1961	1962	1963
Number of deaths, 1-4 years	16 176	17 539	18 463
Death rate, 1-4 years (per 1000 population at risk)	31.7	33.2	33.9
Number of infant deaths	16 438	17 485	18 349
Infant mortality rate (per 1000 live births)	84.8	91.3	92.8
Number of maternal deaths	488	457	406
Maternal mortality rate (per 1000 live births)	2.5	2.4	2.1

Of the 71 449 deaths recorded in 1963, the most important causes were: senility without mention of psychosis, ill-defined and unknown causes (11 236), gastritis, duodenitis, enteritis and colitis, except diarr-

höea of the newborn (9561), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn, and other diseases peculiar to early infancy and immaturity (unqualified) (8162), pneumonia (6042), influenza (4860), measles (3280), whooping-cough (3209), anaemias (1772), dysentery, all forms (1673), accidents (1424, including 433 in motor-vehicle accidents), tuberculosis, all forms (1291), bronchitis (1268).

The communicable diseases most frequently notified in 1964 were: malaria, new cases (20 401), influenza (17 005), dysentery, all forms (9263), tuberculosis, all forms, new cases (3714), gonorrhoea (3274), measles (2838), whooping-cough (2355), syphilis, new cases (1186), typhoid and paratyphoid fevers (1147). There were also 305 cases of trypanosomiasis and 100 of leprosy.

Organization of the Public Health Services

Guatemala has had a health department at the central governmental level since 1936. As from 1945 this was merged with the organization responsible for social assistance to constitute a Ministry of Public Health and Welfare. The Minister of Public Health and Welfare is responsible directly to the head of the Government, and is assisted by a vice-minister and the necessary technical staff. He is responsible for the direction, organization and functional efficiency of the whole of the public health and social assistance services of the Republic, including hospitals, specialized training institutions for nursing and physical therapy, rehabilitation services, mental health, health education, national health planning, etc. The Ministry is organized accordingly into a number of separate administrative divisions, of which the most important is the Directorate General of Public Health, which is in effect the original Central Health Department. The Directorate General is organized in divisions and institutes which are concerned with administration, epidemiology, parasitology, local health services, the preparation of biological products, technical services and environmental hygiene.

Through the Division for Local Health Services, the Directorate General supervises the provision of health services in the four regions into which the country is divided. At each regional headquarters there is a small health service directorate, consisting of physicians and a public health nurse supervisor. It is hoped in due course to add to this directorate a laboratory technician, a statistician, a nutritionist, and ultimately a sanitary engineer. Each region is divided into departments, of which there are 21 in all. In each department there are a varying number of health centres, each staffed by a team consisting of one or two whole-time physicians, a nurse with public health

training, and auxiliaries. These teams are responsible for the medical care and environmental supervision of the population in the rural areas.

Hospital Services

In 1963, 45 hospitals and institutions for medical care were functioning in Guatemala. The total number of beds provided was 10 866, equivalent to 2.6 per 1000 population. The distribution of the hospitals was as follows:

Category	Number
General hospitals	27
Tuberculosis sanatoria	4
Infectious disease hospital	1
Maternity hospitals	4
Paediatric hospitals	4
Psychiatric hospital	1

The other institutions were a leprosarium, two rehabilitation centres and an institution for the treatment of alcoholics. Between them these 45 establishments admitted 142 736 patients.

In 1963, out-patient medical care was given at 24 hospital out-patient departments and 47 health centres and by ten mobile health units; 224 697 new patients attended these establishments during the year. It was also possible for patients to obtain medical services at health posts, which are in the charge of auxiliary nurses and are visited periodically by a physician.

Medical and Allied Personnel

The number of physicians practising in Guatemala has been variously stated in past years, but the figure most recently provided, namely for 1963, was 1131. This represents a doctor/population ratio of one to 3660 inhabitants. There were also:

Dentists	175
Veterinarians	43
Sanitary engineers	21
Sanitarians	102
Fully qualified nurses	36
Public health nurses	158
Certificated assistant nurses	109

Communicable Disease Control and Immunization Services

Although deaths from malaria have declined, the number of new cases reported has been increasing since 1962, reaching a total of over 20 000 in 1964. Malaria eradication activities are being extended in co-operation with other Central American States, but the major difficulty is the development of vector resistance to insecticides. Steps are being taken to

introduce communal treatment with antimalarial drugs as a measure of control in the affected areas. The incidence of the diarrhoeal diseases and the typhoid fevers continues to be high, and is the cause of heavy mortality in early life. Immunization with TAB is employed on a large scale. The solution to the problem caused by these diseases lies in extensive improvement in environmental sanitation. The tuberculosis situation has shown little improvement. This is also a reflection of the environmental conditions, with which is associated a low standard of nutrition in certain population groups. Malnutrition, together with the associated avitaminoses and anaemias, is a major cause of ill-health and incapacity. The nutritional status of the Guatemalan population is under constant review. The Institute of Nutrition of Central America and Panama (INCAP) is the centre of various research and other activities which provide special foods, and helps to advance the health education of the population.

During 1963, the following immunization procedures were carried out:

Smallpox	127 159
Typhoid and paratyphoid fevers	36 093
Diphtheria, whooping-cough and tetanus	26 671
Poliomyelitis (Salk vaccine)	15 200
BCG	2 796

Specialized Units

In 1963 pre-natal services were given at 68 centres which were attended by 29 287 pregnant women and at which 55 084 children under the age of five received supervisory care. Domiciliary visits to pregnant women totalled 5995; 6226 visits were paid to infants and 19 076 to children between one and five years. A total of 24 255 confinements took place with a physician or trained midwife in attendance. This is equivalent to approximately 12.7 of all births.

Dental services were given at 21 dental health units, attended by 27 485 persons. The two rehabilitation centres treated 4868 patients and the psychiatric outpatient clinic was attended by 788 patients.

Environmental Sanitation

In 1964, out of Guatemala's total population of over four million, about 550 000 had a piped water supply available in their dwellings. Approximately 380 000 had access to public fountains, and 90 000 had to depend on community or private wells. The remainder had to rely on other sources. As regards sewage disposal, a total of approximately 370 000 people were served by sewerage systems, and 225 000 had septic tanks and latrines.

Major Public Health Problems

The most important health problems are those arising from the mortality and morbidity associated with groups of diseases— infections of the gastrointestinal tract, acute respiratory infections, and intestinal parasites. Their effect upon the health of the community has been made even more apparent by the data collected to establish the diagnosis of the national health situation, which is a prerequisite for the health planning process.

Malnutrition is another major health problem, especially as a contributing cause of the deaths of young children suffering from diseases which are not necessarily fatal. INCAP has established that there are serious deficiencies in basic nutrients, particularly in the diets of the population in rural areas. The resurgence of malaria has also given cause for much concern. The lack of safe water supplies and the uncontrolled disposal of sewage contribute greatly to the prevalence of the intestinal infections and infestations, and constitute major health problems. Intensive health education and substantial capital investment are both required to improve the existing situation.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In the cultural and economic fields there has been little to affect the health situation of Guatemala during the period in question. In the health field itself there have been at least three developments of major importance. The first of these was the institution of the system of health centres, and its recent extension to include health posts and mobile health units. In this work, which is of particular benefit to the population in the rural areas, the co-operation of UNICEF and the Pan American Health Organization in providing technical advice and fellowships has been most helpful. The second event was the commencement of the malaria eradication campaign in 1955. The most recent development in this field has been the co-ordination of antimalarial activities by the Central American States. The full success of this work, however, has been hindered by the appearance of vector resistance to the insecticides used. Finally, during the last three years the laboratory of the School of Public Health began to manufacture, with the help of UNICEF, such biological products as smallpox, typhoid and paratyphoid and rabies vaccines. This is of importance not only to Guatemala, but to neighbouring countries also.

National Health Planning

The preparation of a national health plan was started in 1964. It is based on a study of the data collected for the diagnosis of the health situation in 17 areas, distributed throughout the four regions of the country. This work has been carried out by two whole-time officers, assisted for short periods by other medical and technical personnel. Three alternative plans were to be prepared and submitted to the National Council for Economic Planning, which is the body responsible for the social and economic development of the country. These plans were to help the Council to determine the amount of capital investment in health projects which could be provided during the five-year period 1965-1969.

International Collaboration

International collaboration takes several forms. The health ministers of the Central American States and of Panama meet together annually. At these meetings, at which the representatives of the interested specialized agencies are also present, common problems of co-ordination and co-operation in the technical fields are discussed. A meeting of the directors of the

malaria eradication services of these countries also occurs annually. There is also an annual meeting of a government-sponsored body, the Public Health Association of Mexico and Guatemala, at which the Ministers of Health of the two countries and their technical advisers discuss matters of mutual interest.

Collaboration with the various specialized agencies and in particular with UNICEF and PAHO/WHO is carried out on an extensive scale. The fields in which it is greatest are those of malaria eradication, the control of tuberculosis, public health laboratory services, veterinary public health, nursing education, and the provision of consultant services regarding the construction of public water supplies.

Government Health Expenditure

In 1963 general government consumption expenditure was 81.5 million quetzales, of which 14.6 million quetzales (i.e., 17.9 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 3.5 quetzales per head on these services. A further sum of 2.3 million quetzales was spent on capital account for the improvement and expansion of health facilities.

HAITI

Population and Other Statistics

At the last census, taken in August 1950, the population of Haiti was 3 097 220. In 1961 the population estimate was 4 249 097 and in 1962, 4 345 946. Population estimates and some other vital statistics for the years 1963 and 1964 are given in the following table:

	1963	1964
Mean population	4 448 000	4 551 000
Number of live births	197 834	202 234
Birth rate (per 1000 population)	44.5	44.4
Number of deaths *	96 000	98 280
Death rate (per 1000 population)	21.6	21.6
Natural increase (per cent.)	2.29	2.28
Number of infant deaths *	35 000	34 700
Infant mortality rate (per 1000 live births)	176.9	171.6

* Approximate figures.

Neonatal tetanus, gastro-enteritis, malnutrition in infants and tuberculosis are stated to be among the main causes of death.

The communicable diseases most frequently reported in 1964 were: influenza (14 428), malaria, new cases (12 135), whooping-cough (1018), typhoid fever (443), measles (332), poliomyelitis (23).

Organization of the Public Health Services

The Department of Public Health and Population, which was reorganized in 1962, is placed directly under the Minister of Public Health and Population. It comprises four main divisions: the Secretariat of State for Public Health and Population, the Directorate-General of Public Health, and divisions for medical education and population. The Directorate-General includes the following divisions: public hygiene and preventive medicine, public welfare, odontology, rural health, scientific research. The Division of Public Hygiene and Preventive Medicine is responsible for covering biostatistics, epidemiology, tuberculosis control, quarantine, maternal and child health, school health, control of pharmacies, drugs and narcotics, environmental sanitation and the national public health laboratory.

The Division of Public Welfare is responsible for the organization and maintenance of urban hospitals and dispensaries, whereas the Division of Rural Health supervises the health services in rural areas.

The Division of Odontology is headed by a dentist. He is responsible for organizing, directing and supervising all dental services. All hospitals and dispensaries include a dental health clinic.

Hospital Services

In 1965 Haiti had 26 public hospitals providing 2389 beds (0.5 per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	12
Medical centres	8
Maternity hospitals	2
Psychiatric centre	1
Sanatoria	3
	288

Out-patient services were provided at 12 health centres and 151 public dispensaries.

Medical and Allied Personnel and Training Facilities

In 1965 Haiti had 310 doctors, 35 of whom were in private practice. The doctor/population ratio was one to 14 200. Other health personnel included:

Dentists	81
Pharmacists	20
Midwives	44
Nurses	398
Auxiliary nurses	586
Laboratory technicians	127

Doctors, dentists and pharmacists are trained at the University of Haiti in Port-au-Prince. Nursing personnel are trained in the three schools of nursing in Port-au-Prince, Cap-Haïtien and Les Cayes.

Communicable Disease Control

There is a high incidence of tetanus, gastro-enteritis, tuberculosis and typhoid fever which, in association with malnutrition, cause a high infant mortality. These diseases are more frequent in rural areas than in the towns. A malaria eradication programme was

started in 1961 with the collaboration of UNICEF, the United States Agency for International Development and PAHO/WHO. *Plasmodium falciparum* is the predominant parasite and *Anopheles albimanus* is the vector. In October 1964 a pilot programme for mass treatment with chloroquine and pyrimethamine was initiated. The results of this trial were satisfactory and it was decided to extend the programme to the whole malarious area. The population is actively participating in this scheme. It was considered that, after completion of the attack phase in 1965, the consolidation phase would be reached in 1966. A yaws eradication programme was started in 1950 with the assistance of UNICEF and PAHO/WHO. The number of yaws cases is decreasing and the present annual incidence is estimated to be very small indeed.

Major Public Health Problems

The main health problems are the high incidences of malaria, yaws and pulmonary tuberculosis. The number of cases of typhoid and paratyphoid fevers occurring in rural areas, and even in some towns, is a matter of concern to the health authorities, and demands urgent solution of the related problem of safe drinking-water supplies. Neonatal tetanus and tetanus in adults working in rural areas constitute another serious problem.

Government Health Expenditure

In the 1964/1965 fiscal year the national budget involved an estimated expenditure of 123.4 million gourdes, of which 17.1 million gourdes (i.e., 13.8 per cent.) were allocated to the provision of health services. This was equivalent to an expenditure of 3.8 gourdes per head on these services.

HONDURAS

Population and Other Statistics

At the last census, which was taken in April 1961, the population of Honduras was 1 884 765. Population estimates and some other vital statistics for the years 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	1 896 000	1 959 000	2 024 000
Number of live births	85 842	92 128	93 649
Birth rate (per 1000 population)	45.3	47.0	46.3
Number of deaths	18 045	18 650	19 510
Death rate (per 1000 population)	9.5	9.5	9.6
Natural increase (per cent.)	3.58	3.75	3.67
Number of deaths, 1-4 years	3 799	3 883	3 983

	1961	1962	1963
Death rate, 1-4 years (per 1000 population at risk)	13.5	13.4	13.3
Number of infant deaths	4 283	4 020	4 400
Infant mortality rate (per 1000 live births)	49.9	43.6	47.0
Number of maternal deaths	236	245	212
Maternal mortality rate (per 1000 live births)	2.7	2.7	2.2

There is no certification of causes of death in Honduras, but information obtained from hospitals indicates that the following were amongst the main causes in 1963: gastritis, duodenitis, enteritis and colitis; senility; avitaminosis and malnutrition; tuber-

culosis; accidents; malignant neoplasms; influenza; diseases of early infancy.

The communicable diseases most frequently notified in 1964 were: influenza (18 550 cases), amoebic dysentery (17 049), gonorrhoea (6418), malaria, new cases (5515), measles (5058), whooping-cough (4231), syphilis (1981), typhoid and paratyphoid fevers (1027), infectious hepatitis (252). Fifty-three cases of leprosy were also notified.

Organization of the Public Health Services

The health services of Honduras are primarily the responsibility of the Government, which is assisted, however, by certain autonomous bodies—the National Institute of Social Security, the National Union for Social Welfare and the Red Cross Society—and by the services and institutions which have been established by commercial and mining corporations. A Ministry of Health was first created in Honduras in 1954. Its name was changed in 1958 to the Ministry of Public Health and Social Assistance. The organization of the Ministry comprises the Directorate-General of Public Health, the Directorate of Medico-social Assistance, the Administrative Directorate and the Planning Unit. The Directorate-General is in general charge of the largely decentralized health services of the country, except for the hospitals, which are administered by the Directorate of Medico-social Assistance. It is proposed to integrate the local health centres (for which the Directorate-General of Public Health is ultimately responsible) with the hospitals. As a result of this reorganization the Directorate-General of Public Health and the Directorate of Medico-social Assistance would be merged in one General-Directorate of the National Health Service of Honduras.

The Directorate-General of Public Health is subdivided into a number of divisions for the various technical fields, e.g., epidemiology, tuberculosis, environmental sanitation, health promotion, health education, laboratories and local health services. The last-named services are decentralized to seven district health departments. (For reasons of geography and communications these districts do not necessarily correspond to the political divisions of the country.) Each health district is in the administrative charge of a chief district medical officer, who is assisted by a nurse and a sanitary inspector. In each district there is at least one hospital and a health centre with a number of subcentres and health posts. The health centres have no beds but provide a wide range of preventive, diagnostic and curative services. They also collect statistical information and are responsible for domiciliary visiting, health education and environmental sanitation. They are staffed by doctors, nurses and

technical and auxiliary personnel. The subcentres and health posts provide a more limited range of services and are staffed accordingly. The mobile health units, which operate in the remote parts of the country, are under the direct control of the central Ministry.

Hospital Services

In 1963 there were 30 hospitals in Honduras, with a total quota of 4048 beds, (equivalent to two beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	11 2 809
Rural hospitals	16 450
Tuberculosis hospitals	2 547
Psychiatric hospital	1 242

During the year 70 412 in-patients were treated in these institutions.

In 1964 out-patient services were provided at 11 hospital out-patient departments, where 323 195 consultations were given. In addition, 64 health centres, subcentres and health posts and ten mobile units provided out-patient care to approximately 270 000 persons.

Medical and Allied Personnel

In 1963, there were 219 physicians employed by the Government—one physician for 9250 inhabitants. Other health personnel employed by the Government included:

Dentists	29
Pharmacists	11
Fully qualified nurses	119
Other nursing personnel	782
Sanitary engineer	1
Sanitary inspectors	70
Physical therapists	6
Laboratory technicians	95
X-ray technicians	24
Health educators	15
Social workers	9
Statisticians	2

Communicable Disease Control and Immunization Services

According to the statistics which have been collected during the period under review from all institutions administered through the Directorate-General of Public Health, the following were the commonest conditions from which patients seeking medical care were suffering: intestinal parasitoses (27.1 per cent. of patients), bronchitis (15.7 per cent.), influenza and the common cold (15.6 per cent.), diarrhoeal diseases (14.4 per cent.), anaemias (13.8 per cent.), malaria (2.8 per cent.).

In 1964 it was estimated that the incidence of certain diseases per 1000 population was of the following order: intestinal parasitoses (657), gastro-enteritis (261), gonorrhoea (65), measles (43), whooping-cough (39), syphilis (14). It is clear that the common communicable diseases are the chief health hazard in Honduras, and programmes are already being operated to deal with them. In the case of the intestinal parasitoses and infections and the water-borne diseases generally, the National Water Supply and Drainage Service has instituted pilot programmes for the provision of potable water and latrines in rural areas. The diseases which can be controlled by immunization, and in particular whooping-cough, diphtheria, tetanus, the typhoid and paratyphoid fevers and poliomyelitis, are the subject of active campaigns. The same applies to smallpox, although there has been no case of the disease in Honduras for more than 30 years. Malaria control is the responsibility of the National Malaria Eradication Service. Tuberculosis is reported as affecting 40 per 1000 of the population and has been the subject of special control measures for several years. It continues to be of importance as a public health problem. Leprosy is still to be found, particularly in southern Honduras. Since 1961 it has been the subject of an intensive campaign based on case-finding, ambulatory treatment, hospitalization where necessary and periodic supervision of all contacts.

In 1963, the following immunization procedures were carried out:

Smallpox	89 235
Diphtheria, whooping-cough and tetanus	55 415
Poliomyelitis (Salk vaccine)	24 234
Poliomyelitis (Sabin vaccine)	9 679
Typhoid and paratyphoid fevers	9 266

Chronic and Degenerative Diseases

Since 1960 a clinic for the early detection of uterine cancer has been functioning in the capital. In 18 288 women who had attended the clinic between 1960 and 31 December 1964, 463 cases of the disease were discovered.

Specialized Units

In 1964, 61 maternal and child health centres were attended by 16 520 pregnant women, 35 212 infants under one year, 60 974 children aged between one and five years and 34 940 schoolchildren. In the same period 3704 pregnant women and 18 323 children under five years were visited. The 22 dental health units treated 22 401 persons and 4563 consultations were given at the psychiatric out-patient clinic. Nearly 280 000 examinations were carried out in 34 public health laboratories. The majority of them were in parasitology, bacteriology, serology and haematology.

Environmental Sanitation

In 1964, in the one community with a population exceeding 100 000 (Tegucigalpa), 87 741 persons out of a total of 133 887 had a piped water supply to their dwellings and 25 944 had access to public fountains. Elsewhere, in a total population of approximately 1 750 000, about 160 000 persons had a piped water supply in their homes.

Tegucigalpa is served by a sewerage system, but over 40 000 of its inhabitants have to depend on septic tanks or latrines.

Major Public Health Problems

Two of the major health problems of Honduras have already been referred to. They are the high incidence of communicable disease and the serious deficiencies in environmental hygiene, particularly as regards the provision of potable water supplies and the availability of facilities for the disposal of sewage and other wastes. A third major health problem is presented by the nutritional state of many population groups. It is estimated that, taking the population of Honduras as a whole, the average daily diet shows a calorie deficiency of 19 per cent. and a protein deficiency of 13 per cent. in comparison with the commonly accepted standards. These deficiencies are more marked in urban communities than in rural. The diet is also deficient in calcium, iron and vitamins. The situation is being studied by the Institute of Nutrition of Central America and Panama (INCAP), of which Honduras is a member, with a view to formulating a national nutrition policy.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The major developments of importance to the health service were:

- (1) the recognition by the Government of the national health plans of 1958 and 1962 as part of the national plans for economic and social development;
- (2) the establishment of a national institute of social security organized on a decentralized basis;
- (3) the creation of a national water supply and drainage service;
- (4) the expansion of the public health services to the rural areas, and in particular the institution of programmes for tuberculosis and leprosy control and the provision of hospitals and social assistance facilities there;

(5) the combination, as from 1964, of the public health and hospital services in certain areas.

National Health Planning

Two national health plans have been prepared for Honduras. The first covered the period 1958-1963, and was subsequently extended to 1965. The second, which is now operative, is concerned with the five-year period 1965-1969. The first plan was drawn up on classical lines, using traditional methodology. Amongst its objectives were the reorganization of the Directorate-General of Public Health, the decentralization of the operation of the services and the creation of the district health administrations. The second plan has been formulated according to a new methodology, which aims at making in the first instance a diagnosis of a country's health situation. The plan also includes projections of the population and of its health service requirements for the decade 1965-1974. It establishes targets for various stages of the period 1965-1969 and provides for evaluation and implementation.

International Collaboration

Honduras participates in many aspects of the programmes of the Pan American Health Organization and the World Health Organization. It also collaborates with other countries in the Region, including Mexico and Panama, in the exchange of information regarding malaria eradication. Several consultations have recently taken place with regard to the particular problems of malaria eradication in the frontier zones. Similar consultations are held with regard to standards for certain food-stuffs, regulations regarding their production and laboratories for food analysis.

Government Health Expenditure

In 1963 central and intermediate government agencies devoted a total of 10.2 million lempiras to the provision of health and related welfare services. A further sum of 1.9 million lempiras was spent on capital account for the expansion of health services and the development of other welfare services.

JAMAICA

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 634 603	1 641 780	1 686 783	1 727 556
Number of live births	66 945	66 948	66 806	68 906
Birth rate (per 1000 population)	41.0	40.8	39.6	39.9
Number of deaths	14 376	14 844	15 288	13 476
Death rate (per 1000 population)	8.8	9.0	9.1	7.8
Natural increase (per cent.) .	3.22	3.18	3.05	3.21
Number of deaths, 1-4 years	1 448	1 520	1 649	...
Number of Infant deaths . .	3 228	3 218	3 289	2 714
Infant mortality rate (per 1000 live births)	48.2	48.1	49.2	39.4
Number of maternal deaths .	114	103	118	...
Maternal mortality rate (per 1000 live births)	1.7	1.5	1.8	...

Of the 15 288 deaths reported in 1963, the main causes were: chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (1355), vascular lesions affecting the central nervous system (1340), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1333), malignant neoplasms (1327), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1234), pneumonia (802), senility without

mention of psychosis, ill-defined and unknown causes (705), avitaminoses and other deficiency states (564), hypertension (558), accidents (474, including 155 in motor-vehicle accidents).

The communicable diseases most frequently notified in 1964 were: gonorrhoea (28 220), syphilis, new cases (1774), influenza (1251), whooping-cough (651), tuberculosis, all forms, new cases (362), typhoid fever (214), yaws, new cases (215), measles (142), dysentery, all forms (131), tetanus (104), infectious hepatitis (71), poliomyelitis (57).

Organization of the Public Health Services

The Minister of Health, who is an elected member of the Government, has the responsibility for all health matters in the country. He is assisted by the Chief Medical Officer, who advises on all technical matters, and by the permanent secretary, who advises on all administrative matters. Each of the two main divisions, preventive and curative, are headed by a principal medical officer.

The curative services are provided by hospitals, health centres and dispensaries. They are grouped for administrative purposes into 45 medical districts and eight regional hospital boards. The hospital boards are responsible to the Minister for the administration of the hospitals. On the average, each regional board administers three hospitals. The medical districts

without hospitals are at present administered directly by the Ministry of Health.

The preventive services are administered by the local boards of health, which are the elected parish councils. The Ministry of Health assigns a medical officer of health to each parish. There are 13 such local health departments.

Hospital Services

In 1963, the total number of government hospitals and other health institutions providing in-patient accommodation was 29, with 7203 beds (equivalent to a bed/population ratio of 4.3 beds per 1000) distributed as follows:

Category and number	Number of beds
General hospitals *	22 3 021
Tuberculosis hospitals	2 402
Maternity hospital	1 164
Paediatric hospital	1 200
Psychiatric hospital	1 3 115
Rehabilitation hospital	1 116
Leprosarium	1 185

* Including the University Hospital of the West Indies.

These institutions, excluding the paediatric hospital, admitted 94 317 patients.

Out-patient care was available at 22 hospital out-patient departments, including the out-patient department of the University Hospital of the West Indies, 79 health centres and 63 dispensaries.

Medical and Allied Personnel and Training Facilities

In 1963, there were 784 doctors on the register in Jamaica, of whom 223 were in government service. The doctor/population ratio was thus one to 2150. Other health personnel included:

Dentists	120
Pharmacists	543
Fully qualified midwives	2 901
Fully qualified nurses	3 495
Fully qualified nurses with midwifery qualifications .	830*
Psychiatric nurses	461
Ward assistants	100*
Veterinarians	16
Sanitary engineers	2*
Sanitary inspectors	85*
Physical therapists	9*
Laboratory technicians	82*
X-ray technicians	25*
Physicists	2*
Dietitians	6*

* In government service.

The Neosha Water School organized under the auspices of the United States Agency for International Development a supervisory and administrative course for senior public health inspectors and a course in vital

and health statistics. Both these courses are sponsored by WHO.

Communicable Disease Control and Immunization Services

Malaria has been eradicated. There have been no quarantinable diseases in Jamaica recently and most of the infectious diseases do not constitute serious public health problems. The pattern of the causes of death has changed remarkably in the past 20 years and in 1963 no communicable disease figured among the ten leading causes of death.

In 1963 the following immunization procedures were carried out:

Poliomyelitis (Sabin vaccine)	354 017
Poliomyelitis (Salk vaccine)	44 382
Diphtheria, whooping-cough and tetanus	260 672
Typhoid and paratyphoid fevers	248 228
Measles	103 201
BCG	56 797
Smallpox	55 061

Specialized Units

In 1963, maternal and child health services were based on 241 pre-natal centres and 248 child health centres at which 20 805 pregnant women and 25 483 pre-school children received care. A total of 37 697 domiciliary visits were paid to pregnant women, 90 884 to children under one year of age and 1630 to children aged between one and five years. There were 46 257 deliveries (nearly 70 per cent. of all live births) attended by a doctor or qualified midwife.

Only the metropolitan area has a school health service unit. In the other areas, the medical officer and the public health nurses visit the schools at regular intervals. In 1963, 103 468 schoolchildren were under medical supervision and 35 503 children had dental examinations. Fifty-four dental service units gave treatment to 147 253 patients.

Jamaica has also an independent medical rehabilitation centre and two hospital rehabilitation departments, two psychiatric out-patient clinics, a tuberculosis out-patient clinic and ten venereal disease clinics. There is one public health laboratory, which carried out nearly 490 000 examinations of all kinds in 1963.

Environmental Sanitation

In 1963, 521 665 of Jamaica's inhabitants had piped water to their dwellings, 615 625 relied on standpipes and 45 445 depended on community or private wells. One community was provided with sewerage systems serving 59 000 persons.

Major Public Health Problems

The majority of the public health problems in Jamaica are due to social, economic and population factors. Environmental sanitation in the rural areas is a major problem. The 1960 census shows that of 401 771 dwellings only 19.9 per cent. were served by water closets, 73.1 per cent. by pit latrines and 7 per cent. probably had no form of sanitary installation; 21 per cent. had piped water to their dwelling, 16 per cent. had piped water to their yard, and 63 per cent. were dependent on rivers and other sources. Associated with this fact is the difficulty of controlling mosquitos in a tropical country; although vector-borne diseases are not at present a public health problem, the mosquitos are.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In 1955, internal self-government was granted to Jamaica. The responsibility for the health of the country was transferred from the British Government to the elected Government, which delegated the responsibility to the Minister of Health. Significant changes in the administrative arrangements resulted. Where formerly there was a department of medical services headed by a Director of Medical Services who was responsible to the Governor through the Colonial Secretary, the Minister assumed the responsibility and a new post of Permanent Secretary to the Ministry was created. In 1962, Jamaica became independent. The two major developments since that time have been the decentralization of the administration of the hospitals and the reorganization of the Ministry of Health with the assistance of a management consultant.

National Health Planning

Planning is aimed at improving the efficiency and the standards of the services which are now available. This is done through decentralization of authority and responsibility and integration of preventive and curative services at the regional level. There is a health

planning committee consisting of senior officers in the Ministry of Health and of representatives from the Central Planning Unit, the university, and the medical and social departments. Administration of the hospitals has already been decentralized. On the preventive side it is planned to regionalize the supervisory and advisory functions of the Ministry of Health and to co-ordinate the medical districts, the health services and the hospital services.

Medical and Public Health Research

Extensive research work is undertaken by the University of the West Indies and the Government gives assistance to several projects. The university is at present engaged on studies on causes of child mortality. In 1963 investigations were carried out on live measles vaccine.

International Collaboration

Jamaica maintains close relations with the United States Public Health Service, which provided assistance in a trial in smallpox vaccination using the hypo-jet injector. The United States of America also lent personnel and equipment for a mass diphtheria vaccination programme carried out in 1963. UNICEF and WHO are also assisting the country in health matters, and providing fellowships, vaccines and equipment.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure on health services was £J 5 621 619. Of this amount £J 5 055 310 was provided at the central level and £J 566 309 at the local level. An additional sum of £J 334 300 was spent on capital account for the improvement and expansion of health services. In terms of expenditure per head of population, current expenditure was equivalent to £J 3.3, as compared with £J 3.0 per head in the fiscal year 1962/63.

MARTINIQUE

Population and Other Statistics

At the last census, taken in October 1961, the population of Martinique was 290 679. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964*
Mean population	289 323	296 100	302 800	310 000
Number of live births **	10 573	10 663	10 217	10 500
Birth rate (per 1000 population) . .	36.5	36.0	33.7	33.9

	1961	1962	1963	1964*
Number of deaths**	2 289	2 546	2 514	2 500
Death rate (per 1000 population) . .	7.9	8.6	8.3	8.1
Natural Increase (per cent.)	2.86	2.74	2.54	2.58
Number of deaths, 1-4 years	299	238	196	...
Death rate, 1-4 years (per 1000 population at risk)	5.9	6.1	4.9	...
Number of Infant deaths **	431	463	396	400
Infant mortality rate (per 1000 live births)	40.8	43.4	38.8	38.1

* Approximate figures.

** Excluding live-born infants dying before registration of birth.

The communicable diseases most frequently notified in 1963 were: typhoid fever (218), tuberculosis, all forms, new cases (123), leprosy (24), measles (19), diphtheria (12), poliomyelitis (5).

Dentists	59
Pharmacists	58
Fully qualified midwives	65
Fully qualified nurses	238
Assistant nurses	121
Veterinarians	3

Hospital Services

At the end of 1961, Martinique had the following in-patient facilities:

Category and number	Number of beds
General hospitals	9
Tuberculosis hospital	1
Maternity clinics	6
Paediatric hospital	1
Children's home	1
	2 139
	170
	98
	570
	43

There were also 576 beds in homes for old people.

The in-patient establishments provided altogether 3596 beds, which is equivalent to 12.4 beds per 1000 population.

Medical and Allied Personnel

At the end of 1961, 122 doctors, of whom 107 were in government service, were working in Martinique. The doctor/population ratio was thus one to 2400. Other health personnel included:

Immunization Services

The following immunization procedures were carried out in 1962:

Typhoid and paratyphoid fevers, diphtheria, whooping-cough and tetanus	15 833
Smallpox	10 665
BCG	1 862

Specialized Units

In 1964, maternal and child care was given in 52 prenatal centres and 59 child health centres, which were attended by 453 pregnant women, 2275 infants under one year of age and 2028 children aged between one and five years. A total of 8348 domiciliary visits were paid to pregnant women, 6828 to infants and 12 172 to children aged between one and five years. Of all deliveries, 8778 (90 per cent.) were conducted by a doctor or qualified midwife. Health supervision was given to 91 544 schoolchildren (74 per cent. of the total school population) at 35 school health centres. There were 1294 new psychiatric out-patients who attended 3055 consultations. The laboratory of the Pasteur Institute carried out 215 537 examinations during the year.

MEXICO

Population and Other Statistics

At the last census, taken in June 1960, the population of Mexico was 34 923 129. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population.	36 091 006	37 233 227	38 416 043	39 642 671
Number of live births .	1 647 006	1 705 481	1 756 624	1 849 408
Birth rate (per 1000 population)	45.6	45.8	45.7	46.7
Number of deaths	388 857	403 046	412 834	408 275
Death rate (per 1000 population)	10.8	10.8	10.7	10.3
Natural Increase (per cent)	3.48	3.50	3.50	3.64
Number of deaths, 1-4 years	63 858	67 340	67 876	66 599
Death rate, 1-4 years (per 1000 population at risk)	13.3	13.6	13.3	12.7
Number of Infant deaths .	115 666	119 295	120 361	119 235
Infant mortality rate (per 1000 live births)	70.2	69.9	68.5	64.5
Number of maternal deaths	3 186	3 151	3 041	3 259
Maternal mortality rate (per 1000 live births) .	1.9	1.8	1.7	1.8

Of the 408 275 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (71 743), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (53 292), pneumonia (49 246), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (44 064), accidents (18 931, including 2752 in motor-vehicle accidents), malignant neoplasms (14 933), bronchitis (11 233), tuberculosis, all forms (9535), vascular lesions affecting the central nervous system (9102), homicide and operations of war (8781), measles (7908).

The communicable diseases most frequently notified in 1964 were: measles (73 180), influenza (68 735), whooping-cough (39 119), amoebic dysentery (31 155), gonorrhoea (18 367), syphilis, new cases (17 697), tuberculosis, all forms, new cases (15 834), typhoid and paratyphoid fevers (8160), bacillary dysentery (3809), infectious hepatitis (2940).

Organization of the Public Health Services

The Ministry of Health and Welfare, which is under the direct control of the President of the Republic, is responsible for public health in Mexico. Two under-secretariats have been established within the Ministry of Health and Welfare, one for health and one for welfare. Administrative matters are in the charge of a senior officer. The Under-Secretariat for Health includes the following six directorates: epidemiology and health programmes, biostatistics, industrial health, health education, public health training, and public health research. Directorates under the control of the Under-Secretariat for Welfare include medical assistance, mental health and rehabilitation, maternal and child health, dental health services, social welfare and nursing. The Ministry of Health and Welfare is directly responsible for planning, supervision and inspection, public relations, legal questions, malaria eradication, hospital construction and environmental sanitation. Two directors-general, namely the Director-General for the co-ordination of public health services in the 29 states and the two territories, and the Director-General for the Federal District, are in charge of the execution of the health programmes in collaboration with the state governments concerned. The national social security institutes for workers and civil servants cover altogether about 8.2 million persons and operate an independent network of medical and social services.

Hospital Services

In 1962, Mexico had 1925 hospitals, providing 62 964 beds (equivalent to a bed/population ratio of 1.7 per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	1 419
Infectious diseases hospitals . .	32
Maternity hospitals	415
Paediatric hospitals	28
Psychiatric hospitals	31
	36 101
	7 287
	6 123
	1 790
	11 663

Medical and Allied Personnel

In 1961, there were 20 590 doctors in Mexico, which is equivalent to a doctor/population ratio of one to 1800. Other health personnel included:

Medical assistants	874*
Dentists	2 180
Pharmacists	3 400
Fully qualified nurses	4 995*
Fully qualified nurses with midwifery qualifications	2 690*
Midwifery and nursing auxiliaries	5 490*
Veterinarians	850

* In government service.

Communicable Disease Control and Immunization Services

Morbidity and mortality from malaria have been considerably reduced during recent years. The number of deaths from malaria dropped from nearly 25 000 a year in 1953 to 27 in 1964 and the number of cases from an estimated 2.5 million to 8000 in 1965. Thanks to DDT spraying, 76 per cent. of the initial malarious area has been freed from the disease. It is estimated that there are about 400 000 tuberculosis patients in Mexico. Control measures against this disease include BCG vaccination, case-finding, treatment of cases and examination of contacts. There are about 17 000 cases of leprosy in the country. Following intensive DDT spraying the number of cases of typhus dropped from nearly 3000 in 1943 to 32 in 1965. In 1964 the morbidity rates per 100 000 inhabitants for diphtheria, whooping-cough, tetanus and poliomyelitis were 1.1, 98.7, 2.1 and 1.0 respectively. These low rates are the result of the intensive vaccination campaigns which have been carried out against these diseases. Approximately 500 000 persons are suffering from pinta and are treated with penicillin. Onchocerciasis still occurs in certain localities and it is estimated that about 40 000 persons suffer from the disease.

The following immunization procedures were carried out in 1963:

Smallpox	7 345 366
Poliomyelitis (Sabin vaccine)	2 379 600
Whooping-cough	629 880
BCG	543 370
Diphtheria and tetanus	444 825
Typhoid and paratyphoid fevers	107 654
Tetanus	76 511

Chronic and Degenerative Diseases

Endemic goitre occurs in several areas and there are altogether about 4.5 million cases. The use of iodized salt is being organized. Rheumatic fever is relatively common in Mexico, and is a significant cause of heart disease. Malnutrition is also encountered, particularly in pre-school children, and supplementary feeding programmes are being carried out.

Specialized Units

Maternal and child health services are provided at health centres. Nearly 500 000 deliveries were conducted by a doctor or qualified midwife in 1964. The school health services are under the control of the Ministry for Public Education, which maintains health services in all the schools of the capital city and also three specialized clinics. Elsewhere in the country, school health services are provided through the health centres. In 1964 there were 192 official dental health

units, where 420 460 patients attended. The out-patient rehabilitation services recorded 27 149 attendances. There were 18 903 attendances at the 21 units for mental hygiene and 22 614 at the 52 psychiatric out-patient clinics. There were 780 public health laboratories which carried out 1 479 383 examinations.

Environmental Sanitation

By 1963 the Ministry for Water Resources had completed 2188 drinking-water supply systems, serving over 9.5 million of the total population, and 163 sewerage systems, serving over four million. By 1964 the Ministry of Health and Welfare had provided drinking-water supplies in 1108 rural communities with a total population of nearly one million.

Major Public Health Problems

During the period 1955-1964 the main causes of death were gastro-enteritis and colitis, pneumonia, tuberculosis, diseases peculiar to early infancy and infectious and parasitic diseases. The health activities have therefore been directed towards the reduction of mortality from these diseases, high priority being given to programmes for the improvement of nutrition and environmental sanitation and to vaccination campaigns. The medical and health problems in Mexico, particularly as regards the provision of medical services, are made more acute by the population increase, which results in an increasing demand for such services.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The period 1955-1964 was marked by a very considerable population increase which should be related to an average natural increase of at least 3 per cent. The population increased from 30 497 114 in 1955 to 39 642 671 in 1964. This marked upward movement was accompanied by growing urban concentrations, particularly in the north, near the United States border. Illiteracy has been notably reduced and the number of children attending school has increased every year. Despite the demographic explosion, Mexico has recorded a major increase in food production which is partly due to the mechanization of the agricultural sector. Great efforts have been directed towards the industrial development of the country, and the rail and road networks have been improved. The most important developments in the health field are the increasing importance and popularity of the social security schemes, the improvement and extension of public health training and the reorganization of hospital administration.

National Health Planning

Since 1958, national planning has been the responsibility of the Planning Directorate-General in the Secretariat of the President of the Republic. In 1963 a planning directorate was created in the Ministry of Health and Welfare. This directorate is responsible for the preparation of the six-year health plans. The current health plan covers the years 1965-1970. The main objective of this plan is to maintain the freedom of the country from diseases such as smallpox and insect vectors such as *Aedes aegypti* which have already been eradicated. High priority is also given to the eradication of endemic and epidemic diseases. It is planned to achieve the eradication of malaria and of pinta by 1970. The plan also includes programmes for intensive vaccination campaigns with a view to achieving the eradication of typhus, poliomyelitis, tuberculosis, whooping-cough, diphtheria and tetanus. Other programmes have been prepared for the control of onchocerciasis, rabies, leprosy, venereal diseases, endemic goitre and rheumatic fever, and for the improvement of environmental sanitation and the provision of safe water supplies.

Medical and Public Health Research

Since 1964, the various research laboratories and scientific institutes which come under the control of the Ministry of Health and Welfare have been part of the Directorate for Public Health Research. This directorate supervises the following group of institutions: the Institute of Health and Tropical Diseases, the Laboratory for Immunological Research, the National Registry of Morbid Anatomy, the National Institute of Virology, the National Institute of Hygiene, the National Public Health Laboratory, the BCG Laboratory and the Vaccine Institute. Research activities carried out during the period 1964-1965 included intestinal parasitosis, salmonellosis, leptospirosis, tropical dermatoses, rabies, brucellosis and rheumatic fever.

International Collaboration

Mexico has continued to collaborate in health fields with the neighbouring countries and with other countries of the Americas. It is an active Member of UNICEF and WHO.

Government Health Expenditure

In 1965 the total health expenditure by central government agencies amounted to 2774 million pesos, of which 907 million pesos were provided by the Ministry of Health and Welfare and 1867 million pesos from social security funds. This was equivalent to an expenditure—by central government agencies only—of 68 pesos per head on these services.

MONTSERRAT

Population and Other Statistics

At the last census, taken in April 1960, the population of Montserrat was 12 108. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	12 538	12 945	13 568	13 500
Number of live births	335	324	341	364
Birth rate (per 1000 population)	26.7	25.0	25.1	27.0
Number of deaths	136	128	116	107
Death rate (per 1000 population)	10.8	9.9	8.5	7.9
Natural increase (per cent.)	1.59	1.51	1.66	1.91
Number of infant deaths	30	27	17	15
Infant mortality rate (per 1000 live births)	89.6	83.3	49.9	41.2

The main causes of the 107 deaths recorded in 1964 were: vascular lesions affecting the central nervous system, benign neoplasms and neoplasms of unspecified nature, arteriosclerotic and degenerative heart diseases, malignant neoplasms.

Hospital Services

In 1962, there was one general hospital with 69 beds, which is equivalent to a bed/population ratio of 5.3 per 1000. Out-patient services were provided in 1964 at three health centres and seven medical out-posts.

Medical and Allied Personnel

In 1962, Montserrat had three doctors, equivalent to one doctor for every 4300 inhabitants. Other health personnel included:

Dentist	1
Pharmacists	2
Fully qualified midwives	9
Fully qualified nurses	26

Specialized Units

In 1964, maternal and child health services were based on ten pre-natal and child care centres, at which 277 pregnant women, 292 children under one year and 1396 children aged between one and five years received medical and health care. Domiciliary visits were paid to 984 children. A total of 272 deliveries (76.1 per cent. of all deliveries) were attended by a doctor or qualified midwife. The total school population of 1357 children was under the medical supervision provided at ten school health units. Montserrat had also one dental health unit.

Environmental Sanitation

Of the total population in 1964, approximately 4400 were served with piped water to their dwellings and 9500 had to depend on public fountains.

Government Health Expenditure

In 1964, the total general government current expenditure amounted to WI \$2 244 785, of which WI \$247 558 (i.e., 11.0 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of WI \$18.3 per head on these services, as compared with WI \$18.0 per head in 1961. A further sum of WI \$10 949 was spent on capital account for the development of health facilities.

NICARAGUA

Population and Other Statistics

At the last census, taken in April 1963, the population of Nicaragua was 1 535 588. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 452 831	1 496 084	1 540 655	1 596 860
Number of live births	62 335	65 829	67 596	68 372
Birth rate (per 1000 population)	42.9	44.0	43.9	42.8
Number of deaths	12 185	11 799	11 593	11 918
Death rate (per 1000 population)	8.4	7.9	7.5	7.5
Natural increase (per cent.)	3.45	3.61	3.64	3.53

	1961	1962	1963	1964
Number of deaths, 1-4 years	2 022	1 687	1 731	1 557
Death rate, 1-4 years (per 1000 population at risk)	9.5	7.7	7.8	7.0
Number of infant deaths	4 058	3 575	3 682	3 726
Infant mortality rate (per 1000 live births)	65.1	54.3	54.5	54.5
Number of maternal deaths	117	115	88	84
Maternal mortality rate (per 1000 live births)	1.9	1.7	1.3	1.2

The main causes of the 11 918 deaths recorded in 1964 were: gastro-enteritis, accidents, heart diseases, pneumonia and malaria.

The communicable diseases most frequently notified in 1964 were: malaria, new cases (13 016),

influenza (3016), gonorrhoea (1942), tuberculosis, all forms, new cases (1241), syphilis, new cases (1029), measles (559), whooping-cough (556), typhoid and paratyphoid fevers (313), poliomyelitis, paralytic cases (47).

Organization of the Public Health Services

The Ministry of Public Health is responsible for the organization and administration of the public health services. It is headed by a minister and a vice-minister, who are supported by an advisory public health council and the units concerned with the international organizations, public relations, and planning. The Directorate-General of Public Health comprises the following departments: health promotion, health protection, administration and general technical services. For administrative purposes, the country is divided into health regions with local health services.

Other institutions concerned with the provision of health services are: the National Social Welfare Union, the National Social Security Institute, the Red Cross of Nicaragua, the private and industrial sector, the municipalities and the Housing Institute.

Hospital Services

In 1960 Nicaragua had 29 hospitals, providing 3328 beds (equivalent to a bed/population ratio of 2.3 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	26
Tuberculosis hospital	1
Psychiatric hospital	1
Leprosarium	1
	68

Out-patient facilities were available in 1963 at three polyclinics, 47 health centres, 47 dispensaries and 70 medical aid posts and from seven mobile health teams.

Medical and Allied Personnel

In 1960, Nicaragua had 524 doctors, which was equivalent to a doctor/population ratio of one to 2800. Other health personnel included:

Dentists	93
Pharmacists	240
Fully qualified midwives	15
Fully qualified nurses	263
Auxiliary nurses	868
Sanitary engineers	216

Communicable Disease Control and Immunization Services

Malaria is endemic throughout the country. The malaria eradication programme has been in operation for six years. There is also a tuberculosis control programme with a network of mobile teams and dis-

pensaries. Venereal diseases are very prevalent and are treated in health centres and where necessary at maternal and child health units. Poliomyelitis is an endemic disease in Nicaragua with periodic outbreaks.

The following immunization procedures were carried out in 1963:

Smallpox	63 840
Poliomyelitis (Sabin vaccine)	51 207
Typhoid and paratyphoid fevers	20 340
BCG	16 296
Diphtheria, whooping-cough and tetanus	14 126

Environmental Sanitation

In 1964, of the whole population of Nicaragua, 269 300 had piped water to their dwellings, 29 500 had water from public fountains, 145 000 had water from community or private wells and 1 100 000 depended on other sources. With regard to waste disposal, 119 100 inhabitants were served by sewage treatment systems and 339 600 had individual installations.

Major Public Health Problems

The most important public health problems in Nicaragua are the high incidence of diseases such as gastro-enteritis, malaria, tetanus, tuberculosis, the increasing number of accidents, and the high infant and child morbidity and mortality. Only 10 per cent. of the whole population of Nicaragua has adequate drinking-water supplies. There are 250 000 dwellings without water supplies and sewage disposal. The housing situation is also a major public health problem. The problem of malnutrition exists, although the country produces an adequate amount of food. Malnutrition is mainly due to unbalanced diets and uneven distribution of the available foodstuffs.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The most important developments during the decade under review have been the reorganization of the Ministry of Public Health in 1964, the establishment of a health planning and evaluation directorate, the preparation of a national health plan, and the establishment of a medical college.

National Health Planning

A national health plan for the period 1964-1965 was prepared by the Ministry of Public Health and the National Social Welfare Union. It was presented in a volume of more than 300 pages and it comprised, the diagnosis, prognosis and evaluation of the health situation of the country, together with a determination of the priorities and a programme of action.

PANAMA

Population and Other Statistics

At the last census, taken in December 1960, the total population of Panama was 1 075 541. Population estimates and some other vital statistics for the period 1961-1964 (including Indian populations in the provinces of Bocas del Toro and Darién) are given in the following table:

	1961	1962	1963	1964
Mean population *	1 069 900	1 100 700	1 132 500	1 165 200
Number of live births	43 200	45 228	45 847	46 516
Birth rate (per 1000 population)	40.4	41.1	40.5	39.9
Number of deaths	8 529	7 947	9 004	8 538
Death rate (per 1000 population)	8.0	7.2	8.0	7.3
Natural increase (per cent)	3.24	3.39	3.25	3.26
Number of deaths, 1-4 years	1 162	1 091	1 438	1 205
Death rate, 1-4 years (per 1000 population at risk)	8.3	7.7	9.9	8.0
Number of infant deaths	2 352	1 925	2 180	1 984
Infant mortality rate (per 1000 live births)	54.4	42.6	47.5	42.7
Number of maternal deaths	89	81	79	74
Maternal mortality rate (per 1000 live births)	2.1	1.8	1.7	1.6

* The mean total populations for the same years, including all tribal Indians, were: 1 114 900, 1 145 700, 1 177 400 and 1 210 100 respectively.

In 1964 the total number of deaths, excluding tribal Indians, was 8454. The main causes were: senility without mention of psychosis, ill-defined and unknown causes (1635), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (662), malignant neoplasms (557), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (537), vascular lesions affecting the central nervous system (529), accidents (473, including 124 in motor-vehicle accidents), pneumonia (401), arteriosclerotic and degenerative heart disease (397).

The communicable diseases most frequently notified in 1964 were: influenza (3369), malaria, new cases (1411), tuberculosis, all forms, new cases (1275), dysentery, all forms (980), whooping-cough (939), measles (402), syphilis, new cases (222).

Organization of the Public Health Services

The Directorate-General of Public Health is part of the Ministry of Labour, Welfare and Public Health. It comprises two divisions, for special services and technical services respectively. The former has depart-

ments for tuberculosis, malaria eradication, pharmaceutical services, food and drugs, sanitation and sanitary engineering, laboratories, and mental health. The Division of Technical Services is concerned with general administration, maternal and child care, industrial health, nutrition, dental health, nursing, health education and veterinary medicine. The local administration of the health services is carried out under the Director-General of Public Health by three regional directors for the western region (Provinces of Panama, Colón and Darién), central region (Provinces of Coclé, Herrera, Los Santos and Veraguas) and eastern region (Provinces of Chiriquí and Bocas del Toro) respectively. These three regions are subdivided into 16 health areas.

Hospital Services

In 1963, Panama had 28 hospitals providing 4324 beds and cots, equivalent to a bed/population ratio of 3.7 per 1000. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	25
Tuberculosis hospital	1
Paediatric hospital	1
Psychiatric hospital	1
	1 027

In 1964, out-patient care facilities were available in 40 clinics at hospitals, one polyclinic operated by the social security organization, 30 health centres and ten dispensaries. In all, 948 917 attendances were made at these establishments.

Medical and Allied Personnel

In 1963, Panama had 492 doctors or one doctor per 2400 inhabitants. Other health personnel included:

Dentists	51
Pharmacists	39
Fully qualified midwives	12
Assistant midwives	5
Auxiliary midwives	47
Fully qualified nurses	264
Fully qualified nurses with midwifery qualifications	99
Assistant nurses	397
Auxiliary nurses	291
Veterinarians	3
Sanitary engineer	1
Sanitary inspectors	68
Physiotherapists	4
Laboratory technicians	105
X-ray technicians	31

Immunization Services

The following immunization procedures were carried out in 1963:

Poliomyelitis (Sabin trivalent vaccine)	54 682
Poliomyelitis (Salk vaccine)	517
BCG	28 563
Smallpox	23 010
Diphtheria, whooping-cough and tetanus	9 109
Yellow fever	6 381
Typhoid and paratyphoid fevers	3 134
Cholera	136

Specialized Units

In 1964, 40 pre-natal and child health centres were engaged in maternity and infant care, and were attended by 11 848 pregnant women, 57 622 children under one year and 83 931 children between one and five years of age. A total of 13 930 deliveries (29.3 per cent. of all births) were attended by a doctor or qualified midwife. Health and medical supervision was provided to 64 412 schoolchildren at 37 school health units. The patients attending the 29 dental health units numbered 285 007. The two psychiatric outpatient clinics recorded 14 358 consultations. Other specialized units included one leprosy clinic, one malaria unit and one tuberculosis clinic. During 1964, 256 590 examinations were carried out by 36 public health laboratories.

Environmental Sanitation

Of the total population in 1964, 460 663 had piped water to their dwellings, 60 079 had water from public fountains, 134 004 depended on community or private wells and 551 799 on other sources. Sewerage systems served 322 455 inhabitants and 394 271 had individual installations, either septic tanks or latrines.

Major Public Health Problems

Considerable efforts have been made to introduce the planning methodology into the health sector, and it is considered necessary to create a planning unit exclusively devoted to this aspect. Another major concern of the health authorities is the implementation of the health plan, which is adversely affected by the lack of resources.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The ten-year period under review was characterized by rapid development. The suburban areas of the capital city experienced a considerable population increase. The gross national product increased from 396 balboas per capita in 1960 to 470 per capita in 1964. Industrial activities are being extensively developed.

National Health Planning

Based on a review of the health situation in the country covering the available services, resources and programmes, which was carried out in 1961, a health plan for the central region was prepared. A subsequent analysis led to the formulation of the national health plan covering the period 1962-1970. This plan covers health organization, priorities, regionalization of activities, personnel training, finance, capital investments; building etc. The plan subsequently led to a rural development programme which was co-ordinated with the economic and social development plan for Panama.

Among the many health programmes and activities which have been initiated in connexion with the national health plan, the regionalization programme deserves special mention. A pilot area has been selected where the whole range of medical and health facilities is available and where new eradication campaigns have been launched.

Medical and Public Health Research

Public health research in Panama is mainly directed towards the provision of adequate health services and the accurate diagnosis of the health situation.

Government Health Expenditure

In 1964 the total central government current expenditure amounted to 66.2 million balboas, of which 11 million balboas (i.e. 16.6 per cent.) were spent on the provision of health services. This was equivalent to an expenditure of 9.2 balboas per head on these services. A further sum of 56 420 balboas was spent on capital account for the improvement and expansion of health facilities.

PARAGUAY

Population and Other Statistics

At the last census, taken in October 1962, the population of Paraguay was 1 816 890. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 775 500	1 816 890	1 892 000	1 981 000
Number of live births * . . .	49 405	46 925	49 551	50 859
Number of deaths **	9 285	9 311	9 958	9 478
Number of deaths, 1-4 years**	1 056	931	1 074	915
Number of infant deaths ** .	2 419	2 219	2 617	2 321
Number of maternal deaths **	97	108	119	114

* Number of recorded births.

** Number of deaths recorded in government and mission hospitals

In 1962, the main causes of death were: cardiovascular diseases, diarrhoeas, malignant neoplasms, diseases of the respiratory system, accidents, tuberculosis, tetanus, anaemias and other deficiency states, deliveries and complications of pregnancy, childbirth and the puerperium, diseases of early infancy.

The communicable diseases most frequently notified in 1964 were: influenza (16 794), ancylostomiasis (13 437), malaria, new cases (8846), syphilis, new cases (2008), whooping-cough (1601), tuberculosis, all forms, new cases (1447), measles (740), gonorrhoea (396), leprosy (339), infectious hepatitis (99), typhoid and paratyphoid fevers (51), poliomyelitis (40).

Organization of the Public Health Services

The Ministry of Public Health and Welfare, which was created in 1936, was reorganized in 1954 and in 1964. It comprises a bureau of public relations, a bureau of international health relations, a general secretariat and a legal office. The Directorate-General of Public Health, which is under the control of the Minister, has the following main departments: the Department of Technical Services, comprising the following divisions—maternal and child health, environmental sanitation, health education, nutrition, biostatistics, dental health, architecture, medical care, epidemiology, nursing, social affairs, pharmacy services, mental health and professional education; the Department for the Co-ordination of Health Services of the five health regions; the Department of Welfare; and the Administrative Department. The guiding principle in the organization of the health services in Paraguay is the centralization of the technical services

and the decentralization of the executive-administrative functions. There are several other public institutions which play an important part in the provision of health services. One is the social security scheme for workers and employees and their families, which is administered by the Institute of Social Welfare, established in 1943. This Institute operates a network of health services throughout the country. Another is the National Service for Sanitary Works, which was set up in 1962. Its main function is to promote the development of drinking-water supplies and waste disposal systems.

Recent Developments

In 1963, the regional health divisions were reorganized into five "programme areas" for the purpose of facilitating the planning, direction and co-ordination of health activities. In 1963 a department of social affairs was set up under the control of the Planning Unit. In 1964 this unit prepared a development plan for the improvement of health programmes and health institutions.

Hospital Services

In 1962 Paraguay had 179 government hospitals and establishments for in-patient care, providing 5187 beds (equivalent to 2.9 beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	124
Medical centres	43
Tuberculosis hospital	1
Infectious disease hospital	1
Paediatric clinic	1
Psychiatric clinic	1
Cancer hospital	1
Orthopaedic hospital	1
Leprosarium	1
Convalescent home	1
Old people's homes	4

Out-patient facilities were available in 1964 in 83 health centres and 182 medical aid posts run by the Ministry of Public Health and Welfare. Eight other out-patient clinics were provided in the hospitals for the army and for the police and in the hospital for infectious diseases run by the Red Cross of Paraguay. In 1964, 177 407 new out-patients attended these 273 out-patient clinics.

Medical and Allied Personnel

In 1962 there were 1082 doctors in Paraguay, of whom 610 were working in government service. The doctor/population ratio was thus one to 1700. Other health personnel included:

Dentists	303
Pharmacists	675
Registered midwives	515
Registered nurses	157
Assistant and auxiliary nurses	1 200
Veterinarians	59
Sanitary engineers and sanitarians	40*
Technical and scientific personnel	239*

* In government service.

Communicable Disease Control and Immunization Services

Diarrhoeal diseases and enteritis are endemic and constitute a very important public health problem. They were among the main causes of death during the period 1959-1963. The death rate from these diseases in infants under one year of age was 11.8 per 1000 live births in 1962 and 17.4 in 1963. Ancylostomiasis is very common and is responsible for 7.9 per cent. of all notified cases of communicable diseases. To control these diseases the health authorities place particular emphasis on the improvement of environmental sanitation, personal hygiene and dietary habits and on health education of the public through women's clubs and other groups.

Pneumonia and broncho-pneumonia are also important causes of death. The mortality rates per 100 000 inhabitants were 71 in 1962 and 72 in 1963; 42 per cent. of all deaths due to these diseases occurred in the first year of life.

Tetanus is also a very common cause of death in Paraguay, particularly among the children under one year. The tetanus morbidity rate was 14.3 per 100 000 in 1963. Immunization of pregnant women, schoolchildren and persons at risk is the main feature of the control measures.

The number of cases of syphilis has increased during the period under review, while the prevalence of gonorrhoea has diminished. The shortage of drugs and antibiotics impedes the control programme.

Surveys carried out between 1948 and 1962 showed a leprosy prevalence rate of two per 1000, with 75 per cent. of all cases in the 20 to 59 year age-group. Open lesions were found in 1788 (49 per cent.) of the 3669 cases registered in 1962. The majority of patients receive ambulatory treatment and only 10.4 per cent. were hospitalized in 1964. The tuberculosis prevalence rate was 1.21 per cent. in 1964; the mortality rate from the disease fell from 35.6 per 100 000 in 1955

to 23.2 in 1963. The BCG vaccination campaign has been almost entirely limited to the capital area, as difficulties of transport and conservation of the vaccine are serious obstacles in rural areas.

Malaria is one of the health problems requiring very high priority. It is endemic throughout almost the whole country, with a particularly high prevalence in rural areas. The seasonal outbreaks of malaria are related to the occurrence of rains and to variations of temperature. The malaria vectors in Paraguay are *Anopheles darlingi*, which is found everywhere except in central Paraguay, and *A. albitalis*. The malaria prevalence rate was 5.3 per 1000 inhabitants in 1964 as compared with 9.8 in 1961. Spraying operations, which started in 1957, were interrupted in 1961 as no progress towards eradication could be recorded.

The following immunization procedures were carried out in 1962:

Smallpox	175 705
Diphtheria, whooping-cough and tetanus	34 728
BCG	3 770

Chronic and Degenerative Diseases

Among the degenerative diseases, cancer is an important cause of mortality and morbidity. A cancer institute has been established. Great efforts are made to inform the population of the cancer problem and of the necessity for periodical examinations.

Specialized Units

The data given under this heading refer only to the services under the control of the Ministry of Public Health and Welfare and of the Institute of Social Welfare. In 1964, 265 centres were engaged in maternal and child care. They were attended by 40 595 pregnant women, 35 563 children under one year of age and 29 019 children aged between one and six years. Domiciliary care was given to 5930 pregnant women, 5767 infants and 14 476 children aged between one and six years. In the same year, 15 431 deliveries were attended by a doctor or qualified midwife. (In 1962, 42.5 per cent. of all deliveries were institutional, compared with 10.0 per cent. in 1950.) In 1964, 138 dental health units treated 77 920 patients. The two psychiatric clinics were attended by 3074 new out-patients. Twenty-eight public health laboratories carried out 167 764 examinations.

Environmental Sanitation

According to the 1962 census, 61.1 per cent. of all dwellings had only one room, and there was an

average of over five inhabitants in such dwellings. Two-thirds of all houses are constructed of poor quality materials. Fifteen per cent. of the population, or rather less than 300 000 people, have a sufficient quantity of drinking-water. This figure includes 130 000 of the inhabitants of Asunción, the capital city. The Ministry of Public Health and Welfare built 1597 wells in rural areas during the period 1957-1963 with the assistance of PAHO, UNICEF and the United States Agency for International Development. Only Asunción has a sewage disposal system, which serves 43 per cent. of its population. Asunción and five towns in the interior have waste disposal services.

Major Public Health Problems

Amongst the most important public health problems in Paraguay are the high infant and maternal mortality and the lack of adequate vital and health statistics. Medical certificates, for example, are provided only for 38.2 per cent. of all deaths and information as to causes of death is also incomplete. The compulsory notification of communicable diseases is not yet satisfactory. As a result of the considerable migration from rural areas to the capital city, certain communicable diseases, which had previously had a localized character, now tend to be spread all over the country. In the sparsely inhabited areas of the country there are considerable communication and transport difficulties which affect the provision of health services. Sizable population groups have a diet poor in quality and quantity, causing a number of deficiency states (goitre, anaemias, etc.). The deficiencies in environmental sanitation also cause serious concern.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review was marked by political and monetary stability. This facilitated the construction of a network of roads and the provision of air connexions with the interior areas of the country. River transport was also developed. Since 1953 the number of schools has increased by 47.6 per cent. and the number of school registrations by 3.6 per cent. The number of university students was 2265 in 1955 and 3782 in 1964. In 1960 the Catholic University, which is a private university, was opened. Illiteracy decreased from 34 per cent. in 1955 to 28 per cent. in 1963. The number of illegitimate births is still very high (44 per cent. of all births). There is a very strong tendency among the rural population to migrate to

the capital city and to its surrounding areas, where labour opportunities are much greater. There is also a marked migration, particularly from the central areas, to the newly colonized areas of Caaguazú and Alto Paraná. The main problems in these areas are the provision of health services and of educational facilities. These are, moreover, regions where malaria and leishmaniasis are endemic. There is also a limited seasonal migration during the sugar harvest, especially from Argentina. Tourism is developing.

National Health Planning

The technical planning secretariat of the Presidency of the Republic was established in 1962. It has an overall responsibility for all planning activities in the country and collaborates with the planning units of the various ministries. A national economic and social development plan is being prepared. Its objectives are an increase in the *per caput* income, improvement of the economic and social conditions of the population, and an increase in national productivity and exports.

The Department of Technical Services in the Ministry of Public Health and Welfare is in charge of health planning activities. The Director of this department acts as the co-ordinating officer with the technical planning secretariat.

A national health plan covered the period 1965-1966. The general directives for this plan were stated as being to reduce by half the mortality and morbidity rates for children under five years and the maternal mortality rate, and to control the prevalent communicable diseases. To accomplish these objectives it was proposed to improve, develop and extend the health services, particularly in rural areas, train health personnel at all levels, improve registration of vital events and health statistics, improve environmental health, intensify health education of the public, and stimulate community development with a view to obtaining the active participation of the population in solving health problems.

Specific long-term objectives of the plan covering the next ten years are to reduce by 50 per cent. the morbidity and mortality rates from the diarrhoeal diseases, tuberculosis, leprosy, venereal disease, acute affections of the respiratory system and intestinal parasitosis; to reduce by 75 per cent. the morbidity and mortality rates from tetanus, whooping-cough, diphtheria, measles and poliomyelitis; to eradicate malaria throughout the whole country in eight years; to intensify smallpox vaccination with a view to eradicating the disease in three years; to improve the nutritional state of all children under five years; to reduce the prevalence of endemic goitre to less

than 10 per cent.; and to extend professional assistance at birth to 80 per cent. of all pregnant women.

Medical and Public Health Research

During the period under review research activities and surveys were carried out in the fields of endemic goitre, intestinal parasitosis, nutrition, dental health and Chagas' disease.

Government Health Expenditure

In 1963 the total capital and current expenditure by the Ministry of Public Health and Welfare amounted to 280.2 million guaraníes, of which 274.1 million guaraníes were spent on current account and 6.1 million on capital account. A further sum of 315.9 million guaraníes was spent by the Ministry's Institute of Social Welfare.

PERU

Population and Other Statistics

At the last census, taken in July 1961, the enumerated population of Peru was 9 906 746. The total population, including an adjustment of 412 781 for under-enumeration and an estimate of 100 820 for the Indian jungle population, was 10 420 347. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	10 319 781	10 632 000	10 958 000	11 357 000
Number of live births	358 318	377 520	382 921	361 877
Birth rate (per 1000 population)	34.7	35.5	34.9	31.9
Number of deaths	110 613	108 636	110 088	100 353
Death rate (per 1000 population)	10.7	10.2	10.0	8.8
Natural increase (per cent.) .	2.40	2.53	2.49	2.31
Number of infant deaths . .	33 406	32 057	33 895	30 216
Infant mortality rate (per 1000 live births)	93.2	84.9	88.5	83.5
Number of maternal deaths .	284	298	331	...
Maternal mortality rate (per 1000 live births)	0.8	0.8	0.9	...

Of the 110 088 deaths reported in 1963, the main causes were: pneumonia (6030), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (5817), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (3906), tuberculosis, all forms (3338), malignant neoplasms (2950), accidents (2402, including 659 in motor-vehicle accidents), arteriosclerotic and degenerative heart disease (2167), vascular lesions affecting the central nervous system (1278), avitaminosis and other deficiency states (1198), measles (1169), bronchitis (1135).

The communicable diseases most frequently notified in 1964 were: influenza (44 773), tuberculosis, all forms, new cases (26 869), dysentery, all forms (25 884), whooping-cough (20 409), measles (20 230), gonorrhoea (7978), typhoid and paratyphoid fevers (5720), syphilis, new cases (3397), infectious hepatitis

(3211), malaria, new cases (1934), poliomyelitis (609), smallpox (454), scarlet fever (409).

Organization of the Public Health Services

Since its creation in 1935, the Ministry of Public Health and Welfare has undergone various reorganizations. It comprises the Cabinet of the Minister and the Directorate-General of Health, which has six departments: technical and supervisory services, personnel, economics, nutrition, pharmacy services, occupational health. The National Health Institute and the health planning office are also under the control of the Director-General of Health. The executive health organizations at the periphery are the health areas and the health units. Co-ordination of the various public and private health sectors at the highest level is the responsibility of the National Health Council, which defines the health policy of the country. Its chairman is the Minister of Health. The co-ordinating technical unit is the evaluation unit in the national health planning office. Co-ordinating committees also exist at the regional and local levels. Apart from the Ministry of Public Health and Welfare other ministries are also concerned with health questions in their respective fields. An important role in the health field is also played by various public, semi-public and private organizations, such as the National Health and Welfare Fund, the Special Public Health Service, the Social Security Service, the societies for public welfare, the university faculties and various local government organizations.

Hospital Services

At the beginning of 1963, Peru had 201 hospitals and establishments for in-patient care with 23 850 beds, equivalent to a bed/population ratio of 2.2 per 1000. In 1962, 335 184 patients were admitted to these hospitals and received 6 580 063 days of in-patient care. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	171
Tuberculosis hospitals	5
Maternity hospitals	9
Psychiatric hospitals	6
Cancer hospital	1
Orthopaedic hospitals	3
Leprosaria	3
Others	3
	38

Out-patient facilities were available in 1963 at 401 hospital out-patient departments, 87 health centres and 298 medical and health posts, and from 160 mobile health teams. During the year nearly two million patients availed themselves of these facilities.

Medical and Allied Personnel and Training Facilities

In 1964, Peru had 5262 doctors, of whom 4995 were in government service and 267 in private practice. The doctor/population ratio was one to 2200. Other health personnel included:

Dentists	1 655
Dental assistants	1 416
Fully qualified midwives	885
Fully qualified nurses	3 103
Assistant nurses	2 063
Auxiliary nurses	3 720
Veterinarians	18
Sanitary engineers	83
Sanitary inspectors	145
Health instructors	22
Welfare workers	141
Dietitians	113
Other health auxiliaries	896

The need for professional and auxiliary health personnel led to the establishment of a staff training programme which is under the control of the Special Public Health Service. In 1962, a training centre was opened which became the public health school of Peru in 1964. It receives technical assistance from UNICEF, the United States Agency for International Development and PAHO/WHO and is a member of the association of Latin American public health schools. The main activity of the school is to train professional personnel (doctors, hospital administrators, health educators, health planners, welfare workers, etc.).

Communicable Disease Control and Immunization Services

Although control activities operate in relation to the communicable diseases in general, particular attention has been given to tuberculosis and malaria. In 1961 it was proposed to carry out a country-wide survey which would establish the prevalence of tuberculosis and its epidemiological characteristics in the various population groups and be of assistance in the formulation of a programme for the control of

the disease and a training scheme for technical and auxiliary personnel. Because of the financial difficulties involved in the realization of such a vast programme, an immediate programme of more limited nature was decided upon. The main control measures used are tuberculin testing, BCG vaccination and ambulatory treatment. Malaria is endemic in the whole country. At the end of 1962 an area of 74 000 square kilometres along the coast with a population of 864 000 inhabitants was in the consolidation phase of the eradication programme. The rest of the country is still in the attack phase with DDT spraying.

The following immunization procedures were carried out in 1964:

Smallpox	3 353 119
Diphtheria and whooping-cough	221 139
BCG	135 691
Yellow fever	69 482
Poliomyelitis (Sabin vaccine)	11 348
Poliomyelitis (Salk vaccine)	3 867
Typhoid and paratyphoid fevers	1 041

Specialized Units

In 1963 maternal and child care was based on 87 centres, where 96 542 pregnant women, 59 065 infants under one year of age and 72 452 children aged between one and five years attended. Domiciliary care was given to 8525 pregnant women and 63 728 children, and 18 307 deliveries were conducted by a doctor or qualified midwife. A total of 121 448 schoolchildren were under health supervision at 87 school health units. There were also 64 dental clinics which gave 307 090 treatments, 49 venereal disease clinics which gave 86 995 consultations or treatments, 37 tuberculosis dispensaries with 91 043 attendances and 13 leprosy dispensaries with 3561 attendances.

Major Public Health Problems

The most important public health problem is the lack of adequate environmental sanitation. This has direct repercussions on the health condition of the population. At present only 46 per cent. of the urban population and 1.3 per cent. of the rural population have any type of drinking-water supply; 43 per cent. of the urban population have some form of sewage treatment, but the rural population has none. Under-nutrition also constitutes a serious health problem which is directly responsible for the great prevalence of communicable diseases and for the high infant and child mortality. The incidence of communicable diseases is especially high in respect of enteric diseases, tuberculosis and the diseases associated with deficient environmental conditions. The high infant mortality is one of the most serious health problems. Although there has been a marked reduction during the last 25 years, the rate is still about 100 per 1000 live births,

ranging from 200 to 67.7 per 1000 in rural and urban areas respectively. Child mortality is approximately one-third of the general mortality. The main causes of death in children are diseases of the respiratory system and those caused by poor hygiene. The shortage of health manpower, especially at the intermediate level, is also a major problem.

National Health Planning

In 1963, a health planning office was established within the Ministry of Public Health and Welfare. It is part of the whole national planning system for the economic and social development of Peru which was set up in 1962. Attached to this health planning office is the division of health statistics. In 1965, this office embarked on the preparation of the national health plan for the period 1966-1970, which will be an integral part of the general economic and social development plan for 1967-1970. Prior to the formulation of this

plan, a sectorial investment plan for 1964-1965 was prepared.

Medical and Public Health Research

During the period under review, research was undertaken in cancer, nutrition, Chagas' disease, arteriosclerosis, coronary diseases, veterinary medicine, and in other fields.

Government Health Expenditure

In 1963, according to a recent report by the Inter-American Development Bank, the percentage of the total government expenditure devoted to health services was 5.1 per cent. During the period under review the United States Agency for International Development also made funds available for several projects in the health field; combined total expenditure on these projects amounted to 662 126 soles.

PUERTO RICO

Population and Other Statistics

At the last census, taken on 1 April 1960, the population of Puerto Rico was 2 349 544. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	2 409 000	2 460 000	2 520 000	2 572 000
Number of live births	75 418	76 596	77 440	78 956
Birth rate (per 1000 population)	31.3	31.1	30.7	30.7
Number of deaths	16 364	16 548	17 350	18 566
Death rate (per 1000 population)	6.8	6.7	6.9	7.2
Natural increase (per cent.) .	2.54	2.44	2.38	2.35
Number of deaths, 1-4 years .	786	748	653	747
Death rate, 1-4 years (per 1000 population at risk)	2.8	2.7	2.3	2.7
Number of infant deaths .	3 129	3 191	3 453	4 078
Infant mortality rate (per 1000 live births)	41.5	41.7	44.6	51.6
Number of maternal deaths .	44	55	43	40
Maternal mortality rate (per 1000 live births)	0.6	0.7	0.6	0.5

Of the 18 566 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease, hypertension and other diseases of the heart (3433), malignant neoplasms (2147), congenital malformations, infections of the newborn and other diseases peculiar to early infancy and immaturity (2029), senility without mention of psychosis, ill-defined and unknown causes (1351), vascular lesions affecting the central nervous system (1350), accidents (1062, including 393 in motor-vehicle accidents),

gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1040), pneumonia (907), tuberculosis, all forms (498), diabetes mellitus (384).

Among the communicable diseases most frequently notified in 1964 were influenza (16 098), measles (7535), gonorrhoea (3218), tuberculosis, all forms (1876), infectious hepatitis (1159), syphilis, new cases (1061), scarlet fever and streptococcal sore throat (582), whooping-cough (406), bilharziasis (296).

Organization of the Public Health Services

The Department of Health, which is headed by the Secretary for Health, is organized in three main divisions for health services, public welfare services, and administration. The programme of the Department is extensive and comprehensive, covering a large range of public health and medical care activities and services. Over two-thirds of the services offered in public health units and subunits are for medical care. These services are provided by a chain of health units (or dispensaries), health centres and hospitals. In 44 of the 76 municipalities, the health centres are associated closely with a hospital which serves a number of municipal areas.

A pilot experiment in the organization of these health services on a regional basis has been under study in Bayamón since 1956. In addition, consideration is being given to an extensive reorganization of the Department of Health. The island has been divided into five health and welfare regions with delegated responsibility for certain functions which

are now carried out centrally. This should lead to co-ordination of the health and welfare services, and improve co-operation between the public health and medical care services, including the hospital and welfare services.

Hospital Services

In 1963, there were altogether 139 government and private hospitals with a complement of 12 411 beds, equivalent to 4.9 beds per 1000 population. Between them these hospitals admitted 283 589 patients in 1963. The beds were distributed as follows:

Category and number	Number of beds
General hospitals	123
Psychiatric hospitals	4
Tuberculosis sanatoria	6
Cancer hospitals	2
Orthopaedic hospitals	2
Leprosarium	1
Eye hospital	1
	67
	7 415
	2 567
	2 000
	132
	130
	100
	67

Out-patient services are provided through a variety of institutions. In 1964 there were five main regional general hospitals with fully equipped and staffed out-patient departments; they dealt with 44 840 new outpatients who made 244 300 attendances. There were 44 health centres, each of which comprises a hospital unit with from 20 to 60 beds, a public health unit, and a welfare unit. These health centres, which have a staff of doctors, nurses, midwives and sanitary and other personnel, are linked with the appropriate regional general hospital. The first health post in the network is the health unit or dispensary, of which there are 94. According to their size these units are in the charge of a physician or a graduate nurse. In addition to the health units there are a number of subunits in the rural areas.

Medical and Allied Personnel and Training Facilities

In 1964, apart from hospital interns and residents there were 1965 physicians in active practice, 1064 of them being in government service. The doctor/population ratio was thus one to 1300 inhabitants. There were also:

Dentists	448
Pharmacists	1 175
Veterinarians	88
Sanitary engineers	12
Sanitary inspectors	300
Fully qualified nurses	5 537
Fully qualified nurses with midwifery qualifications	121
Assistant nurses	5 117
Assistant midwives	868
Physical therapists	175
Laboratory technicians	428
Radiographers	360
Chiropractors	173
Opticians	86
Microscopists	395

In the University of Puerto Rico there is a school of medicine and also a school of dentistry, which are both maintained by the Government. Approximately 50 doctors each year graduate from the School of Medicine.

There are six schools of nursing, from which about one hundred nurses graduate annually. Post-graduate courses in public health nursing are also available. Trained nurses who wish to obtain a midwifery qualification do so by attending a special school which is associated with the University Department of Obstetrics and Gynaecology. Candidates who wish to qualify as assistant midwives must have had at least primary school education and are trained by nurse/midwife supervisors at the health units and health centres, where they receive both theoretical and practical instruction. The Institute of Public Health Laboratories and several technical schools respectively provide training facilities for laboratory technicians and radiographers. There is also a school of medical record librarians under the auspices of the School of Medicine.

Communicable Disease Control and Immunization Services

Malaria has been eradicated throughout the island. Tuberculosis, however, still remains a serious problem, with 527 deaths and 1693 new cases in 1963. Control measures are based on intensive case-finding, ambulatory treatment using chemotherapy, and hospitalization where necessary. Bilharziasis, though in a mild form, is very prevalent and it is estimated that from 15 to 20 per cent. of the population are infected. Six valleys are being subjected to an intensive campaign with the object of demonstrating that the elimination of the disease is feasible. Routine measures used in the valleys and elsewhere include health education, provision of pure water supplies, installation of latrines, and attacks upon the snail intermediate hosts by means of molluscicides and biological techniques.

There has been a rapid deterioration in the position as regards early syphilis. In 1964, 1061 cases were reported, as against 98 in 1960. In comparison the reported cases of gonorrhoea have remained at approximately 3000 annually. The incidence of the minor venereal diseases is very small. Priority has therefore been given to a campaign against syphilis, in which epidemiological methods and health education are used, and in which the active support of medical practitioners is sought to treat the measures directed against the disease as a team operation.

During 1963 there was a very severe epidemic of dengue and no fewer than 25 737 cases were reported.

Action is now being taken to eradicate the insect vector, the *Aedes aegypti* mosquito. The diarrhoeal diseases of infants are still very prevalent and mortality from them is high. Hospital care is provided, and there is intensive health education of mothers in personal hygiene and food preparation.

Immunization procedures are carried out on a large scale. In 1963 there were 64 301 primary smallpox vaccinations and 30 765 revaccinations. There were 56 870 primary immunizations with diphtheria/tetanus, and diphtheria/pertussis/tetanus antigens, and 24 895 booster doses were given. Adults are being encouraged to be immunized against tetanus. A comparatively small number of antipoliomyelitis vaccinations were completed with Salk vaccine, but at the same time a very large campaign was undertaken, in which 322 858 persons were vaccinated with Sabin oral vaccine.

Chronic and Degenerative Diseases

Programmes directed at the chronic and degenerative diseases are increasing in number. Cardiovascular disease in its various manifestations is the commonest cause of death and invalidity in Puerto Rico. A system of cardiovascular clinics and laboratories has been established to facilitate early diagnosis and treatment and to explore measures of prevention. Rheumatic heart disease is not amongst the most frequently encountered types of cardiovascular disease, but its incidence is high enough to warrant the institution of measures to prevent rheumatic fever and to supervise the after-care of patients who have suffered from that disease.

Cancer is the second most important cause of death. Facilities are provided for early diagnosis, treatment, social help and rehabilitation. The aim of the Department of Health is to obtain the maximum utilization of the existing resources in association with the University School of Medicine and the voluntary cancer societies.

An extensive programme has been established in the mental health field. It is based largely on outpatient clinics, where services are available for ambulatory treatment by means of chemotherapy and psychotherapy. There are 17 such clinics, which were attended by 7836 new cases in 1964. Special services are provided for alcoholics and drug addicts. Attention is also given to the needs of the mentally retarded child with behaviour problems. All this is in addition to the institutional provision to which reference has already been made. Through the Department and its organized arrangement regarding mental disorders, assistance is given to the Law Courts in the evaluation and treatment of accused persons.

Specialized Units

Maternal and child care services were provided by the Government in 1964 at 89 centres. Pre-natal care was given at 76 of these centres to 40 200 pregnant women, and 4550 pregnant women were visited. There were 76 317 deliveries in 1964 in the state or private hospitals or under organized domiciliary arrangements. This total is equivalent to 99 per cent. of all confinements. In the same period 27 724 infants under one year and 34 607 children between one and five years attended the public child care centres. In addition, 12 440 children under the age of five were visited. The whole school population had access to the 76 school health service units, and 81 655 children received services there. Dental care was provided to 134 980 persons at 63 state dental units. There were six independent and 12 hospital rehabilitation units, which were attended by a total of 17 452 new patients.

The 83 public health laboratories were responsible for carrying out 2 141 960 examinations as follows: clinical pathology, 2 039 927; morbid anatomy, 53 575; examination of water, food, etc., 48 458.

Other health care units included 19 for tuberculosis, 76 for venereal disease, 17 for mental disorders and one for leprosy.

Environmental Sanitation

By 1964, a piped water supply was provided in every one of the 76 municipal areas with a total population of 2 353 297. Of this population, 1 690 000 had piped water in their dwellings, and 207 570 obtained their water supply from public fountains. The remainder depended upon wells or other sources. Seventy-four of the 76 municipalities had installed sewerage systems, but only 861 000 of the total population living in the 76 municipalities were connected to the sewerage systems. The situation was most satisfactory in the two municipalities with populations exceeding 100 000, where 460 000 of a total of 598 000 were served.

Major Public Health Problems

In order of importance, the major health problems are the diarrhoeal diseases of young children, malnutrition—particularly that due to protein deficiencies—bilharziasis and other parasitic diseases, mental ill-health, cardiovascular disease, cancer and accidents, including those affecting children in the home and traffic accidents.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

There has been great governmental activity in both housing and education, which has caused a significant improvement in communal well-being, and contributed to the improvement of the national health situation.

Between 25 and 30 per cent. of the national budget has been devoted annually to education. As a result, nearly the whole population between six and eighteen years of age (approximately 700 000) now attends school. Before 1940 not more than four out of seven children in that age group received regular education. Adult education is strongly supported in the programme. Between 1953 and 1964 about 500 000 adults who had missed school attended courses of instruction which gave them the equivalent of an elementary or a secondary education. Emphasis is also placed on vocational and community education.

The housing programmes cover all the socio-economic groups. There is low rent housing with rents from US \$6.50 to US \$40 per month for the lower income groups. There are also houses in a wide range of types and prices for the middle and upper income groups. A special feature is the "self-help" building of homes in rural areas. Some 3000 families now construct their own accommodation in this way every year.

But the extensive schemes of public health services and medical care have also been a material factor in the improvement of the health situation between 1955 and 1964. The salient facts which demonstrate this are the steady fall in the general death rate which averaged 6.9 per 1000 population during the four years 1961-1964; the decline in the infant mortality rate from 57.8 per 1000 live births (in 1952) to 51.6 in 1964 (44.6 in 1963); the increase in life expectancy at birth from 67 years to 69; the improvement in the doctor/population ratio from one to 2149 in 1955 to one to 1300 in 1964. To this list of achievements must be added the eradication of malaria.

Medical and Public Health Research

An Office of Research was established in the Department of Health in 1960. Contributions from the Government and from private sources enable it to support a large programme in public health research. The four main fields of research are social science (in which there are six projects), health education (two), juvenile delinquency (six) and public health (six).

The projects cover a large number of subjects which are relevant to the work of a government health and welfare department. Amongst the subjects studied were social factors influencing parasitic infections; epidemiology of cardiovascular conditions in Puerto Rico; experimental change in the health environment of the worker (a study of the reaction of the worker to the introduction of a special glove for sugar-cane cutting); and traffic accidents and their relation to driver licensing.

Research in the medical and biological sciences is carried out under university and other auspices, but its extent is not known precisely and is the subject of current review.

International Collaboration

Puerto Rico's collaboration in international health work is limited to making its health data, programmes, installations and personnel available to students and WHO's travelling fellows who are seeking training opportunities in the organization and management of integrated health care services on a regional basis.

Government Health Expenditure

In the fiscal year 1962/63 the general government current expenditure on health services amounted to US \$70.3 million. This is equivalent to an expenditure of more than US \$28 per head, and represents an increase of ten per cent. over the previous two years. A further sum of US \$9.9 million was spent by the Department of Health on capital account. This amount is equal to 28.6 per cent. of the total general government capital expenditure.

ST CHRISTOPHER (ST KITTS)—NEVIS—ANGUILLA

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	59 137	59 823	58 154	59 007
Number of live births	2 038	2 112	2 025	1 907
Birth rate (per 1000 population)	34.5	35.3	34.8	32.3

	1961	1962	1963	1964
Number of deaths	711	587	569	545
Death rate (per 1000 population)	12.0	9.8	9.8	9.2
Natural increase (per cent.)	2.25	2.55	2.50	2.31
Number of infant deaths	206	129	196	102
Infant mortality rate (per 1000 live births)	101.1	61.1	96.8	53.5

The communicable diseases most frequently notified in 1965 were: whooping-cough (431), influenza (332),

measles (321), gonorrhoea (83), dysentery, all forms (59), tuberculosis, all forms (25), syphilis, new cases (19).

Organization of the Public Health Services

The Health Department of St Christopher (St Kitts)-Nevis-Anguilla comes under the control of the Minister of Social Services and all medical and health services are provided by the Central Government alone. The services are administered by the Chief Medical Officer, who is also Registrar General. The Chief Medical Officer is *ex-officio* Chairman of a Central Board of Health, which is a statutory body charged with advising the Minister of Social Services on all health matters. It also guides the work of the district boards of health of which there are five, covering the three islands. The Health Department is organized into central administrative services, hospital services and district services with preventive functions including dental care of schoolchildren. These constitute the only local health services.

Hospital Services

In 1963, there were two general hospitals with 160 beds and two rural hospitals with 45 beds, to which 3312 patients were admitted during the year. In addition to these hospitals there were also three old people's homes, with 134 beds, providing simple forms of medical care. The grand total of beds was thus 339, equivalent to 5.8 per 1000 population.

The sugar industry operates a general clinic for out-patients at the sugar factory in St Christopher (St Kitts). Certain categories of persons, including children under 15 years, labourers over 60 years and all welfare cases, receive free medical attention from government doctors. The treatment of certain diseases such as venereal disease, yaws, leprosy and common infectious diseases, is free of charge, and ante- and post-natal services are also provided free of charge.

Medical and Allied Personnel

In 1965, there were 14 registered full-time and part-time doctors in St Christopher (St Kitts)-Nevis-Anguilla. The doctor/population ratio was one to 4240. Other health personnel included:

Dentists	3
Pharmacists	23
Nurses	86
Nurses with midwifery qualifications	85
Student nurses	57
Public health engineer	1
Health inspectors	17
Laboratory technicians	4
Radiographer	1

Communicable Disease Control and Immunization Services

Malaria was eradicated in the territory more than a decade ago. A BCG vaccination programme was carried out in 1954, and another vaccination campaign is planned for 1966/67. Yaws has not occurred since 1955. Bilharziasis is no longer a problem in the islands. There is, however, one remaining focus of snail hosts. Venereal diseases continue to be prevalent but no active control campaign has yet been organized. A few sporadic cases of polio-myelitis occur each year. Gastro-enteritis continues to be a problem in the islands and is among the main causes of death in children under the age of five years. It is expected that education in personal hygiene and sanitation will help to improve the situation. A total of 1968 vaccinations against smallpox were given in 1965.

Major Public Health Problems

Major public health problems continue to be mosquito and fly control, the education of the community to better personal standards of hygiene and sanitation and the high incidence of gastro-enteritis in children. The improvement of nutrition is also receiving attention.

National Health Planning

Health planning is included in the current five-year general development plan. Provision was made in the plan for the construction of a new maternity wing at the Alexandra Hospital in Nevis which was ready for occupation in 1965, a small maternity unit at the hospital at Sandy Point and a complete replacement of the Cunningham Hospital in Basseterre. Specific programmes carried out during the period under review include the national nutrition scheme sponsored by FAO, UNICEF and WHO, a programme of private latrine construction, and a small project to eliminate the remaining focus of the snail *Australorbis glabratus* from the island of St Christopher (St Kitts).

International Collaboration

In addition to the help given by the international agencies, technical assistance and advice is obtained from the University of the West Indies. The United Kingdom has been assisting the islands by granting funds for the new hospital buildings and by providing the services of expatriate medical officers.

ST LUCIA

Population and Other Statistics

At the last census, taken in April 1960, the population of St Lucia was 86 108. Population estimates and some other vital statistics for the period 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	96 890	95 830	97 460
Number of live births	4 011	3 935	3 871
Birth rate (per 1000 population)	41.4	41.1	39.7
Number of deaths	1 228	1 186	1 069
Death rate (per 1000 population)	12.7	12.4	11.0
Natural increase (per cent.)	2.87	2.87	2.87
Number of deaths, 1-4 years	235	232	216
Death rate, 1-4 years (per 1000 population at risk)	2.4	2.4	2.2
Number of infant deaths	408	405	312
Infant mortality rate (per 1000 live births)	101.7	102.9	80.6
Number of maternal deaths	10	4	3
Maternal mortality rate (per 1000 live births)	2.5	1.0	0.8

The mean population estimate for 1964 was 99 050.

In 1963, the total number of deaths was 1069. The main causes were: senility without mention of psychosis, ill-defined and unknown causes; diseases peculiar to early infancy and immaturity; gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn; pneumonia; avitaminoses and other deficiency states; vascular lesions affecting the central nervous system.

The communicable diseases most frequently notified in 1964 were: gonorrhoea (1099), yaws, new cases (431), syphilis, new cases (196), tuberculosis, all forms, new cases (44), dysentery, all forms (43), typhoid fever (40), influenza (21).

Hospital Services

In 1963, the total number of hospitals and other health institutions providing in-patient accommodation was six with 555 beds (equivalent to 5.7 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospital	1 220
Rural hospitals	3 80
Psychiatric hospital	1 145
Old people's home	1 110

Out-patient facilities were available at 16 health centres. There were 10 700 new out-patients and a total of 114 041 attendances in 1963.

Medical and Allied Personnel

In 1963, St Lucia had 14 doctors, of whom 12 were in government service. The doctor/population ratio was thus one to 7000. Other health personnel included:

Dentists	3
Pharmacists	16
Fully qualified nurses	6
Fully qualified nurses with midwifery qualifications	60
Veterinarian	1
Sanitary engineers	12
Laboratory technicians	3
X-ray technician	1

Specialized Units

In 1963, maternal and child care was provided at 16 centres, which were attended by 3141 pregnant women and 3167 children. There were 2155 deliveries (approximately 54.0 per cent. of all deliveries) attended by a doctor or qualified midwife. The dental health unit provided treatment for 6047 patients and 103 new patients attended the psychiatric out-patient clinic. The public health laboratory carried out 20 723 examinations.

Environmental Sanitation

In 1964, of the total population of 99 050, 3500 were served with piped water to their dwellings, 2259 depended on public fountains and 10 900 on community or private wells. There were 3428 persons served by sewerage systems and 2500 had individual installations, either septic tanks or latrines.

Government Health Expenditure

In 1964, the total general government current expenditure on health services amounted to WI \$5 628 270. This was equivalent to an expenditure of WI \$56.8 per head on these services. A further sum of WI \$4 811 057 was spent on capital account for the development and improvement of health facilities.

ST PIERRE AND MIQUELON

Population and Other Statistics

The last census, taken in April 1962, showed a population of 4990. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 954	5 025	5 083	5 090
Number of live births *	93	119	116	126
Birth rate (per 1000 population) . . .	18.8	23.7	22.8	24.8
Number of deaths *	45	53	58	43
Death rate (per 1000 population) . . .	9.1	10.5	11.4	8.5
Natural increase (per cent.)	0.97	1.32	1.14	1.63
Number of deaths, 1-4 years	1	1	2	0
Death rate, 1-4 years (per 1000 popula- tion at risk)	3.5	3.3	6.2	0
Number of infant deaths *	1	1	2	4
Infant mortality rate (per 1000 live births)	10.8	8.4	17.2	31.7
Number of maternal deaths	0	0	0	0

* Excluding live-born infants dying before registration of birth.

Of the 43 deaths recorded in 1964, the main causes were: malignant neoplasms; vascular lesions affecting the central nervous system; diseases peculiar to early infancy and immaturity; senility without mention of psychosis, ill-defined and unknown causes.

The communicable diseases notified in 1964 included ten new cases of tuberculosis (all forms) and four cases of gonorrhoea.

Hospital Services

In 1962, St Pierre had one general hospital with 37 beds, one maternity hospital with nine beds, one *hospice* with 25 beds and one sanatorium with 24 beds. The total bed capacity of 95 beds was equivalent to 18.9 beds per 1000 population. There were no facilities for hospitalization in Miquelon. Out-patient treatment was provided at one health centre in St Pierre and at one infirmary in Miquelon. Together they recorded 11 951 attendances.

Medical and Allied Personnel

In 1962, the health personnel in St Pierre and Miquelon included four doctors, a dentist, a fully-qualified midwife, two fully-qualified nurses and 16 assistant nurses. The doctor/population ratio was one to 1260.

Communicable Disease Control and Immunization Services

Venereal diseases do not present a public health problem in the territory. An epidemic of infectious hepatitis, with 630 cases, occurred in 1962. This outbreak was attributed to the bad quality of the drinking-water. A water purification scheme is being considered.

The following immunization procedures were carried out in 1962:

Smallpox	310
Poliomyelitis	109
Diphtheria, whooping-cough and tetanus	57
BCG	5

Chronic and Degenerative Diseases

Mental debility is relatively frequent in the islands. Inter-marriage and alcoholism are suggested as causal factors. As the islands have no treatment facilities, mentally subnormal children are sent to medical institutions in Canada or France. Hypochromic anaemia is prevalent in St Pierre and Miquelon and is due to lack of sunshine.

Specialized Units

In 1964, 121 deliveries were attended by a doctor or qualified midwife. One school health centre looked after the total school population of 1349 children. At the dental dispensary 2976 patients were given treatment. There were 52 out-patient consultations for psychiatric disorders. The public health laboratory carried out 7904 examinations.

Environmental Sanitation

In 1964, the whole population of St Pierre and Miquelon living in communities was served with piped water to dwellings. All communities had sewerage systems.

Major Public Health Problems

The most important health problems in St Pierre and Miquelon are alcoholism, tuberculosis—which, however, is declining—and mental debility.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Owing to the geographical situation of the islands and to the absence of external markets, under-employment is chronic in St Pierre and Miquelon. Related to this situation is the high prevalence of alcoholism, resulting often in delirium tremens.

National Health Planning

The following programmes are being elaborated: port health inspection, school health, industrial health,

training of nursing candidates and organization of a rational campaign against alcoholism.

Government Health Expenditure

In 1964, the government expenditure on health services amounted to 79.1 million CFA francs. This was equivalent to an expenditure of 15 500 CFA francs per head, as compared with 14 000 CFA francs in 1962.

SURINAM

Population and Other Statistics

At the last census, taken in October 1950, the population of Surinam was 183 681. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population *	263 300	273 400	283 900	294 300
Number of live births	12 900	13 200
Birth rate (per 1000 population)	49.0	48.3
Number of deaths	2 310	2 412	2 406	2 292
Death rate (per 1000 population)	8.8	8.8	8.5	7.8
Natural Increase (per cent.)	4.02	3.95
Number of deaths, 1-4 years	139	196	203	175
Death rate, 1-4 years (per 1000 population at risk)	3.4	4.6	4.6	3.9
Number of infant deaths	554	631	526	512
Infant mortality rate (per 1000 live births)	42.9	47.8
Number of maternal deaths	12	17	15	15
Maternal mortality rate (per 1000 live births)	0.9	1.3

* Population excludes indigenous population living in tribes, estimated at 38 000 in 1962.

In 1964, the total number of deaths registered by cause was 2292. The main causes were: senility without mention of psychosis, ill-defined and unknown causes (629), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (244), arteriosclerotic and degenerative heart disease and other diseases of the heart (219), malignant neoplasms (150), vascular lesions affecting the central nervous system (145), all accidents (118, including 45 in motor-vehicle accidents), bronchitis (89), pneumonia (88), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (87).

The communicable diseases most frequently notified in 1964 were: gonorrhoea (2017), malaria, new cases (1681), leprosy (264), syphilis, new cases (259),

tuberculosis, new cases (162), typhoid and paratyphoid fevers (73).

Hospital Services

In 1964, Surinam had 15 hospitals and establishments for in-patient care providing altogether 1790 beds, which is equivalent to a bed/population ratio of 6.0 per 1000. Eight of these institutions, providing 1264 beds, were state-maintained. The total bed capacity was distributed as follows:

Category and number	Number of beds
General hospitals	13
Psychiatric hospital	1
Leprosarium	150

Out-patient facilities were available in 1964 in nine hospital out-patient departments, 73 polyclinics and two health centres.

Medical and Allied Personnel

In 1964, 154 doctors were working in Surinam. The doctor/population ratio was one to 2000. Other health personnel included 19 dentists, 15 pharmacists, and 76 sanitary inspectors. The latter were in the service of the Department of Public Works.

Immunization Services

The following immunization procedures were carried out in 1965:

Smallpox	5 435
Diphtheria, whooping-cough and tetanus	4 893
BCG	1 028
Yellow fever	267
Typhoid and paratyphoid fevers	127
Cholera	98

In 1964, 2100 poliomyelitis vaccinations were carried out with Sabin vaccine.

Specialized Units

The information available on these services is provided by the Bureau of Public Health. It does not include services rendered in rural areas, by the district health officers. In 1964, maternal and child welfare services were provided at five pre-natal and 15 child health centres which 2794 pregnant women, 4704 children under one year and 5494 children between one and five years of age attended. Medical supervision covered 39 532 schoolchildren (41 per cent. of the total school population). In all, 19 459 patients attended

the dental service unit. Other specialized units included one psychiatric out-patient clinic and one public health laboratory.

Environmental Sanitation

According to the census returns in 1963, of a total of 54 772 houses, 13 156 had piped water, 14 397 had water taps outside the house, 923 had their own water system and 26 296 depended for water on other sources.

TRINIDAD AND TOBAGO

Population and Other Statistics

At the last census, taken in April 1960, the population of Trinidad and Tobago was 827 957. Population estimates and some other vital statistics for the period 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	866 750	893 150	922 000
Number of live births	32 991	34 107	32 896
Birth rate (per 1000 population)	38.1	38.2	35.7
Number of deaths	6 999	6 465	6 668
Death rate (per 1000 population)	8.1	7.2	7.2
Natural increase (per cent.)	3.0	3.10	2.85
Number of deaths, 1-4 years	249	226	326
Number of infant deaths	1 481	1 313	1 344
Infant mortality rate (per 1000 live births) . . .	44.9	38.5	40.9
Number of maternal deaths	47	47	39
Maternal mortality rate (per 1000 live births) .	1.4	1.4	1.2

Of the 6668 deaths recorded in 1963 the main causes were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (867), vascular lesions affecting the central nervous system (840), arteriosclerotic and degenerative heart diseases (720), malignant neoplasms (577), pneumonia (444), hypertension (390), accidents (373 including 74 in motor-vehicle accidents), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (305), senility without mention of psychosis, ill-defined and unknown causes (303).

The communicable diseases most frequently notified in 1964 were: influenza (4398), gonorrhoea (3574), dysentery, all forms (1914), syphilis, new cases (371), tuberculosis, all forms, new cases (312), measles (285), whooping-cough (223), diphtheria (67), typhoid and paratyphoid fevers (42).

Organization of the Public Health Services

The technical services of the Ministry of Health and Housing are headed by the Chief Medical Officer,

assisted by two Principal Medical Officers for the preventive and curative services.

Hospital Services

In 1962, Trinidad and Tobago had 29 hospitals and establishments for in-patient care, providing 5452 beds (equivalent to 6.1 beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	2 1236
Rural hospitals	22 1 456
Tuberculosis hospital	1 400
Psychiatric hospital	1 1 547
Leprosarium	1 73
Old people's homes	2 740

Out-patient facilities were available in 1964 at 12 hospital out-patient departments. There were 40 063 new out-patients and a total of 334 225 attendances. In addition, out-patient care was provided at five health centres and 93 dispensaries.

Medical and Allied Personnel and Training Facilities

In 1963, Trinidad and Tobago had 350 doctors, equivalent to a doctor/population ratio of one to 2600. Other health personnel included:

Dentists	93
Pharmacists	261
Fully qualified nurses with midwifery qualifications .	1 187
Veterinarians	13

There are four schools of nursing in Trinidad and Tobago.

Communicable Disease Control

Enteric diseases and hookworm infestation are common in the islands. A great deal of work has been

done in the rehabilitation of leprosy patients. The malaria eradication programme started in 1959 and was based on residual spraying and mass chemoprophylaxis. In 1961, the whole territory was in the consolidation phase. No malaria cases have been reported since 1961. Following the successful *Aedes aegypti* eradication programme, it is still considered necessary to carry out surveys of all houses four times a year. This is to prevent reintroduction of the mosquito.

Specialized Units

In 1963, maternal and child care was provided in 85 centres which were attended by 27 148 pregnant women, 23 132 children under one year of age, and 11 610 children aged between one and five years. Domiciliary care was given to 8708 pregnant women, 16 470 children under one year and 16 029 pre-school children. A total of 16 161 deliveries (nearly 50 per cent. of all deliveries) were conducted by a doctor or qualified midwife. There were 45 dental service units attended by 78 323 patients, and three independent medical rehabilitation centres and two hospital rehabilitation departments attended by 12 000 patients. The six psychiatric out-patient clinics were attended by 926 new patients. Other specialized

units included a tuberculosis clinic, a venereal disease clinic and a leprosy clinic.

National Health Planning

With the assistance of WHO/PAHO, a national health plan was in the process of preparation and was scheduled to be completed in August 1966. A local plan for the island of Tobago has already been finalized.

International Collaboration

Assistance in developing various aspects of the health programme of Trinidad and Tobago has been provided by FAO, UNICEF, WHO and the Rockefeller Foundation.

Government Health Expenditure

In 1963, general government current expenditure amounted to WI \$200.2 million, of which 22.7 million (i.e., 11.3 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of WI \$26 per head on these services. (The above figures refer only to Trinidad.)

UNITED STATES OF AMERICA

Population and Other Statistics

At the last census of the United States of America, which was taken on 1 April 1960, the recorded population was 179 323 175.

The resident population of the United States, excluding the armed forces serving outside the country, was 188 531 000 in mid-1963. The estimated figure for mid-1964 is 191 334 000. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	183 043 000	185 822 000	188 531 000	191 334 000
Number of live births . .	4 268 326	4 167 362	4 098 020	4 027 490
Birth rate (per 1000 population)	23.3	22.4	21.7	21.0
Number of deaths	1 701 522	1 756 720	1 813 549	1 798 051
Death rate (per 1000 population)	9.3	9.5	9.6	9.4
Natural increase (per cent.)	1.40	1.29	1.21	1.16
Number of deaths, 1-4 years	16 629	16 254	16 571	15 976
Death rate, 1-4 years (per 1000 population at risk)	1.0	1.0	1.0	1.0

	1961	1962	1963	1964
Number of infant deaths .	107 956	105 479	103 390	99 783
Infant mortality rate (per 1000 live births)	25.3	25.3	25.2	24.8
Number of maternal deaths	1 573	1 465	1 466	1 343
Maternal mortality rate (per 1000 live births) .	0.4	0.4	0.4	0.3

The total number of deaths in 1964 was 1 798 051. Among the most important causes, based on a 10 per cent. sample of deaths, the following were recorded (the second figure in brackets is the rate per 100 000 population): arteriosclerotic and degenerative heart diseases (598 754; 312.9), malignant neoplasms (289 577; 151.3), vascular lesions affecting the central nervous system (198 209; 103.6), accidents (103 843, including 46 930 in motor-vehicle accidents; 54.3), hypertension (69 634; 36.4), pneumonia (57 764; 30.2), infections of the newborn and other diseases peculiar to early infancy and immaturity (35 077; 18.3), diabetes mellitus (32 279; 16.9), senility without mention of psychosis, ill-defined and unknown causes (25 259; 13.2), birth injuries, post-natal asphyxia and

atelectasis (25 245; 13.2), cirrhosis of the liver (23 164; 12.1), suicide and self-inflicted injury (20 588; 10.8), congenital malformations (20 288; 10.6), rheumatic fever and chronic rheumatic heart disease (15 923; 8.3).

The communicable diseases most frequently notified in 1963 were: measles (385 156), scarlet fever and streptococcal sore throat (342 161), gonorrhoea, civilian cases (278 289), syphilis, new civilian cases (124 137), tuberculosis, all forms, new active cases (54 062), infectious hepatitis, including serum jaundice (42 974), whooping-cough (17 135), typhoid and paratyphoid fever and other salmonella infections (15 956), bacillary dysentery (13 009), amoebic dysentery (2886), meningococcal infections (2470), trachoma (737), poliomyelitis (449), leprosy (103), malaria, new cases (99).

Organization of the Public Health Services

Within the United States most personal health services are provided by the private sector. The main responsibility for providing health services through government rests with state and local health authorities. At the national level, the Public Health Service is administered by the Surgeon-General under the aegis of the Secretary of Health, Education and Welfare, who is a member of the President's cabinet. The health programmes within the Department of Health, Education and Welfare include those of the Welfare Administration through which maternal and child health and crippled children's services are administered and assistance is provided to indigents in meeting medical expenses; and the Vocational Rehabilitation Administration, which links medical with education and employment rehabilitation. Also within the Department of Health, Education and Welfare is the Food and Drug Administration. Apart from this Department, the Veterans Administration operates a national network of hospitals providing both short-term and long-term care to veterans of the Armed Forces. The Department of Defense (Army, Navy and Air Force) maintains hospitals and clinics for treatment of Armed Forces personnel and their dependents.

The Public Health Service provides hospital and out-patient care for several groups of federal beneficiaries, such as merchant seamen and American Indians; is responsible for the quarantine and medical examination of immigrants; conducts and supports research related to health and disease; provides programme direction, consultation, and financial support to various activities in the construction of health facilities, control of environmental hazards, improvement of health services, and control of communicable and chronic diseases and accident cases; and co-ordinates international health activities, emer-

gency health activities for disaster areas, and national health statistics.

Within each state there are various governmental mechanisms concerned with the stimulation and provision of health activities including hospital construction, mental health services, dental activities, and control of environmental hazards and pollutants. State and local governments are responsible for direct health services to populations unable to pay for adequate care through private sources, and are also responsible for dealing with specific health problems which have evolved as public responsibilities.

Recent Developments, 1961-1964

During the years 1961-1964 the United States Government continued to support the established programmes in vital and health statistics, child care, disease control, hospital construction, environmental improvement, social security, medical research, etc., which in some instances are operated direct from the Department of Health, Education and Welfare, but more usually through the agencies of the states and the local government authorities.

Furthermore, the majority of these activities were extended, and new programmes were developed in a number of other fields. The campaign against air and water pollution was intensified, and financial assistance to municipal and state governments was considerably and concurrently increased. The hazards associated with the uncontrolled use of pesticides, in which public interest had been aroused, received attention, and more stringent regulations were introduced concerning both the licensing of pesticides for use in agriculture, and the permissible residue of these substances on produce.

A new federal law was enacted which will ensure greater safety in the use of drugs. *Inter alia*, it requires that new drugs be cleared for efficacy as well as safety before they are marketed; it authorizes the summary suspension of a drug so cleared on the discovery of an unsuspected hazard to health; it requires the registration of drug manufacturers and makes obligatory the batch-by-batch certification of antibiotics for the treatment of humans.

Other new programmes are concerned with the medical care services and assistance in the construction of community facilities for the mentally retarded and the mentally ill. Emphasis is being placed on the establishment and co-ordination of out-of-hospital services for the aged and chronically ill. In addition, federal funds are now available to contribute towards the cost of medical care required by elderly people with limited financial resources. Grants are available for the training of teachers of handicapped children,

and research on mental retardation is actively supported.

In the field of maternal and child care, a new advance is the encouragement of family planning services.

The continuing shortage of health personnel causes increasing concern and steps are being taken to alleviate the situation, both by the provision of additional teaching facilities in the medical and allied faculties, and by the introduction of federal loans for students of medicine, dentistry, osteopathy and nursing.

Expenditure on research in the medical and biological sciences has risen to unprecedented heights. Some account of the activities in these fields is given in the section of this review on Medical and Public Health Research (see page 175).

Hospital Services

In 1963, the total number of hospitals in the United States was 7138 with 1 701 839 beds (equivalent to 9.0 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	5 941
Tuberculosis hospitals	197
Maternity hospitals	50
Paediatric hospitals	58
Psychiatric hospitals	443
Chronic diseases hospitals . . .	102
Cancer hospitals	11
Leprology hospitals	3
Hospitals for ear, nose and throat diseases	35
Orthopaedic hospitals	51
Rehabilitation hospitals	26
Clinics for drug and alcohol addicts	17
Institutions for the mentally retarded	83
Other specialized hospitals . . .	121
	802 608
	42 138
	2 279
	6 980
	624 068
	33 003
	1 875
	825
	1 797
	4 191
	2 115
	2 425
	155 668
	21 867

An additional 462 000 beds were provided in 11 900 nursing homes with qualified nursing staff. There were thus altogether 2 163 839 beds available—equivalent to 11.5 per 1000 population.

The general and specialized hospitals recorded 27 501 997 admissions and 521 798 890 patient-days in 1963.

At the end of the same year, the facilities for general out-patient care included 5937 diagnostic or treatment centres which are mostly hospital out-patient departments; 2065 public health centres and auxiliary public health facilities and 1452 rehabilitation units.

Medical and Allied Personnel and Training Facilities

In 1963, 261 730 physicians were practising in the United States of America. Out of this total number,

18 551 were employed by the government and 243 179 were in exclusively private practice. The doctor/population ratio was one to 720. Other personnel working in the health professions in 1963 included:

Osteopaths	12 713
Dentists	105 549
Pharmacists	117 400
Veterinarians	21 600
Fully qualified nurses	550 000
Practical nurses	225 000
Nursing auxiliaries	413 900
Sanitary engineers	9 000
Sanitary inspectors	14 000
Physical therapists	12 000
Laboratory technicians	68 000
X-ray technicians	70 000

Significant advances have been made in the field of training of medical and allied personnel since 1962. These advances are reflected mainly in two major pieces of legislation: the Health Professions Educational Assistance Act of 1963, with amendments, which provides for the establishment of loan funds in schools of medicine, dentistry, osteopathy and optometry, and grants funds to assist in the construction of teaching facilities for the training of physicians, pharmacists, optometrists, podiatrists and public health personnel; and the Nurse Training Act of 1964, which provides for financial assistance to nursing students and grants funds for the construction of nursing education facilities.

Communicable Disease Control and Immunization Services

During the period 1955-1964, the poliomyelitis incidence declined from 28 985 cases in 1955 to 122 cases in 1964, of which 106 were paralytic. The widespread application of inactivated poliovaccine beginning in 1955, followed by extensive oral polio-vaccine programmes commencing in 1961, have been instrumental in effecting these changes. The diphtheria incidence declined at a constant rate during the same period. In contrast to 1984 cases reported in 1955, only 298 cases were recorded in 1964. The rate of decline of tetanus was less than that of diphtheria. Although approximately 100 cases of malaria have been reported each year since 1957, almost all are imported cases. Hepatitis, which is a major infectious disease problem, appears to follow a cyclical pattern with major peaks occurring every six to eight years. The most recent peak in the cycle was reached in 1961. Reported cases of primary and secondary syphilis almost tripled between 1958 and 1961, but between 1961 and 1964 the increase in reported cases was only 21 per cent. The control programme initiated in 1961 emphasizes the following activities: involvement of the private physician in the eradication effort, reporting and follow-up of reactive serological tests,

contact-tracing and public education. Reported cases of gonorrhoea have increased at a slightly faster rate than the population for the last several years. Clinics for the free treatment of gonorrhoea are maintained in most areas of the United States. Minor venereal diseases, such as chancroid, *granuloma inguinale* and *lymphogranuloma venereum* continue to decline.

A task force on tuberculosis control submitted a report in 1963 to the Surgeon-General on the future of tuberculosis control in the United States. Observations on the long-term effects of isoniazid in preventing tuberculosis so far show that the drug continues to affect those people who harboured quiescent infection in the years after the treatment.

The following doses of vaccines were distributed in 1963:

Poliomyelitis (Sabin vaccine)	127 174 515
Poliomyelitis (Salk vaccine)	18 984 523
Tetanus	49 612 462
Diphtheria	30 390 074
Whooping-cough	22 669 617
Smallpox	14 679 495

Chronic and Degenerative Diseases

The Division of Chronic Diseases of the Public Health Service operates control programmes against heart diseases, cancer, arthritis, diabetes, renal disease, the neurological and sensory diseases and mental retardation. The cancer control programme involves directly the clinicians, medical educators and scientists, who provide and work to improve medical services to the public. Cardiovascular diseases are the major cause of death in the United States. The development of intensive care units for patients with myocardial infarction began in 1963. Rehabilitation measures for stroke patients, methods for screening and detection of rheumatic fever victims, screening methods for peripheral vascular diseases are some of the main features of this programme. It has been estimated that the number of diabetics will increase from more than three million to approximately four million by 1970. Nearly half of the existing cases are as yet undiagnosed. Great emphasis is therefore put on case-finding methods. Renal diseases have assumed increasing importance in the general chronic disease picture. It is estimated that at least 100 000 deaths each year are due to these diseases. Much is being done in the field of their early detection and adequate treatment. The mental retardation programme includes residential care, community health activities and centres for diagnosis and treatment.

Specialized Units

In 1963, 211 446 pregnant women received services at the pre-natal service units and 494 956 pregnant

women were visited. The child health units gave services to 567 314 children under one year and 660 205 children aged between one and four years. Home visits were made to 760 404 children under one year and 819 254 children between one and four years of age. These figures are reported by the Children's Bureau; they include only the services rendered in its programme of federal-state collaboration. No information is available on health services given by other governmental agencies, voluntary (non-official) health organizations and private medical practitioners.

In 1964 there were 234 public health laboratories, which carried out 272 100 examinations.

Environmental Sanitation

As at 1 January 1963, 20 900 communities in the United States provided their population of 150 602 000 with piped water to their dwellings. As at 1 January 1962, sewerage facilities were available in 11 420 communities. Of these, 9171 communities with a population of approximately 94.1 million had complete sewage treatment, 110 (population approximately 13.2 million) had partial treatment facilities, and 2139 (population approximately 11 million) had collection only. A large number of communities had to depend on individual installations such as septic tanks and latrines.

Major Public Health Problems

The health manpower needed is in short supply. There are neither enough physicians nor enough supporting health personnel to meet the demand for services. The physician supply is the most critical element of the problem. The number of physicians in the United States has approximately doubled since 1900, while the population of the country has increased two and a half times. There are also shortages of other categories such as nurses, technicians, laboratory personnel and therapists.

A major public health concern is the organization and financing of personal health services. Medical care must be made more accessible to the population through the development and stimulation of improvements in the organization, administration and financing of health services.

Heart disease, cancer and strokes are the major killers and cripplers, causing seven out of ten deaths each year. The dental health status of Americans today is another increasingly important health problem. Great attention is being paid to the need for measures to ensure the early detection and correction of medical defects in children. In analysing the medical defects causing draft rejection, it has been

found that more than half of those defects could have been discovered when the man was of school age. The provision of health care and protection in rural areas is also a matter of concern. It has been noted that there is a continuing lag in the improvement in rural infant mortality compared with the national average, a high incidence of communicable diseases among special population groups in rural areas, a relatively heavy concentration of health manpower in metropolitan areas as compared with isolated rural areas and a high average annual number of days of restricted activity resulting from disability among farmers.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

From the viewpoint of public health, the major significant social and economic developments in the United States, during the period 1955-1964, were the rapid population growth, the increasing proportion of elderly people, the uninterrupted trend towards urbanization of the population and the continuing economic expansion. The following facts are relevant.

Between the beginning of 1955 and the end of 1964, the total population of the country is estimated to have grown from 164 600 000 to 193 500 000—an increase of 18 per cent. Between the decennial censuses of 1950 and 1960, the proportion of people aged 65 years and over increased from 8.1 per cent. to 9.2 per cent. of the whole population, while the proportion of the population inhabiting rural areas had declined from 36 per cent. to 30 per cent. In terms of 1964 prices, the gross national product and personal consumption expenditure respectively recorded increases of 41 per cent. and 46 per cent. between 1955 and 1964.

The decade was characterized by a continuing decline in the importance of the communicable diseases as causes of disability and death, by a concomitant increase in the chronic and degenerative diseases, by growing attention to environmental hazards, and by a notable expansion of medical and scientific research. In all these fields government-sponsored programmes were instituted, either to stimulate research as to causes of disease and disability, or to provide the necessary facilities for ascertainment, prevention and treatment. Training of health personnel to meet these increasing service needs was initiated or greatly extended. The National Health Survey was established. It collects, analyses and publishes data to show the amount of illness and disability in the population, the extent and use of the medical care services provided, and the economic and other effects upon the community and the individual of these departures from normal health.

Certain statistical data can be quoted to illustrate the progress which was made during the decade. The crude death rate, fluctuating slightly under the impact of outbreaks of severe respiratory infections, ranged throughout the period from 9.3 to 9.6 per 1000, and was 9.4 in 1964. The infant mortality rate declined from 26.4 per 1000 live births to 24.8. But the decline of certain of the communicable diseases is particularly significant. The poliomyelitis incidence fell precipitously from 28 985 cases in 1955 to 122 cases in 1964. The widespread application of inactivated poliovaccine from 1955 and of oral poliovaccine from 1961 have been instrumental in effecting these changes. The incidence of diphtheria has also declined with the improved immunization status of the population and better socio-economic conditions; 1984 cases were reported in 1955 and only 298 in 1964. Malaria, of which in 1935 over 100 000 new cases were recorded, has declined greatly since the end of the Second World War. Although about 100 new cases are reported each year, almost all can be definitely ascribed to infections acquired outside the country. Great progress has been made during the decade in the control of tuberculosis by chemotherapy and other methods. This is reflected in the steady decrease in the newly reported active cases of the disease. In 1957, these numbered 86 861, as compared with 53 726 in 1961 and 50 759 in 1964.

National Health Planning

In the United States of America, federal or national planning for the economic and social development of the country was almost unknown before the economic depression of the nineteen-thirties. Apart from some state and municipal planning, most of the economic and social planning was carried out by voluntary groups of citizens interested in the advancement and industrial development of their local communities.

Even now there is no overall planning agency in the Federal Government. Each of the Departments (Agriculture, Commerce, Labor, Defense and the others, including Health, Education and Welfare) does its own planning. National plans arise primarily as a result of demands from states and localities in respect of needs which they cannot themselves meet, or in consequence of the recognition, at the federal level, of major problems which call for national action.

The implementation of plans of this kind, however they originate, requires legislative authority and financial appropriations, which can be obtained only from the United States Congress. Legislative powers are commonly given for an extended period, but the

financial appropriations are usually for one year only, which ensures that the programme can be scrutinized annually.

The economic depressions of the nineteen-thirties brought about the passing of the Social Security Act and involved the Federal Government in social planning. The revolutionary discoveries in many fields of science stimulated research into the causes and treatment of disease. Medical research and the planned application of its discoveries to public needs are largely the responsibility of the United States Public Health Service. Nevertheless there is still no overall plan, encompassing all aspects of a comprehensive national health programme. Health activities in the United States are often the outcome of the co-ordination of state or local plans concerned with some specific problem. To the greatest possible extent the Federal Government encourages this local planning, because of the local interest it engenders, and provides funds to states, local health departments and related agencies and organizations for implementing their plans.

Most national health planning, however, is carried out in the Department of Health, Education and Welfare, and through its principal health agency, the Public Health Service. The planning process usually involves:

- (a) collection of data pointing to the need for the modification, extension or expansion of certain programme activities;
- (b) consideration of alternative methods for meeting these needs;
- (c) discussions with outside advisory groups or technical experts;
- (d) development of a specific plan, with appropriate financial proposals, usually for a five-year period, and preparation of such legislation as may be necessary;
- (e) review of the plan at higher levels, and ultimately in succession by the Surgeon-General and the Secretary of the Department of Health, Education and Welfare;
- (f) submission of the plan to the Executive Office of the President; whence, subject to his approval, it proceeds to Congress.

National health planning, however, is not exclusively the province of the executive branch of the Government. A large number of non-governmental health organizations may plan certain health activities which they carry out on a national basis with funds which they have collected. These organizations may also work with the Department of Health, Education and

Welfare both in supporting departmental plans and in suggesting new fields of activity.

Planning in the United States, particularly in the health field, is frequently the result of a consensus of opinion in which a large number of bodies, non-governmental and governmental, may be associated.

Medical and Public Health Research

Medical and health-related research comprises a broad area of scientific inquiry aimed ultimately at the improvement of individual and communal health and the conquest of disease and disability. It draws upon many fields of science—physical, chemical, engineering and social—and many disciplines in these fields. It includes fundamental research in the laboratory, clinical investigations and trials, epidemiological investigations, community studies and many other forms of inquiry.

The decade 1955-1964 witnessed an unprecedented expansion of these activities in the United States. Their range has been enlarged and the financial provision for their prosecution enormously increased.

No longer is the general and somewhat limited programme of medical and health-related research concerned with filling in obvious gaps in knowledge. It is formulated on a broader basis which seeks to provide facilities for the enlargement of knowledge throughout the medical, biological and social sciences. It is also purposefully directed so that the defined objectives of health programmes will influence the character and emphasis of research activities, and, in turn, benefit from them.

As regards the financial provision for medical and health-related research, the sources in the United States are federal funds, industry, philanthropic foundations, voluntary health agencies, state and local governments, and private contributions. It is estimated that in 1964 the national support from all these sources amounted to US \$1672 million, which is equivalent to 0.25 per cent. of the gross national product. Of this total, US \$1052 million (63 per cent. of the whole) was provided by the Federal Government, US \$415 million (25 per cent.) by industry, and US \$205 million (12 per cent.) by foundations, states and other interested bodies. Comparison with 1955 demonstrates the enormous increase in research allocations which has taken place. In that year, the expenditure was US \$261 million, less than one-sixth of the 1964 total. All the national sources of support have increased since 1955, but the increase in the federal contribution is most noteworthy. Amounting to US \$139 million in 1955, the federal investment had risen to US \$1052 million in 1964.

The main distributor of these federal funds is the Department of Health, Education and Welfare, operating through the Public Health Service. This latter in its turn conducts research through its complex of organizations, entitled the National Institutes of Health. To this complex of institutes, a new one has recently been added—the National Institute of Child Health and Human Development—in which is centred research covering the gamut of development and adaptation beginning with reproduction and ending with old age. Through the Public Health Service is also administered the system of grants to universities, medical schools, institutes and individual workers, which, while mainly fostering research in the United States, has very extensive international ramifications. In 1964, institutions and scientists in 49 countries outside the United States received grants from federal funds to a total of nearly US \$13 million. During the period 1955-1964 and most particularly its last four years, scientific research was proceeding under the auspices outlined above, with steadily increasing momentum.

The National Institutes of Health and the other participants in the research field have been responsible for a number of advances of the utmost importance. They include the cracking of the so-called "genetic code", the study of the hypothesis that modifications of diet will reduce the incidence of coronary thrombosis, and the application of new mechanical devices in heart surgery. The National Cancer Institute has made encouraging progress in childhood leukaemia and on the relationship of viruses to cancer. The National Institute of Allergy and Infectious Diseases has conducted and supported research against viral infections of the upper respiratory tract, including the common cold. More than a hundred different types of virus associated with these conditions have now been identified in the United States and elsewhere. The discovery of these viruses has stimulated the production of vaccines to combat their activities in the causation of respiratory diseases. The study and trial of vaccines has not been limited to these diseases. Oral poliovaccines and live measles vaccine, either alone or in combination with smallpox and yellow fever vaccines, have been the subject of extensive and successful investigation. Considerable research has also been made into the "metabolic error" diseases, and the relation of certain of these to mental retardation. The most important of all the metabolic disorders is diabetes, from which it is estimated that some three million Americans may be suffering. Advances have been made in diagnosing the pre-diabetic patient, in the synthesis of insulin, and in

the development of improved oral antidiabetic drugs. In the field of mental health, new knowledge and new drugs have made it possible for large numbers of the mentally ill to be successfully treated in their own families and communities, and to be usefully employed.

This short summary would be inadequate without reference to the support given by the Public Health Service to the difficult field of research in public health administration. It is increasingly appreciated that research studies of the services provided by public health departments will improve their quality, facilitate their economical operation and enhance the efficiency of their administration.

As a consequence of this vast range of activities in the research field, the National Library of Medicine has developed an electronic analysis and retrieval system, known as MEDLARS (Medical Literature Analysis and Retrieval System) which undertakes the preliminary sorting of information and, by means of photoduplication services, meets the requirements of libraries and research workers throughout the country.

International Collaboration

The United States of America participates in the specialized agencies of the United Nations system. The United States is a member of the South Pacific Commission, the South-East Asia Treaty Organization, the Colombo Plan Consultative Committee and the Central Treaty Organization, for the solution of health problems common to the areas concerned.

The Government is also assisting international centres for medical research and training in order to broaden collaboration in research and research training between the United States of America and foreign institutions.

Reciprocal exchanges of scientists and information in medical fields exist between the United States of America and the USSR. Fellowships for medical research training outside the country reached US \$4 million in 1964.

Government Health Expenditure

In the 1962/63 fiscal year, 6.9 per cent. of the total general government consumption expenditure was devoted to health services. This is equivalent to US \$40.50 per head and represents an increase of 16 per cent. over the figure for 1961/62. A further sum of US \$635 million was spent on capital works in the field of health services. Over half of current health expenditure by public authorities is financed by state and local governments.

VENEZUELA

Population and Other Statistics

At the last census, taken in February 1961, the population of Venezuela was 7 523 999. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 612 327	7 872 266	8 143 629	8 426 799
Number of live births	344 989	341 324	353 546	356 549
Birth rate (per 1000 population)	45.3	43.4	43.4	42.3
Number of deaths	55 585	54 960	58 474	61 281
Death rate (per 1000 population)	7.3	7.0	7.2	7.3
Natural increase (per cent) . .	3.80	3.64	3.62	3.50
Number of deaths, 1-4 years . .	6 160	6 124	7 046	7 108
Death rate, 1-4 years (per 1000 population at risk) . .	5.9	5.6	5.9	6.2
Number of infant deaths . .	18 246	16 030	16 950	18 313
Infant mortality rate (per 1000 live births)	52.9	47.0	47.9	51.4
Number of maternal deaths . .	378	368	335	360
Maternal mortality rate (per 1000 live births)	1.1	1.1	0.9	1.0

Of the 61 281 deaths recorded in 1964 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (16 775), birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (6386), malignant neoplasms (4621), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (4028), accidents (3878, including 1661 in motor-vehicle accidents), arteriosclerotic and degenerative heart disease (3779), pneumonia (2251), vascular lesions affecting the central nervous system (2109), tuberculosis, all forms (1236), hypertension (1010).

In 1963, the communicable diseases most frequently notified in the reporting area of Venezuela were: dysentery, all forms (96 370, including 25 335 cases of amoebiasis), influenza (88 065), measles (36 798), gonorrhoea (18 910), whooping-cough (9490), syphilis, new cases (9480), tuberculosis, all forms, new cases (7529), bilharziasis (1666), typhoid and paratyphoid fevers (522), diphtheria (453), trypanosomiasis (337).

The following notifications were received for the whole country: malaria, new cases (2390), leprosy (582), rabies in man (25), yellow fever (1).

Organization of the Public Health Services

Venezuela comprises 20 states, which are autonomous and equal, each having its own legislative

assembly. These states are divided into 156 districts, and these in turn into 613 municipalities. There are also two territories and a federal district, which includes the capital city, Caracas. Executive power is exercised at three levels: federal, state and municipal.

Primary responsibility for the health of Venezuela rests with the Minister of Health and Welfare. The Ministry is organized in five directorates—the Directorate-General, the Public Health Directorate, the Directorate for Malaria Eradication and Environmental Sanitation, the Directorate for Social Affairs, and an administrative directorate. The Public Health Directorate consists of the following departments: chronic and adult diseases (e.g., cardiovascular disease, cancer, tuberculosis, venereal disease), demography and epidemiology, the National Institute of Hygiene, mental health, maternal and child health, health institutions and medical care. A policy of concentration of functions is now being applied extensively in Venezuela. The general pattern is a combination, at the state health department, of the public health functions of the Federal Ministry and those of the state. The detailed organization of the new type of state health department follows closely that of the Public Health Directorate of the central ministry.

Within each state there are a varying number of health districts, in which the health services are provided in sequence through health posts, rural dispensaries, health centres and hospitals. The health post is staffed by a health auxiliary who has had elementary training for six months in first aid, diagnosis and health education, and whose function it is to refer patients to the rural dispensary. The rural dispensary is staffed by one or two doctors and health auxiliaries. It provides an ambulatory service, both preventive and curative, to a population of approximately 2000. There are in all 462 such dispensaries. The rural dispensary is associated directly with a health centre, of which there are 24, or with a hospital. The health centre is in effect a small hospital and its staff comprises a medical director, resident medical officers, graduate and auxiliary nurses, laboratory personnel, and a sanitary inspector. It serves a population of about 10 000.

Of recent years there has been a tendency to group health districts in larger health regions. So far seven health regions have been organized.

Apart from the health services administered by the Ministry of Health and Welfare, and the states and municipalities, there are a number of other organizations which provide medical care to certain population groups, e.g., insured persons and their families and

the armed forces and their families. The most important of these are the Venezuelan Institute of Social Security (which maintains 78 polyclinics for its members), the Public Assistance Board for the Federal District and the Military Health Service.

Hospital Services

In 1963, Venezuela had 326 hospitals and other institutions providing in-patient medical care, with a total complement of 28 484 beds. The bed/population ratio was thus 3.5 per 1000 population. Of these institutions, 183 providing 24 954 beds were government-maintained. The distribution of the 28 484 beds was as follows:

Category and number	Number of beds
General hospitals	233
Rural hospitals	18
Tuberculosis sanatoria	16
Maternity hospitals	11
Paediatric hospitals	8
Psychiatric institutions	20
Chronic diseases hospitals	3
Cancer hospitals	3
Orthopaedic hospitals	3
Leprosaria	2
Old people's homes	9
	15 806
	810
	2 925
	971
	894
	4 349
	452
	227
	319
	900
	831

Out-patient medical care was provided at the out-patient departments of 26 government general hospitals and at 78 polyclinics administered by the Institute of Social Security, 24 health centres and 462 rural dispensaries. At the hospital out-patient departments and the polyclinics there were nearly six million attendances in 1964. More than 2 360 000 patients attended the rural dispensaries.

Medical and Allied Personnel

There were 6584 physicians in Venezuela in 1964, which is equivalent to a doctor/population ratio of one to 1300. In 1965, other health service personnel included the following:

Dentists	1 600
Pharmacists	1 450
Nurses	3 968
Auxiliary nurses	11 612

Communicable Disease Control and Immunization Services

Communicable diseases in Venezuela are those typical of a tropical country, to which must be added the infections characteristic of areas of rapidly extending urbanization and industrialization. Malaria, leprosy, bilharziasis, the dysenteries and

bowel infections, helminthiasis, influenza, the common infectious diseases of childhood, tuberculosis and the venereal diseases are all present. They constitute a heavy burden on the preventive, diagnostic and therapeutic sections of the national health services.

Considerable progress has been made in the past decade. Smallpox and yellow fever have been virtually eliminated. Malaria, tuberculosis and poliomyelitis are receding. Special attention has been given to the bowel infections of infancy. An intensive programme for the application of rehydration techniques has been developed even in the more remote areas of the country and has given most encouraging results.

The control of many of the diseases still largely consists in identification and treatment of cases, rather than in active prevention. But where immunization is effective as a prophylactic measure it is used to an increasing extent. In 1964 the following immunization procedures were carried out:

Poliomyelitis (Sabin vaccine)	2 842 376
Poliomyelitis (Salk vaccine)	720 383
Smallpox	366 618
Smallpox (revaccinations)	611 524
BCG (vaccinations and revaccinations)	527 203
Typhoid and paratyphoid (complete and reinforcing)	471 276
Diphtheria, whooping-cough and tetanus (complete and reinforcing)	229 785
Yellow fever (vaccinations and revaccinations)	224 277

Specialized Units

In 1964, there were 549 centres for pre-natal care, which were based in the main on the health centres and rural dispensaries. They were attended by 116 617 pregnant women. In addition, 46 808 expectant mothers were visited. Of the total of 189 611 confinements taking place under the organized maternity services, 169 901 (89.7 per cent.) were attended by a doctor.

There were the same number of infant and child welfare centres. In Venezuela, children under two years of age are regarded as infants, between two and six years as pre-school children, and from seven to 14 years as schoolchildren. In 1964, 51 558 infants and 15 923 pre-school children attended the centres. School health services were provided at 601 centres. They were attended by 212 260 children, which is equivalent to 32 per cent. of the school population having access to the services. Dental care was available at 128 dental units, at which 315 059 persons were treated.

Psychiatric consultations were given at 27 centres—three located in general hospitals, seven in psychiatric institutions and 17 in private clinics. Altogether nearly 60 000 persons availed themselves of these facilities.

In 1964, in accordance with a social security convention, 35 749 industrial undertakings with a working population of 348 583 were providing health services, including factory first-aid posts. Other undertakings outside the social security arrangements also provided health services for their workers.

A number of out-patient facilities were also provided in certain of the specialized clinical fields. These included 364 tuberculosis clinics, 419 centres for the supervision and treatment of leprosy cases, 515 venereal disease clinics, 54 cancer centres and 28 cardiovascular clinics.

Environmental Sanitation

In 1964 the population of Venezuela was estimated as slightly more than 8 420 000. Of this total, 3 565 600 persons had a piped water supply in their dwellings, and 2 556 742 had water from public fountains. As regards sewage disposal, a population of 2 362 251 was served by sewerage systems. It was estimated that 2 676 000 persons were provided with individual installations such as septic tanks and latrines.

Major Public Health Problems

A number of important public health problems confront the Venezuelan Ministry of Health and Welfare, and are the subject of continuing study. Attempts to solve certain of them constitute a material portion of the programmes designated in the national health plan. They include:

- environmental deficiencies in rural housing and water supply;
- control of communicable diseases (in particular Chagas' disease, bilharziasis, ancylostomiasis and other intestinal parasitoses), poliomyelitis control, maintenance of smallpox eradication, malaria eradication;
- shortage of hospital accommodation;
- integration of the preventive and curative health services.

National Health Planning

Organized planning for the economic and social development of Venezuela commenced in 1958, when a central office for the co-ordination of planning—CORDIPLAN—was established at the level of the President of the Republic. In 1960 this office prepared a preliminary plan for the period 1960-1964 which was to be reviewed annually so that the necessary adjustments could be made for the next year. Certain

difficulties were encountered in the implementation of this plan and in March 1963 the President of the Republic announced the outlines of a plan for the quadrennium 1962-1965. In the following year a national plan for the period 1963-1966 was promulgated, setting definite economic targets, and including the programmes of the various social sectors.

The preparation of the health component of this plan was undertaken by a committee for the co-ordination of health services which had been part of the machinery of CORDIPLAN since 1959. This committee was composed of representatives of CORDIPLAN itself, the Ministry of Health and Welfare, the Institute of Social Security, the Public Assistance Board for the Federal District, the Military Health Service and the Urban Planning Authority. It was in effect an advisory, rather than an executive body, and in 1964 it was supported by the creation of a special planning unit in the Ministry of Health and Welfare. This unit, which is required to work closely with CORDIPLAN, has separate divisions for general direction and planning, programming, buildings and equipment, and budget. It is also concerned with the training of the other staff of the Ministry of Health and Welfare in the methodology of planning. The staff of the Health Planning Unit consists of five doctors, three economists, two sanitary engineers, two public health nurses, a social worker, three budget analysts, two equipment technicians and secretaries. The health plan, 1963-1966, aims at the addition of over 11 000 hospital beds by the end of 1969. This increase will give a bed/population ratio of 3.84 beds per 1000, provided that the population of the country does not exceed 10 137 000 by that date. The plan also includes programmes for the eradication of malaria, the control of Chagas' disease, bilharziasis and other communicable diseases, the provision of piped water supplies to communities of less than 5000 inhabitants and the execution of extensive schemes for rural housing.

International Collaboration

Venezuela participates actively in several forms of international collaboration. Its main associations are with the Pan American Health Organization and the World Health Organization and have taken the form of attendance at the assemblies, regional meetings, etc., of these organizations, participation in seminars and study groups arranged by them and collaboration in the Latin American Centre for Classification of Diseases. Venezuela has also received visiting scientists and public health officers of WHO and PAHO, and has shared in their fellowships programmes. Other international activities included joint meetings of the ministers of health of Venezuela and Colombia on common problems.

Government Health Expenditure

In 1964, total general government consumption expenditure amounted to 4367 million bolivares of which 1131.8 million bolivares (i.e., 25.9 per cent.)

were devoted to the provision of health services. This is equivalent to an expenditure of 134.3 bolivares per head on these services. A further sum of 348.2 million bolivares was spent on capital account for the improvement and expansion of health facilities.

VIRGIN ISLANDS OF THE UNITED STATES OF AMERICA

Population and Other Statistics

At the last census, taken in April 1960, the population of the Virgin Islands was 32 099. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	34 450	35 430	38 270	41 913
Number of live births	1 193	1 375	1 513	1 762
Birth rate (per 1000 population) . . .	34.6	38.8	39.5	42.0
Number of deaths	326	321	383	343
Death rate (per 1000 population) . . .	9.5	9.1	10.0	8.2
Natural Increase (per cent.)	2.51	2.97	2.95	3.38
Number of deaths, 1-4 years	6	14	6	9
Death rate, 1-4 years (per 1000 population at risk)	1.7	4.0	1.6	...
Number of infant deaths	51	40	48	50
Infant mortality rate (per 1000 live births)	42.7	29.1	31.7	28.4
Number of maternal deaths	1	0	1	2

Of the 343 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart diseases (61), malignant neoplasms (43), accidents (28, including 11 in motor-vehicle accidents), vascular lesions affecting the central nervous system (25), hypertension (24), diabetes mellitus (13), birth injuries, post-natal asphyxia and atelectasis (13), ill-defined and unknown causes (11), cirrhosis of the liver (8).

In 1963 the communicable diseases most frequently notified were: syphilis, new cases (284), gonorrhoea (193), measles (23), whooping-cough (10), tuberculosis, all forms, new cases (7). There were also three cases of infectious hepatitis and one of leprosy.

Hospital Services

In 1963, hospital accommodation in the Virgin Islands was provided in three general hospitals which had a total bed capacity of 189. There were thus 4.9 beds per 1000 population. Admissions totalled 6004.

Out-patient care was given at four hospital out-patient departments and health centres, where 1940 new patients attended. A total of 70 047 attendances were made in 1964.

Medical and Allied Personnel

In 1963, the Virgin Islands had 37 doctors working in government service. There was thus approximately one doctor per 1000 population. Other health personnel included:

Dentists	13
Pharmacists	11
Fully qualified nurses	66
Nurses with midwifery qualifications	18
Assistant nurses	49
Auxiliary nurses	67
Public health nurses	20
Veterinarians	2
Sanitary engineer	1
Sanitary Inspectors	12
Physical therapists	2
Laboratory technicians	12
X-ray technicians	5

Immunization Services

The following immunization procedures were carried out in 1963:

Diphtheria	1 445
Poliomyelitis (killed vaccine)	1 118
Smallpox	823

Specialized Units

Maternal and child health services were based on 15 centres where 1253 pregnant women, 1625 children under one year of age and 1065 children aged between one and five received services in 1964. Domiciliary care was given to 1613 pregnant women, 2015 children under one year and 2125 pre-school children. Of the total number of births in 1964, namely 1762, 1507 were attended by a doctor or qualified midwife. The total school population was supervised by 34 school health units. Dental treatment was given in four dental health units to 2711 persons. There were two independent medical rehabilitation centres and a hospital rehabilitation department. The two clinics for psychiatric diseases were attended by 217 new out-patients. The public health laboratory carried out 28 771 examinations.

Government Health Expenditure

In the 1963/64 fiscal year the total general government consumption expenditure was US \$30.2 million, of which US \$4.1 million were devoted to the provision of health services. This is equivalent to an expenditure on these services of US \$100 per head. A further

sum of US \$55 000 was spent on capital account for the improvement of health service facilities. The Virgin Islands operate a fully integrated Department of Health and thus the expenditures given above include the sum of US \$38 392 spent by the Division of Veterinary Services—a section of the Department of Health.

SOUTH-EAST ASIA REGION

BURMA

Population and Other Statistics

At the last census, taken in March 1941, the population of Burma was 16 823 798. Population estimates for the period 1961-1964 are given in the following table:

1961	22 780 000
1962	23 253 000
1963	23 735 000
1964	24 229 000

In 1964, in a registration area covering the larger towns the number of recorded deaths was 39 266, giving a death rate of 18.3 per 1000 population. The main causes were: senility without mention of psychosis, ill-defined and unknown causes (11 482), pneumonia (5024), tuberculosis, all forms (2295), malignant neoplasms (1113), accidents (1046, including 126 in motor-vehicle accidents), anaemia (963), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (847).

In 1962 the communicable diseases most frequently notified were: syphilis, new cases (129 223), leprosy (32 808), gonorrhoea (10 045), plague (68), smallpox (32).

Organization of the Public Health Services

The health services were reorganized in 1965. The health administration is centralized in the Ministry of Health, under the Minister of Health. The Director of Health Services is assisted by four deputy directors in charge respectively of hospitals, public health, disease control and laboratories. Administrative and budgetary questions and nurse training are the direct responsibility of the Director of Health Services.

The country is being divided into nine health divisions, each in the charge of a divisional assistant director. He is assisted by a deputy assistant director and a number of regional officers with responsibility for various specialized units in the directorate, such as malaria and leprosy. The township medical officer represents the Director of Health Services at the township level. He is in charge of all the work of the health department. At the lowest administrative level is the station medical officer, who is in charge of a station health unit covering a population of from 30 000 to 40 000.

Hospital Services

In 1963 Burma had 293 hospitals and establishments for in-patient care providing 20 429 beds, which is equivalent to a bed/population ratio of 0.9 per 1000. Of the 293 establishments, 264, with 18 597 beds, were state-maintained. The total number of 20 429 beds was distributed as follows:

Category and number	Number of beds
General hospitals	269
Infectious diseases hospital	1
Maternity hospital	1
Psychiatric hospital	1
Leprosaria	21
	3 500
14 623	
300	
806	
1 200	

Out-patient facilities were available at 288 hospital out-patient departments, 23 polyclinics, 597 health centres and 96 dispensaries.

Medical and Allied Personnel and Training Facilities

In 1963, Burma had 2535 doctors, equal to one doctor for 9400 inhabitants. Other health personnel included:

Dentists	26
Pharmacists	296
Fully qualified midwives	4 731
Fully qualified nurses	2 774
Veterinarians	214
Sanitary engineers	2
Physical therapists	15
Laboratory technicians	13
X-ray technicians.	12

A school for training paramedical personnel was established in 1964. It provides training in physical therapy, pharmacy, X-ray and laboratory technology.

Communicable Disease Control and Immunization Services

The smallpox eradication programme, which started in 1963, was first implemented in six districts. In 1964 it was extended to another thirty-one districts, thus covering almost the entire Union. The leprosy control project was launched in 1952 with UNICEF and WHO assistance. By 1964, 140 000 leprosy patients had been registered, of whom 133 693 were under treatment. About 97 per cent. are treated on an ambulatory basis. Intensive tuberculosis preventive and curative work is carried out. There are at present two tuberculosis prevalence survey teams,

one in Rangoon and one in Mandalay. Case-finding is primarily carried out among industrial workers, schoolchildren and university students. A scheme for a supervised domiciliary chemotherapy programme is under way. The BCG vaccination campaign has been continued with thirteen mobile teams. The gradual increase in the incidence of filariasis led to the establishment of a filaria pilot survey team. During 1964, three districts were covered and a total of 120 324 persons were examined, of whom 2185 were found to be microfilaria-positive. Malaria work is still being carried out and consists of spraying operations, case detection, treatment and epidemiological studies. The trachoma campaign was started in March 1964 in Central Burma's dry zone, where the incidence of the disease is very high.

Specialized Units

In 1963, maternal and child care services were based on 153 centres, which were attended by 57 152 pregnant women, 24 205 infants under one year and 38 917 children aged between one and five years. Domiciliary visits were paid to 41 084 pregnant women, 82 187 infants and 140 934 pre-school children. A total of 100 672 deliveries were attended by a doctor or qualified midwife, and 107 023 schoolchildren were under health supervision at 19 school health service units. There was an independent medical rehabilitation centre, attended by 356 new out-patients, and a hospital rehabilitation department. The psychiatric out-patient clinic gave advice and treatment to 674 new patients. There were three public health laboratories which carried out 196 300 examinations.

Major Public Health Problems

The most important public health problems in Burma are those related to the incidence of the communicable diseases already mentioned.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Following the establishment of the Revolutionary Council and the Revolutionary Government in 1962, the health services of the country were reorganized in January 1965. Great efforts are being made by the new Government in the field of education and agriculture.

Medical and Public Health Research

The Burma Medical Research Council was created in 1962. It is responsible for the co-ordination of all research work done in medical and allied sciences in Burma. A Medical Research Institute was established in 1963. The Burma Medical Research Council is the governing body of this institute, which is headed by a director, assisted in policy matters by the policy advisory committee and in administrative matters by an executive officer. The Institute has at present six departments: nutrition, physiology, pharmacology, haematology, microbiology and experimental medicine. It receives financial assistance from the National Institutes of Health of the United States of America for research projects in anaemia, thiamine metabolism and liver diseases. In 1963 and 1964 the Institute's activities were concentrated on the following research fields: indigenous medicinal plants and drugs, physiological norms of the Burmese, the anaemias, thiamine metabolism and cirrhosis of the liver.

Government Health Expenditure

In 1964, the total general government current expenditure amounted to 1358.5 million kyats, of which 83.2 million kyats (6.1 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 3.4 kyats per head on these services.

CEYLON

Population and Other Statistics

At the last census, taken in July 1963, the population of Ceylon was 10 624 507. Population estimates and some other vital statistics for the period 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	10 168 000	10 443 000	10 625 000
Number of live births	363 677	370 762	363 918
Birth rate (per 1000 population)	35.8	35.5	34.3
Number of deaths	81 653	88 928	91 066

	1961	1962	1963
Death rate (per 1000 population)	8.0	8.5	8.6
Natural increase (per cent.)	2.78	2.70	2.57
Number of deaths, 1-4 years	11 138	10 958	...
Number of infant deaths	18 941	19 567	...
Infant mortality rate (per 1000 live births)	52.1	52.8	...
Number of maternal deaths	949	1 097	...
Maternal mortality rate (per 1000 live births)	2.6	3.0	...

Of the 88 928 deaths recorded in 1962, the main causes were: senility without mention of psychosis,

ill-defined and unknown causes (21 729), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (11 481), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (6118), pneumonia (4696), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (4371), all accidents (3114, including 289 in motor-vehicle accidents), anaemias (2931), malignant neoplasms (2283), tuberculosis, all forms (1740), suicide and self-inflicted injury (1214), vascular lesions affecting the central nervous system (1151), deliveries and complications of pregnancy, childbirth and puerperium (1097).

In 1963, the communicable diseases most frequently notified were: tuberculosis, all forms, new cases (8151), infectious hepatitis (1909), typhoid fever (1836), dysentery, all forms (1151), whooping-cough (758), diphtheria (580), typhus (24), meningococcal infections (5), malaria, new cases (3).

There were also 1810 cases of poliomyelitis in 1962, of which 10 per cent. died and 40 per cent. were paralytic.

Organization of the Public Health Services

The overall responsibility for all health matters lies with the Department of Health Services of the Ministry of Health. This department has been progressively decentralized. There are at present twenty-seven decentralized units, sixteen of which are regional units administered by a senior medical officer, who is designated superintendent, and is in overall charge of medical care, public health and laboratory services. The other eleven units are in charge of specialist officers, each of whom executes an approved plan for the control of a specific disease. The superintendent of health services in each region (district) is the co-ordinating officer of all the services in his administrative district. He represents the Director of Health Services on the District Co-ordinating Committee, where he is in a position to enlist the support of all government departments and local government agencies for the health programmes and projects.

Hospital Services

In 1962, there were 394 government hospitals with 31 120 beds. An additional 4389 beds were provided in private hospitals, co-operative hospitals, estate hospitals and local government hospitals. The total of 35 509 beds was equivalent to 3.4 beds per 1000 population. To these hospitals there should be added three government leprosaria with 1083 beds and

14 prison hospitals with 532 beds. The overall provision of hospital and institutional beds was 3.6 per 1000 population.

The distribution of the 31 120 beds in government hospitals was as follows:

Category and number	Number of beds
General hospitals	133
Rural hospitals	125
Tuberculosis and chest hospitals .	7
Infectious diseases hospitals . . .	3
Maternity hospitals	119
Paediatric hospital	1
Psychiatric hospitals	3
Cancer hospital	1
Eye hospital	1
Dental hospital	43

Out-patient care was provided by the Department of Health Services at 637 hospital out-patient departments, central dispensaries and medical centres and 345 specialist clinics conducted at government hospitals and medical centres. These specialist clinics recorded nearly three million visits during the period from October 1962 to end of September 1963.

Medical and Allied Personnel and Training Facilities

In 1962, Ceylon had 2250 doctors, equal to one doctor per 4640 inhabitants. Of these doctors, 1311 were employed by the Government. There were also 193 dentists, 1226 pharmacists, 4359 fully qualified registered midwives and 2382 fully qualified nurses. By mid-1964 the number of nurses had increased to 3000.

A second medical college was opened in 1961 in Peradeniya, Kandy. It has an annual intake of 150 medical students. Between 150 and 175 students are also admitted each year to the Colombo Medical College. A unified nursing service was established in 1963, abolishing all auxiliary categories. There are eight nursing schools with about 1600 pupil nurses in training. Public health inspectors are trained at Kalutara and midwives are trained at five centres which have a total intake of about 200 candidates a year. The training of technical personnel is undertaken by the Department of Health Services special training institutes in Colombo.

Communicable Disease Control and Immunization Services

As a result of assiduous control measures, plague, cholera, smallpox, typhus and yellow fever no longer occur in the island. Ceylon's major health problem today is the incidence of gastro-intestinal diseases, which account for 20 per cent. of the admissions to hospitals and for 25 per cent. of the deaths in Ceylon.

Malaria morbidity, which was 390 per 1000 population in 1945, steadily declined to 0.04 in 1960. Under the five-year antimalaria plan, which ended in 1963, a new stimulus was given to the programme, which has now reached the consolidation phase.

Tuberculosis remains one of the foremost national health problems. Antituberculosis activity is progressing steadily along several channels. Hospital and clinic facilities have been increased considerably. Mass miniature X-ray programmes are organized in all parts of the country. Under the three-year BCG vaccination campaign, which was launched to immunize all children, 1 648 273 have been tuberculin tested and 946 533 vaccinated with BCG. Teachers in training colleges are X-rayed. A chemoprophylaxis project to evaluate the results of the treatment of tuberculin-positive schoolchildren has also been started.

Rural filariasis has been virtually eliminated, whereas in urban areas the disease continues to be a problem, especially in the western and southern coastal belt of the country. Microfilaria cases in 1961 amounted to 3871, while the number of clinical cases was 2553. Leprosy is controlled by a community programme which co-ordinates case finding, health education at all levels, improved sanitation and rehabilitation. At the end of 1961 there was a total of 3818 patients, male patients outnumbering female patients. A major outbreak of poliomyelitis occurred in 1962 with 1810 cases. A national polio immunization campaign was launched in the same year to provide protection to children under eight years of age. Over 80 per cent. of the total child population was immunized during this campaign. Antirabies work has been intensified recently through the inoculation of licensed dogs and the destruction of stray dogs. Since the introduction of the campaign there has been a significant reduction in the incidence of human rabies. A distinct decline has been noted in the number of new cases of infectious syphilis and gonorrhoea recorded at the Colombo venereal diseases clinic.

Chronic and Degenerative Diseases

The incidence of cancer is high in Ceylon. Preventive and curative work is being considerably expanded. Attendances at the in-patient and out-patient departments of the Cancer Institute at Maharamaga are increasing. Consultative clinics are also conducted at the general hospital in Colombo and at several provincial hospitals in the island.

Specialized Units

In 1964, maternal and child health services were provided at 1196 government centres, where 161 139 pregnant women, 69 795 children under one year of

age, and 50 265 children aged between one and five years attended. In the same year 63 817 pregnant women, 67 092 children under one year and 46 731 pre-school children were under domiciliary care. Deliveries conducted by a doctor or qualified midwife totalled 278 202. There were 93 school health units which gave medical supervision to 193 709 schoolchildren. Dental care was given to 740 560 patients. The four out-patient clinics for psychiatric diseases recorded 12 454 new patients in 1964. Other specialized units included 59 tuberculosis clinics, four cancer clinics and ten venereal disease units.

Major Public Health Problems

The study of the incidence, causation, transmission and control of communicable diseases is still considered of paramount importance. Gastro-intestinal diseases and diseases caused by intestinal protozoa and helminths have remained major public health problems, causing a high morbidity. The specific death rate from these groups of diseases has been higher than for any other disease. Environmental deficiencies are largely responsible for these communicable diseases and also for much infection of the respiratory tract. Maternal and child health and school health are given high priority. Nutritional deficiencies are causing concern, as they contribute to the comparatively high death rates among certain age-groups. It has been found that a high proportion of the cases of prematurity found in institutional deliveries are due to malnutrition, which also accounts for a high percentage of neo-natal deaths.

One of Ceylon's largest problems at present is the increase of population. It has been stated that at the present rate of increase Ceylon's population will double in about 25 years. The seriousness of the situation is realized, and a Government-sponsored project for family planning services and educational activities in this field is being actively considered.

National Health Planning

A comprehensive five-year health plan was drawn up in 1959 to provide coverage in medical care. It was part of Ceylon's ten-year plan for economic and social development. This health plan stipulated the concentration of specialist services of all types at the nine provincial hospitals and the provision of a limited range of specialist services (general medicine, general surgery, paediatrics, obstetrics and gynaecology) at the 12 base hospitals.

Programmes for special diseases were intensified under the plan and a division of health education and an epidemiological unit were established.

Medical and Public Health Research

The Medical Research Institute now undertakes routine diagnostic laboratory examinations for all medical institutions in addition to research. Important research work in the fields of bacteriology, entomology, parasitology, virology and pharmacology has been carried out. The Medical Research Institute also produces some of the vaccine used in the national immunization campaigns. With the development of laboratory services elsewhere, the Institute will be enabled to devote more time to its research activities.

International Collaboration

Ceylon received assistance from several international agencies (UNICEF, WHO) and foreign governments

(Australia, Canada, New Zealand, United States of America) by way of consultant services, training opportunities for health personnel, equipment and financial aid.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure on health services amounted to 166 million rupees. This is equivalent to an expenditure of 15.5 rupees per head on these services. A further sum of 2.3 million rupees was spent on capital account for the expansion and improvement of health facilities. Almost 90 per cent. of the total government expenditure on health services is financed from funds allotted to the Department of Health Services.

INDIA

Population and Other Statistics

At the last census, taken in March 1961, the population of India was 435 511 606. (This figure includes an estimate of 626 667 for Goa, Daman and Diu.) Population estimates and some other vital statistics for the period 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	442 736 000	453 407 000	464 335 000
Number of live births *	8 488 924	8 405 860	8 344 407
Number of deaths *	3 742 982	3 550 315	3 561 006
Number of deaths, 1-4 years *	670 057	602 996	625 301
Number of infant deaths *	704 493	675 743	643 571
Maternal deaths *	15 337	13 790	13 397

* Registration area only.

During the period 1961-65 the birth rate and death rate for the whole country were estimated to be 41.0 and 17.2 per 1000 population respectively.

In selected areas in 11 states and three Union territories, the main causes of death in 1963 were: senility without mention of psychosis, ill-defined and unknown causes (125 978), all accidents (27 910, including 17 902 in motor-vehicle accidents), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (21 316), tuberculosis, all forms (20 515), dysentery, all forms (16 940), pneumonia (9725), cholera (7206), tetanus (6738), smallpox (6595), nephritis and nephrosis (5239), anaemias (5230), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (4937).

Organization of the Public Health Services

Health is a transferred subject under the Constitution of India and for the greater part health matters are the concern of the individual states. The Central Government deals mainly with post-graduate medical education, Union agencies and institutes for research, port and airport health organizations, international health matters and town and country planning at the national level. In respect of state health matters, the Central Government also determines broad policies and planning through the Central Council of Health: it is responsible for the collection and exchange of information and for co-ordination; it advises on matters relating to hospitals, medical education, drug control, prevention of food adulteration, local self-government and water supply schemes and other subjects of country-wide concern such as the control of epidemics. The Central Government has a specific responsibility for health matters in the Union territories of Delhi, Andaman and Nicobar Islands, Laccadive, Minicoy and Amindivi Islands. It also administers a number of important training institutions.

The Central Council of Health, which was set up in 1952, is the highest consultative and advisory body on common problems and health programmes. It consists of the Union Minister of Health as Chairman and the health ministers of all states as members.

The Ministry of Health comprises the Secretariat and the Directorate-General of Health Services, which gives technical advice to the Central Government and supervises the technical establishments and personnel throughout the country. The Directorate-General in-

cludes the following divisions: medical division, public health administration, drug control, public health engineering, central government health scheme and Central Council of Health, family planning, malaria eradication, smallpox eradication.

Recent Developments

The Health Survey and Planning Committee, which was set up in 1959 to review the progress of health projects and to make recommendations for future action, has submitted its report. The Malaria Institute was expanded into the National Institute of Communicable Diseases in 1962. The National Institute of Health Administration and Education, the Central Family Planning Institute and the All-India Institute of Logopedics were established during the period under review.

Hospital Services

The latest date for which complete figures covering all states and Union territories are available is 1958, when India had 3435 general hospitals and 9095 medical centres providing altogether 161 258 beds. This was equivalent to a bed/population ratio of 0.4 per 1000.

In 1964, out-patient facilities were available at 4503 hospital out-patient departments, 4373 primary health centres and 10 511 dispensaries.

Medical and Allied Personnel and Training Facilities

In 1962, 77 780 physicians were working in India, including 23 334 physicians in government service. The doctor/population ratio was one to 5800. Other health personnel included:

Dentists	1 426
Dental assistants	4 663
Pharmacists	29 086
Fully qualified midwives	46 232
Fully qualified nurses	39 350

There has been a considerable expansion of medical and health training facilities. At the end of 1964 there were 81 medical colleges, 13 dental colleges and 11 other training institutions. The total annual admission capacity of the medical colleges was 10 277 in 1964. Twenty-one post-graduate departments have so far been established under the third plan. Training in specialized subjects is given in various institutions such as the All-India Institute of Hygiene and Public Health in Calcutta, the National Institute of Communicable Diseases in Delhi, the Central Health Education Bureau, the Central Family Planning

Institute, the National Institute of Health Administration and Education, and the Central Leprosy Teaching and Research Institute.

Facilities for the training of nurses exist in practically all major hospitals in the country and in nursing colleges at Bombay, Hyderabad, New Delhi, Indore and Vellore. At the end of 1964, there were about 480 nursing schools and colleges in the country for the training of nurses, midwives, health visitors and auxiliary nurse/midwives.

Communicable Disease Control

Communicable diseases still constitute the major health problem in India. The records available up to 1962 showed that 54 per cent. of all deaths were caused by communicable diseases. A nation-wide malaria eradication programme was launched in 1953. Under this scheme 39 325 units are functioning, each covering an average population of 1.2 million. The mortality rate due to malaria has dropped from 8.79 per 1000 population in 1944 to 0.29 in 1962. There has also been an overall reduction of more than 95 per cent. in spleen and parasite indices throughout the country between 1953/54 and 1960/61. The proportionate case rate has also dropped from 10.8 in 1953/54 to 0.23 in 1963/64.

There are about six million tuberculosis patients in India and 500 000 deaths annually from the disease. In 1964, 182 BCG teams were working and by the end of that year 216 million persons had been tuberculin tested and 78 million had been vaccinated. Nearly 49 per cent. of the total population has been covered. At the end of 1964, 414 tuberculosis clinics and 150 tuberculosis hospitals and sanatoria, with a total bed strength of 34 517, were functioning in the country.

A national smallpox eradication programme was launched in 1962. During 1964, 154 units were working and nearly 66 per cent. of the total population was covered. Recent surveys have revealed that a population of about 122 million lives in areas with varying degrees of filarial endemicity. Under the national filariasis control programme, 47 control units were operating in 1964. Trachoma is one of the commonest causes of blindness, being responsible for 60 to 80 per cent. of preventable blindness. A national trachoma control programme was started in 1963 and 56 field units are operating in seven states. The estimated number of cases of leprosy in India is 2.5 million, of whom about 20 per cent. are infectious. A total of 166 leprosy control units have been established. The total population covered by all types of centres under this programme was 38.5 million at the end of 1964.

Specialized Units

At the end of 1962, India had 8899 maternal and child health centres and 19 009 school health units. In 1964 there were 231 dental service units. In 1965 there were also 238 venereal diseases centres, 867 leprosy survey, education and treatment centres and 56 trachoma control units. In 1963, India had 121 public health laboratories.

Major Public Health Problems

Environmental sanitation, especially water supply and sewage disposal, remains one of the great public health problems. A central public health engineering organization has formulated a programme of national water supply and sanitation for the purpose of providing technical scrutiny of and advice on all urban and rural water supply and sanitation schemes. The heavy incidence of communicable diseases, particularly of malaria, tuberculosis, leprosy, smallpox, diarrhoea, dysentery and cholera, is responsible for the high infant and maternal mortality rates, the high crude death rates and the low expectation of life.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Educational facilities have been considerably increased. The 1961 census showed that 24 per cent. of India's population was literate, whereas the corresponding figure for 1951 was 16.6 per cent. The Indian economy is still predominantly agricultural. About one-half of the country's national income is derived from agricultural and allied activities, which absorb nearly three-quarters of the manpower. Only about one-fifth of the national income originates from the processing and manufacturing sector, including mining; the remainder is almost equally shared between commerce, transport and other services. Net investment in the economy has been rising in recent years; at the end of the second development plan it amounted to about 11 per cent. of the national income. During the decade, India's net national income has risen at the average rate of 3.35 per cent. per annum. The *per capita* annual income has risen from Rs 300 in 1948/49 to Rs 371 in 1963/64. While the natural increase has been two per cent. per annum during the decade, the increase in *per capita* income has been 1.23 per cent. per annum. The employment situation is not satisfactory and it is roughly estimated that at the end of the third plan in 1966 there will be 12 million unemployed.

A number of social security measures for the welfare of workers have been in operation during the last decade. The two major schemes are the Employees'

State Insurance Scheme and the Employees' Provident Fund Scheme. The former provides for medical care and treatment, sickness and maternity benefits and compensation for accidents, while the latter provides for old age and compensation for dependants in the event of death of the worker while in service. At the end of 1964, 2 935 000 workers were insured under the first scheme and 4 012 000 under the second.

National Health Planning

In 1950 the Government of India set up the Planning Commission to formulate national plans for the development of the country. These plans are executed by both the state and central governments. Two five-year plans were completed between 1951 and 1961 and a third five-year plan covered the period 1961-1966. The broad objectives in the field of health in the third development plan are the development of public health services and the control of population growth through family planning. Under the three plans, 5.9 per cent., 5.0 per cent. and 4.3 per cent. respectively of the total budget were devoted to health. The main features of the third health plan are: national programmes for malaria eradication, smallpox eradication and communicable disease control; the building of primary health centres throughout the country; the establishment of 85 medical colleges with a total admission capacity of 11 000 per annum; the development of training facilities for nurses and paramedical personnel; the increase in hospital beds to about 240 000, and the improvement of rural and urban water supplies. Simultaneously the family planning programme has been intensified and extended.

Medical and Public Health Research

The Indian Council of Medical Research has been engaged in the promotion and co-ordination of research in India ever since its establishment in 1912. It maintains the Nutrition Research Laboratories at Hyderabad, the Virus Research Centre at Poona and the Blood Group Reference Centre at Bombay. It provides grants-in-aid, disseminates information on medical research and publishes two journals. The National Institute of Communicable Diseases at Delhi carries out research in methods of malaria and filariasis eradication. Research in other communicable diseases is also in progress. Apart from the medical colleges and the hospitals attached to them, each identified with some branch of research, the country has a number of specialized institutions, such as the All-India Institute of Hygiene and Public Health in Calcutta, the School of Tropical Medicine in Calcutta, the King Institute of Preventive Medicine, Guindy,

Madras, the Vallabhbhai Patel Chest Institute in Delhi, the Lady Willingdon Leprosy Sanatorium in Chingleput, the Silver Jubilee Children's Clinic in Saidapet, Madras, the Haffkine Institute in Bombay, the Indian Cancer Research Centre in Bombay, the Central Research Institute in Kasauli, the Pasteur Institute in Coonoor and the Central Drugs Laboratory in Calcutta. There are several privately owned research organizations, including the Bengal Immunity Research Institute in Calcutta, which conducts research on a large range of problems which have a bearing on the prevention, control and cure of disease.

International Collaboration

India has been a Member of WHO since its inception. Collaboration in the field of health has also

been established with UNICEF, the United States Agency for International Development, and the British Medical Research Council, and with the Union of Soviet Socialist Republics. India has also co-operated for a long time either directly or indirectly with the International Hospital Federation, the International Union against Tuberculosis and the League of Red Cross Societies.

Government Health Expenditure

In the 1963/64 fiscal year the estimated expenditure by the state governments on health services was Rs 1131 million. This sum represented 5.6 per cent. of their total budgeted expenditure. No data are available concerning health expenditure by central or local government administrations.

INDONESIA

Population and Other Statistics

At the last census, taken in October 1961, the population of Indonesia was 97 387 000. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	97 387 000	99 656 000	102 007 000	104 445 000
Birth rate * (per 1000 population)	39.4	31.9	35.3	29.7
Death rate * (per 1000 population)	15.3	14.6	12.6	14.0
Natural increase (per cent.) *	2.41	1.73	2.27	1.57
Infant mortality rate * (per 1000 live births) . . .	98.0	89.8	76.8	77.4
Maternal mortality rate * (per 1000 live births) .	3.2	2.8	2.6	2.5

* The registration of vital statistics is not yet applied throughout the whole country. From the registration areas the returns are not always complete. The above rates are taken from representative areas, six Regencies in Central Java, where the registrations are fairly adequate.

Information as to the causes of death is available only from hospital records. Among the most important causes during 1962 were: diseases peculiar to early infancy, pneumonia, tuberculosis (all forms), gastritis, duodenitis, enteritis and colitis, accidents, complications of pregnancy, heart diseases, tetanus, malignant neoplasms, typhoid and paratyphoid fevers.

The communicable diseases most frequently notified in 1964 were: typhoid and paratyphoid fevers (3388), bacillary dysentery (2765), infectious hepatitis (2309), smallpox (1874), diphtheria (807), cholera (326), meningococcal infections (17), poliomyelitis (7).

Organization of the Public Health Services

At the central government level, the Department of Health, headed by the Minister of Health, is the responsible authority for medical and public health services. The Minister of Health is assisted by four deputy ministers, respectively in charge of medico-technical matters, administration, "specific matters" and pharmacy. The directorate for preventive medicine and the directorate for curative medicine are under the direction of the Deputy Minister for Medico-technical Matters. The directorate for preventive medicine comprises the following divisions and sections: prevention of disease, including epidemiology, control of disease, child and youth health, nutrition, health education and public health laboratories. The malaria eradication programme is directly under the Minister of Health, while the smallpox control programme, executed and financed by the provincial governments, comes under the epidemiological section of the Department of Health.

The provincial health services are headed by a director. As the provincial governments are autonomous, the director of each provincial health service is administratively responsible to the Governor, whereas technically he is responsible to the Minister of Health. At the local authority level the head of the health services is responsible to the regent or mayor, while technically he is responsible to the director of the provincial health services. The activities of the local health services cover such fields as medical and nursing care, communicable diseases control, maternal and child health, school health, health education,

environmental sanitation, maintenance of health records, education and training of the lower grades of auxiliary personnel.

Hospital Services

In 1964, the total number of hospitals and institutions for in-patient care was 994, with 79 425 beds, equivalent to a bed/population ratio of 0.8 per 1000. Of these 994 hospitals, 686, providing 61 449 beds, were state-maintained. The total number of 79 425 beds was distributed as follows:

Category and number	Number of beds
General hospitals	662
Tuberculosis hospitals	19
Maternity hospitals	215
Psychiatric hospitals	26
Eye clinics	6
Venereal disease clinic	1
Leprosaria	64
Orthopaedic hospital	1
	58 986
	1 645
	4 210
	6 490
	761
	240
	6 913
	180

In 1964, out-patient facilities were available at 922 hospital out-patient departments, 5671 polyclinics (staffed by a nurse and one or two helpers) and 34 health centres. There were nearly 20 million new out-patients during the year and about 30 million out-patient attendances.

Medical and Allied Personnel

In 1964, Indonesia had 2935 doctors, of whom 1323 were in government service. The doctor/population ratio was thus one to 36 000. Other government health personnel included:

Dentists	254
Dental assistants	104
Pharmacists	162
Pharmaceutical assistants	1 000
Fully qualified midwives	3 278
Fully qualified nurses	23 956
Sanitary engineers	525
Laboratory technicians	762
X-ray technicians	168
Others	2 659

Communicable Disease Control

The national malaria eradication programme was started in 1959. At the end of 1964, this programme covered the islands of Java, Madura, Bali and the southern part of Sumatra. These together amount to about one-ninth of the country's surface and are inhabited by two-thirds of the entire population, i.e., by about 67 million of the total population of 104 million. Pre-eradication activities have been intensified in the other islands.

After 1959, the main emphasis in the tuberculosis control programme was placed on establishing new tuberculosis centres. The BCG mass campaign has covered 76.3 per cent. of the population. This vaccination procedure will be integrated as a permanent and regular function of the general health services.

The number of smallpox cases dropped from 5045 with 744 deaths in 1961 to 1870 with 103 deaths in 1964. The whole population is revaccinated against smallpox every five years. The anti-yaws campaign, known as TCPS (treponematosis control programme with simplified methods) was started in 1950. Though the incidence differs considerably from place to place, the average prevalence rate before the first mass treatment was 8.67 per cent. in Java and Madura and 18.22 per cent. in the other islands. The TCPS is a typical example of an integrated programme, as the polyclinic, which is the lowest health unit, is responsible for the control activities. At the end of 1964, practically all TCPS units in the islands of Java and Madura had reached the consolidation phase, while in respect of the other islands 56 per cent. of the area and 50 per cent. of the population had been covered. The average leprosy incidence is one per 1000 population, while the highest figure found in some parts of West Irian is about seven per 1000. The leprosy control programme is being gradually integrated into the local health services, commencing in the provinces of East Java and Central Java. Treatment is mainly ambulatory. Mental and physical rehabilitation, including orthopaedic surgery and physical therapy, are carried out at the Sitanala Rehabilitation Centre, Tangerang. The venereal disease control programme is operated by the local health services in 60 towns in co-operation with voluntary agencies, and is under the guidance of the Venereal Disease Institute in Surabaya. The problem is particularly serious in Java and to some extent in the large seaports of the other islands. In 1957-1958 a pilot trachoma control project was initiated. It revealed that trachoma appears in Indonesia in a very mild form. The main causes of blindness in Indonesia are xerophthalmia, gonorrhoea and, in certain areas, interstitial keratitis.

Specialized Units

In 1963, maternal and child care was provided in 3626 centres which were attended by 1 123 285 pregnant women, 789 715 children under one year of age and 578 924 children aged between one and five years. Domiciliary visits were paid to 294 094 pregnant women, 595 663 children under one year and 315 413 children aged between one and five years. There were 215 607 deliveries (six per cent. of all deliveries) attended by a doctor or qualified midwife. (This

total excludes those attended by midwives who are not working in maternal and child health centres.) In 1964, 506 200 children (approximately seven per cent. of the total school population) were under medical supervision. In 1963, 150 dental units treated about 500 000 patients; 2049 new out-patients attended two independent medical rehabilitation centres and 19 hospital rehabilitation departments, and 6180 new patients attended the 19 psychiatric out-patient clinics. Other specialized health units included 31 tuberculosis centres, 72 eye clinics, 168 leprosy treatment centres and 60 venereal disease units. Thirteen public health laboratories carried out approximately 880 000 examinations.

Major Public Health Problems

In the outer islands malaria is still the greatest problem. Tuberculosis is also very important. A survey made in Jogjakarta has shown a prevalence rate of 4.07 per cent. of active cases. BCG vaccination, started as a mass campaign, has been gradually limited to the groups of people at risk. Smallpox has not yet been eradicated, though regular vaccinations and revaccinations have been carried out for several years. The nutritional problem is not only a matter of education in the use and methods of preparing nutritive food, but even more a matter of distribution and transportation of food. It is not uncommon that the surplus food in some areas cannot be transported to other areas because of inadequate communications. An interdepartmental National Food Board deals with this particular problem. The prevalence of gastro-enteric infections, mainly due to poor hygiene and sanitation, and the lack of safe water supplies, are also causing concern.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The growing health consciousness of the population, expressed by an increasing demand for more health institutions, is a general feature of the decade under review. The campaign against illiteracy has played an important role in this respect. The felt need for health improvement is also expressed by the increased interest of the population in sport. Television, which was introduced in 1962, has a regular health programme and thus acts as a mass medium for health education. The increase in tourism and the establishment of village social institutes in every village also have an influence on the health condition of the population.

National Health Planning

National health planning is part of the overall national planning for economic and social development. The National Planning Board co-ordinates the planning activities of the various ministries. Each ministry has a departmental planning board which acts in an advisory capacity. There is thus a national health planning body within the Department of Health. The general objectives of the national health plan are: strengthening of the infrastructure (a health centre for every 10 000 inhabitants, a small hospital for every 150 000 inhabitants, a local hospital in every municipality, regional hospitals in every province, a public health laboratory for each province); establishment of new pharmaceutical plants; communicable disease control with priority for malaria eradication; training of health personnel; extension of piped water supply systems and improvement of environmental sanitation in towns. The implementation of all plans is co-ordinated by the National Planning Board, and this applies in particular to the projects financed by the autonomous provincial and local governments.

Medical and Public Health Research

In 1956, the Indonesian Academy of Science was established and in 1962 it became the Department of Research, headed by a minister. Every department has its own budget for carrying out research work, but the Department of Research provides supplementary funds.

International Collaboration

Apart from its collaboration with the international agencies, Indonesia collaborates in health matters with Australia, Portuguese Timor, the Union of Soviet Socialist Republics, the United States of America, and several international religious organizations.

Government Health Expenditure

In 1963, the total general government expenditure amounted to 226 462 million rupiahs, of which 6096 million rupiahs (i.e., 2.7 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of approximately 60 rupiahs per head on these services. A further sum of 308 million rupiahs was spent on capital account for the development and expansion of health services.

MALDIVE ISLANDS

Population and Other Statistics

At the last census, taken in 1965, the population of the Maldives Islands was 97 743. The following are population estimates for the years 1961-1964:

1961	92 793
1962	92 744
1963	94 527
1964	96 000 *

* Provisional estimate

A sample mortality survey held in 1965 on the island of Male showed that 50.1 per cent. of all deaths occurred in children under five years of age.

Hospital Services

In 1965, the Maldives had one general hospital and three health centres. The general hospital and one health centre are situated in Male, the capital. The health centre is responsible for the tuberculosis, leprosy and immunization services. The health centre on Gaidu Island is engaged in the treatment of leprosy patients segregated in the neighbouring two islands. The other centre is situated at Naifaru and deals

with the treatment of minor illnesses, preventive measures, health education and communicable diseases control. All three health centres are staffed by health assistants. There is also a mobile health unit.

Medical and Allied Personnel

In 1965, the islands had two doctors, three qualified nurses, 15 health assistants, 19 nurse aides and 14 indigenous midwives. Another ten nurse aides are under training.

Environmental Sanitation

The population of the Maldives Islands lives in 210 separate communities. All inhabitants have water from community or private wells.

Government Health Expenditure

In 1965, the total general government expenditure amounted to Rs 15 291 635, of which Rs 373 122 (i.e., 2.4 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of Rs 3.8 per head on these services.

NEPAL

Population and Other Statistics

At the last census, taken in June 1961, the population of Nepal was 9 387 661. In 1965, the population was estimated at 10 294 484. According to a sample study involving ten per cent. of hospital in-patient records collected in the year 1964-1965, the main causes of death in the Kathmandu Valley were: gastro-enteritis and colitis, except diarrhoea of the newborn, infections of the skin, diseases of the genito-urinary system, tuberculosis of the respiratory system, and dysentery, all forms.

Organization of the Public Health Services

The Directorate of Health Services, which is under the Secretary to the Minister of Health, is in charge of the organization and administration of the health services. It is planned to decentralize the administrative structure of these services by having the Directorate of Health Services at the central level, zonal offices at the intermediate level and district offices and health posts at the peripheral level. The central Directorate includes six sections dealing with maternal

and child health and family planning; nursing; communicable diseases; community services, including hospitals; planning and statistics and international agencies; training programmes and health education. In implementing the third health plan, the Government intends to establish seven zonal health offices, and to extend existing hospitals rather than to build new ones. It is hoped to develop a type of institution which will serve both as a hospital and as a health centre.

Hospital Services

At the end of 1964, Nepal had 57 hospitals and establishments for in-patient care, providing 1756 beds (equivalent to a bed/population ratio of 0.2 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals (including prison and military hospitals)	53
Tuberculosis hospital	1
Infectious diseases hospital	1
Maternity hospital	1
Leprosarium	100

Out-patient facilities were available in 1963 at 45 hospital out-patient departments and 102 health centres.

In the third development plan emphasis is placed on programmes for the consolidation and upgrading of already existing hospitals. Of the 75 development districts, 43 will be served by a hospital and the remaining 32 by a district health centre staffed by a qualified doctor.

Medical and Allied Personnel and Training Facilities

In 1965, Nepal had 224 doctors, of whom 197 were in government service and 27 in private practice. The doctor/population ratio was one to 46 000. Other health personnel included:

Medical assistants	109
Dentists	5
Pharmacist	1
Fully qualified midwives	18
Assistant midwives	16
Fully qualified nurses	62
Sanitary engineer	1
Sanitary inspectors	31
Laboratory technician	1
Auxiliary health workers	25

High priority is given in the third development plan to training of professional and auxiliary health personnel. It is proposed to increase the annual output of nurses from 30 to 40. It is also planned to add two more centres to the existing training centres for

assistant nurse/midwives. It is the intention of the government to establish a medical college in Kathmandu during the period covered by the third plan.

Communicable Disease Control and Immunization Services

Malaria eradication activities, including spraying and case-finding, are being continued. Pilot projects for the eradication of smallpox, leprosy and tuberculosis have been set up. Smallpox vaccination campaigns started in the Kathmandu valley in 1962. During 12 months of 1964-1965, 127 643 smallpox vaccinations were carried out, and it is planned to extend smallpox control operations to districts outside the valley. The leprosy survey has been completed and a systematic case-finding programme is planned, together with distribution of drugs to leprosy patients, rehabilitation measures and development of in-patient and out-patient facilities.

Specialized Units

Services for the care of mothers and children are available in four centres which in 1964 were attended by 244 pregnant women, 589 infants under one year and 1621 children aged between one and five years. Domiciliary care was given to 119 pregnant women and 883 children.

THAILAND

Population and Other Statistics

At the last census, taken on 25 April 1960, the population of Thailand was 26 257 916. Population and other vital statistics for the period 1960-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	27 180 000	27 995 000	28 835 000	29 700 000
Number of live births	913 805	973 634	1 020 051	...
Birth rate (per 1000 population)	33.6	34.8	35.4	...
Number of deaths	210 709	221 157	233 192	231 095
Death rate (per 1000 population)	7.8	7.9	8.1	7.8
Natural Increase (per cent)	2.58	2.69	2.73	...
Number of deaths, 1-4 years	28 954	32 353	36 081	32 862
Number of Infant deaths	46 575	43 489	38 696	42 358
Infant mortality rate (per 1000 live births)	51.0	44.7	37.9	...
Number of maternal deaths	3 646	3 644	3 674	3 553
Maternal mortality rate (per 1000 live births)	4.0	3.7	3.6	...

Of the 231 095 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (136 275), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (12 079), tuberculosis, all forms (8470), pneumonia (7622), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (7078), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (6073), accidents (6010, including 1421 in motor-vehicle accidents), malaria (5287), homicide and operations of war (4194), deliveries and complications of pregnancy, childbirth and puerperium (3553), malignant neoplasms (3170).

The communicable diseases most frequently recorded in 1962 and 1963 were: leprosy (55 214 in 1963), dysentery, all forms (26 721 in 1962), malaria, new

cases (24 038 in 1963), gonorrhoea (10 896 in 1963), influenza (10 782 in 1962), trachoma (10 302 in 1962), tuberculosis, all forms, new cases (8846 in 1962), syphilis, new cases (7400 in 1963), whooping-cough (3737 in 1962), typhoid fever (2412 in 1962). There were 1392 cases of cholera in 1964.

Organization of the Public Health Services

The responsibility for the central administration of the health services of Thailand, with its population of nearly 30 million, devolves on the Ministry of Public Health, which has the following four component divisions:

The Office of the Under-Secretary of State, which co-ordinates the work of the other departments, and is concerned with vital statistics, medical registration, international health, food and drugs, and the general control of certain major communicable diseases, such as tuberculosis, malaria, filariasis.

The Department of Health, which deals with the prevention and control of disease, and the supervision of institutions for the communicable diseases. It also supervises the 71 provincial health offices and the 2000 health and midwifery centres within the provincial administrations.

The Department of Medical Services, which maintains 86 general and six mental hospitals. Of particular interest is the Buddhist Priests' Hospital, which not only provides medical care for monks from the whole of Thailand, but also advises the monasteries on matters relating to health and sanitation.

The Department of Medical Sciences, which promotes research and provides diagnostic and public health laboratory services.

The provincial health administration is based on the 71 provinces into which Thailand is divided administratively. Each province has a governor, and the principal medical officer who is the head of the provincial department of health is responsible to him. The provincial department of health maintains and supervises the peripheral health services, which are based on health centres. These, though their function is mainly preventive, provide limited medical care facilities to the rural population. The head of the department also receives assistance from a number of laboratories and mobile teams provided by the Ministry of Public Health to carry out specialized health programmes in malaria eradication, yaws and tuberculosis control, etc.

Each province has at least one provincial general hospital and access to mental hospital beds. The

hospitals are also encouraged to initiate local health activities in maternal and child health, health education, etc. These hospital services are administered by the director of the provincial hospital who, though appointed by the Ministry of Public Health, is also directly responsible to the Governor.

In addition to the local laboratory facilities there are three regional public health laboratories administered by the Department of Medical Sciences.

Changes of Administration during the Period under Review

The increasing burden of health work has necessitated the creation of four new divisions in the Ministry of Public Health since 1963. These include a division for hospital statistics, which has introduced a modern system for hospital records.

In the field of legislation, new acts have been introduced for food control, and the registration of private hospitals and clinics. Penalties under the act dealing with harmful habit-forming drugs have been drastically increased.

Hospital Services

In 1963, Thailand had 149 general hospitals with 14 948 beds, two tuberculosis hospitals, an infectious diseases hospital, a maternity hospital, a paediatric hospital, six psychiatric hospitals and two chronic diseases hospitals. Those 162 establishments together provided 21 673 beds, equivalent to 0.75 beds per 1000 population. In 1963, 557 178 hospital admissions were recorded. Additional in-patient care facilities were available in 13 leprosaria, a convalescent home, three old people's homes and 859 medical centres.

Out-patient care services were given in 1964 at 128 hospital out-patient departments, 3291 polyclinics, 916 health centres, 33 dispensaries and 84 medical aid posts.

Medical and Allied Personnel and Training Facilities

In 1963, the number of doctors was 3815, of which 1415 were in private practice. The doctor/population ratio was thus one to 7560. Other health personnel included:

Medical assistants	263
Dentists	335
Pharmacists	1 108
Fully qualified nurses	1 165
Fully qualified nurses with midwifery qualifications	5 567
Midwives	2 125
Nursing and midwifery auxiliaries	216
Veterinarians	200
Sanitary engineers	56
Sanitary Inspectors or sanitarians	1 821
Laboratory and X-ray technicians	522

During the period under review a faculty of graduate study has been established in the University of Medical Sciences. Internship after graduation from medical school has become compulsory and advanced courses in clinical medicine and dentistry have been made available in the new institution.

Training facilities for health personnel include three nursing schools, a one-year training course for sanitarians and district health officers, and three schools of midwifery (one in Bangkok, one in the northern province and one in the north-eastern province). Between 1954 and 1964 almost 400 nurse/midwives graduated from these schools. From 1959 to 1964 more than 13 000 indigenous midwives were trained.

Communicable Disease Control and Immunization Services

Tuberculosis in Thailand is an urban rather than a rural disease. Relatively rare in children, it has its maximum prevalence in adults over the age of 35, particularly men. Surveys carried out in 1960-1962 suggested that 1.5 per cent. of the Bangkok population and 0.6 per cent. of the rural population were suffering from infectious tuberculosis. It was estimated that very many more have pulmonary infection detectable by X-ray.

Trachoma with its sequelae is very common and in eastern Thailand a prevalence rate of approximately 40 per cent. of those examined was found. Pre-school and primary school children are the main sources of infection. In a pilot project, supported by UNICEF and WHO, the methods of control which could be applied economically and effectively in a long-term programme are being studied.

An accurate picture of the prevalence of the venereal diseases is not obtainable, although it is known that the reported cases of syphilis increased from 5745 in 1960 to 8295 in 1964. There are 38 venereal disease control units. The occurrence of infectious yaws, which was formerly very high, is now less than one per cent. More than 20 million persons had been examined and 1.5 million infectious cases and two million contacts treated by 1964. It was hoped to eradicate the disease by the end of 1966.

Cholera returned in 1958-1959 and in 1963, causing 2216 cases and 155 deaths in the latter year and 1392 cases and 46 deaths in 1964. Two million persons were vaccinated in these two years and in addition there has been active health education.

With regard to smallpox there is a five-year plan to vaccinate or revaccinate 80 per cent. of the population, and 100 per cent. in the border areas. There has been no case of plague since 1952, but the control units remain active. A disease, now called Thai haemor-

rhagic fever, came to notice in 1958. There were 2147 cases with 167 deaths in 1963, and 7662 cases and 385 deaths in 1964. The insect vector is *Aedes aegypti* — DDT space spraying is now used extensively as a control measure in the infected areas.

Considerable progress has been made towards the eradication of malaria in Thailand. Prior to the large-scale use of DDT spraying it was widely distributed throughout the country, but DDT spraying has altered the endemicity, which in certain areas is now very low. The surveillance operations carried out in the consolidation and late attack phase areas have had significant successes. In 1961, from amongst the population of 5 468 948 under malaria surveillance, 326 241 blood smears were examined with a slide positivity rate of 14.36 per cent. In 1964 the comparable figures were 11 326 536 persons under surveillance, 1 047 124 smears examined, 3.32 per cent. positivity rate.

A filariasis control programme was initiated in 1961. Mass blood examinations for microfilariae in one area disclosed a gross infection rate of 2.3 per cent.; and amongst those physically examined there was an elephantiasis rate of one per cent. Mass distribution of diethylcarbamazine salt has been tried on an experimental basis. DDT spraying already takes place in the malarious areas and is extended where necessary to areas where filariasis is present. There is some evidence that the antimalarial campaign has contributed to the reduction in filariasis.

The following immunization procedures were carried out in 1963:

Smallpox	12 176 439
Cholera	8 014 127
Typhoid and paratyphoid fevers	874 289
BCG	445 969
Diphtheria	281 292
Whooping-cough	103 260
Tetanus	12 318

Chronic and Degenerative Diseases

Considerable attention is being given to cancer and the mental and nervous disorders. A national cancer institute has been started.

Specialized Units

In 1964 there were 30 maternal and child health centres, attended by 2223 pregnant women, 12 316 infants under one year and 23 763 children aged between one and five years. The domiciliary health service looked after 2723 pregnant women, 8949 infants under one year and 2287 children aged between one and five years. In 1963, 41 359 deliveries were attended by a doctor or qualified midwife. It is estimated that more than 70 per cent. of all births in

Thailand are still attended by indigenous midwives. Also in 1963, 26 school health units gave services to 462 994 schoolchildren (i.e., 27 per cent. of the total school population). Thirty-five dental units treated 74 602 persons. Other specialized units included five chest clinics, eight mobile case-finding units, 12 mobile treatment teams, six mobile BCG vaccination units, two trachoma units and six public health laboratories.

Environmental Sanitation

In 1964, out of 5114 communities, 98 were served with piped water systems. A total of 151 602 persons had individual sewage installations (septic tanks and latrines).

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Amongst the several major developments which have affected the health situation of the country, attention must first be directed to the six-year plan for national economic development (1961-1966) which was instituted in July 1961. It was prepared in co-operation with the interested government departments by the National Economic Development Board. To achieve the broad objectives of the plan many of the public health programmes, notably those concerned with communicable diseases, have received considerable attention, and satisfactory progress has been made. Evaluation of the first three years' operation of the plan showed that the expansion of the rural health services was actually in advance of the set targets. Similarly, there has been a substantial increase in the number of hospital beds.

Before the census of 1960, the annual rate of population increase had been estimated to be two per cent. It was then found to be three per cent. This rapid rate of increase caused great concern to the Government, which after deliberation caused a family planning pilot project to be started in a rural area with a population of 70 000, 50 miles from Bangkok. A survey disclosed that about 70 per cent. of married women in the area desired advice on family planning methods. Further evidence of the existence of this need is to be found in hospital reports on the increasing number of female sterilizations which are being carried out. It is estimated that no fewer than 10 000 are now performed annually in Thailand.

As a result of this population increase it is anticipated that the child health services and the programmes for school health and nutrition promotion must all be strengthened. The effect of the increase is also seen in the migration of the rural population into the towns. Particularly where the migration occurs from areas where dam construction has resulted in an increased

prevalence of certain infectious diseases, steps are being taken to prevent the introduction of these conditions into the towns.

The extension of the period of primary education from four to seven years has had repercussions, particularly in the rural areas. Rural schools are very important foci for the spread of yaws, trachoma, and intestinal parasitism. This situation has made it imperative to expand the school health services, though this will be difficult owing to shortage of personnel.

National Health Planning

Public health activities in Thailand date from 1888, when a Department of Medical Care was established. This was succeeded in 1918 by a Department of Public Health, and in 1942 by a Ministry of Public Health. Between 1949 and 1957 at least 50 health projects in the fields of maternal and child health and the control of communicable disease were planned and implemented by the Ministry.

Overall planning for the social and economic development of Thailand was started only in 1959, when the National Economic Development Board was established. The Board formulated a plan for economic and social development covering the period 1961-1966. This plan was in two three-year stages, and the health plan followed the same pattern.

Planning in the health field is initiated by the Ministry of Public Health, but the health plan is co-ordinated by the National Economic Development Board with the plans prepared by the other government departments. At present there is no special planning unit in the Ministry of Public Health, but the need for one is appreciated.

Already the increase in the rate of population growth disclosed by the 1960 census, and the steady movement of labour from agricultural to industrial employment with its consequential though gradual transformation of the national economic structure, have influenced the content of the health plan. First priority is given to the control of the communicable diseases of economic significance, e.g., malaria, yaws, leprosy, hookworm and nutritional diseases, all of which are found in the rural areas. But the needs of the curative services for general hospitals, mental institutions, etc., and of the preventive and health promotive services for clinics and health centres, both in the rural areas and in the towns, must also be met. The present felt needs, as expressed by the general public, are for greater attention to the curative services than to those concerned with prevention. This preference is reflected in the relatively high allocations in the health budget to hospital construction and improvement. It is hoped through this expenditure to reduce the hospital bed/population ratio from one to 3700 to one to 2800.

The main problem in planning, however, is to provide the large number of professional and auxiliary health personnel which the health services now require. This difficulty exists quite separately from the planned expansion of the health services, and the potential demands arising from the population increase. According to projections made by the Ministry of Public Health, 100 doctors and 300 nurses should be recruited each year between 1964 and 1966 to work in the provincial hospitals. But it was anticipated that the annual recruitment would, in fact, not exceed 80 doctors and 200 nurses.

The present doctor/population ratio is of the order of one to 7500. It is estimated that to reach a ratio of one to 5000, it will be necessary during the next 20 years to establish at least five new medical schools. At present that is not considered a feasible proposition, though a new medical school was established at Chieng-mai in 1961, and the building of another in the north-east of Thailand is under consideration.

It is also planned to increase the number of nursing schools administered by the Ministry of Public Health from three to five at an early date, and to enrol more students in the existing schools.

It is obvious that the dearth of professional personnel has increased the need for auxiliary health workers, and further facilities for their training are being provided under the plan.

Medical and Public Health Research

The institutions in Thailand which are concerned with medical and public health research are the Department of Medical Services and the Department of Medical Sciences, both major component parts of the Ministry of Health, the nine faculties of the University of Medical Sciences and, in a supporting role, the National Research Council.

The research activities of the two ministry departments lie in different fields. The Department of Medical Services encourages research in the hospitals on such subjects as the etiology of stone in the bladder,

leptospirosis, and the mental disorders. The Department of Medical Sciences has another range of research interests, some of which it pursues in its own laboratories (one of these is a very large producer of freeze-dried smallpox vaccine). They include research into the medicinal properties of indigenous plants, virus research, the study of the production and standardization of biological preparations, and the investigation of the various foods consumed by the Thai people.

Particular interest is shown by the Virus Research Institute in the many virus diseases which constitute significant public health problems in Thailand.

The teaching staff of the University of Medical Sciences are expected to carry out research as one of their normal functions.

Research in the field of public health is concerned not only with problems arising from the control of communicable diseases and infestations, but also with such matters as the nutritional status of certain population groups, and with the effect of socio-economic conditions on health. The communicable diseases and infestations studied include Thai haemorrhagic fever, the prevalent arbovirus and enterovirus diseases, bilharziasis, and the helminthiases.

In the field of the behavioural sciences, special attention is being given to the indications for, and the acceptability of, family planning amongst the lower socio-economic groups of the population.

Government Health Expenditure

In the fiscal year 1964 the total Ministry of Public Health expenditure on current account was 217 million baht, which is equivalent to 7.3 baht *per capita*.

Despite the rapid increase in population, government *per capita* expenditure on health has increased by 12 per cent. in the past four years. A further sum of 73 million baht was spent on capital account, of which 16 million baht were specifically related to projects included in plans for the development of health services.

EUROPEAN REGION

ALBANIA

Population and Other Statistics

At the last census, taken in October 1960, the population of Albania was 1 626 315. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 660 300	1 711 300	1 762 375	1 814 432
Number of live births	68 452	67 209	68 967	68 599
Birth rate (per 1000 population)	41.2	39.3	39.1	37.8
Number of deaths	15 415	18 363	17 646	15 811
Death rate (per 1000 population)	9.3	10.7	10.0	8.7
Natural increase (per cent.)	3.19	2.86	2.91	2.91
Number of infant deaths	5 439	6 188	6 248	5 593
Infant mortality rate (per 1000 live births)	79.5	92.1	90.6	81.5

Organization of the Public Health Services

The Ministry of Public Health is responsible for the administration of the country's health services. The public health services of the 27 administrative regions of the country are under the control of a regional directorate of health services. Each region is subdivided into communes. It is planned that each of these communes will have a health centre or a hospital. At the end of 1964, more than half of the rural communes had their health centre or hospital. All expenditure on health services is borne by the State. Medical care is free for all citizens.

Hospital Services

In 1963, Albania had 145 hospitals and establishments for in-patient care, providing 10 212 beds, equivalent to a bed/population ratio of 5.8 per 1000. During the year 162 052 patients were admitted to these establishments. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	81
Medical centres (without doctor) .	16
Tuberculosis hospitals	5
Maternity hospitals	41
Preventoria	2
	7 110
	407
	1 655
	840
	200

Out-patient facilities were provided in 1964 at 809 polyclinics and mobile health units.

Medical and Allied Personnel and Training Facilities

In 1964, Albania had 784 doctors, equivalent to a doctor/population ratio of one to 2300. Other health personnel included:

Medical assistants (feldshers)	549
Dentists	73
Dental assistants	124
Pharmacists	128
Pharmaceutical assistants	295
Fully qualified midwives	638
Fully qualified nurses	3 464
Veterinarians	179
Laboratory technicians	269
X-ray technicians	105
Dental technicians	101

The Medical Faculty of the University of Tirana provides training for doctors and stomatologists. The medical course, which lasts five years, will be extended to six years in 1966. The medical polytechnical school in Tirana provides four-year courses for paramedical personnel for rural areas (feldshers, midwives, etc.). Students enter this school after eight years of general education. There is also a nursing school which has a three-year programme.

Communicable Disease Control and Immunization Services

The most important post-war task has been the control of communicable diseases, which has been carried out with success by the public health services. Great efforts have been made towards case-finding, hospitalization, free treatment of patients, development of bacteriological laboratories, systematic vaccinations of the total population. Remarkable results have been achieved in the control of poliomyelitis and diphtheria. Syphilis, which has been widespread in the past, is now completely under control. Thanks to intensive tuberculosis control activities, including X-ray examination, tuberculin testing, BCG vaccination and chemoprophylaxis with isoniazid, the tuberculosis mortality rate was reduced to 1.1 per 10 000 inhabitants in 1964 as compared with 3.2 in 1955. Since 1955 a malaria eradication programme has been in operation. In 1963, the last malarious area in the country entered the consolidation phase. Only 30 indigenous cases of malaria were reported in 1964.

The following immunization procedures were carried out in 1964:

Typhoid and paratyphoid fevers	295 764
Poliomyelitis (Sabin vaccine)	258 817
Diphtheria	214 153
Smallpox	212 571
BCG	95 606
Tetanus	61 167
Whooping-cough	43 180

Chronic and Degenerative Diseases

Cardiovascular diseases cause 2.6 per cent. of all deaths. Special units for the treatment of patients suffering from these diseases have been established in the polyclinics. These are staffed by cardiologists. The mortality from rheumatic diseases was 2.5 per cent. of the total mortality in 1964, whereas the cancer mortality was 1.1 per cent. Special steps have been taken to organize the control and preventive services in respect of cancer. These are mainly based on the Oncology Institute in Tirana.

Specialized Units

In 1964, maternal and child care was based on 101 pre-natal and 103 child welfare centres. Domiciliary care was given to 137 032 pregnant women and 268 274 children aged between one and five years. A total of 34 038 deliveries (50.1 per cent. of all births) were conducted by a doctor or qualified midwife. The 67 dental health dispensaries were attended by 351 412 patients; 40 524 new psychiatric out-patients received 44 265 consultations. Seventy-two industrial establishments provided health and medical care to their employees and workers. Of the total industrial manpower, 90.8 per cent. were covered by these services. Other specialized units included 16 tuberculosis dispensaries, 20 tuberculosis aid posts and 36 venereal disease clinics.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The ten-year period under review has been marked by important developments in the fields of industry, agriculture, mining, education and culture. As a result, Albania has been transformed from a primitive and under-developed State into a country with an established agricultural and industrial economy. It is

progressing rapidly to a situation in which industry will predominate. In the health field, life expectation at birth increased from 38.8 years in 1938 to 64.9 years in 1960. Notable results have been obtained in the control and prevention of the major communicable diseases and in the extension of medical and health services. The number of medical personnel has been increased. Since January 1964, medical care has been provided free to all citizens. The health services in rural areas have been improved and special attention is given to industrial and occupational health.

National Health Planning

The economic and social life of Albania is developed in accordance with five-year plans complemented by annual plans. The national health plans are prepared within these overall development plans. Their elaboration is the responsibility of the Ministry of Public Health. Each of the regional directorates of health services prepares a draft plan for its region and submits it to the Ministry of Public Health, which prepares a general health plan based on these regional plans. That is then examined by the State Planning Commission and submitted to the People's Assembly for discussion and approval.

Medical and Public Health Research

Research is carried out at the Medical Faculty of the University of Tirana. The research investigations include studies of the important local health problems, malaria, measles, endemic goitre, tuberculosis, etc.

Government Health Expenditure

In 1964 the total general government expenditure on health services amounted to 173.2 million leks. This was equivalent to an expenditure of 95 leks per head on these services.

ALGERIA

Population and Other Statistics

At the last census, taken in 1960, the enumerated population of Algeria was 10 788 049. In 1963, the estimated population was 10 670 000, the birth rate and death rate were respectively 47.5 and 10.7 per 1000 and the infant mortality rate 70.1 per 1000 live births. The natural increase was 3.68 per cent.

Information on causes of death and incidence of communicable diseases is available only for Algiers,

which had an estimated population of one million in 1964. The total number of deaths recorded in the capital was 9961 in 1964. Among the main causes of death were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1416), motor-vehicle accidents (553), pneumonia (425), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (244).

The communicable diseases most frequently reported in Algiers in 1963 were: typhoid and paratyphoid fevers (1100), measles (939), whooping-cough (575), diphtheria (387), scarlet fever (188), dysentery, all forms (152), poliomyelitis (92).

Hospital Services

At the end of 1963, Algeria had 139 hospitals with 38 003 beds, of which 135 with 37 119 beds were state-maintained. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	126
Tuberculosis hospitals	7
Paediatric hospital	1
Psychiatric hospitals	2
Hospitals for surgery	2
Cancer hospital	1
	32 593
	1 856
	300
	2 746
	240
	268

Additional medical care facilities were available in old people's homes providing 3251 beds. The total bed complement of 41 254 was equivalent to 3.9 beds per 1000 population.

Out-patient care was provided at 159 hospital out-patient departments, 178 health centres, 977 dispensaries and 13 mobile health units.

Medical and Allied Personnel

At the end of 1964, Algeria had 1301 doctors, of whom 966 were in government service and 335 in

private practice. The doctor/population ratio was one to 8500. Other health personnel included:

Pharmacists	266
Fully qualified midwives	231
Assistant midwives	96
Fully qualified nurses	993

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	1 570 005
Typhoid and paratyphoid fevers, diphtheria and tetanus	233 595
Diphtheria and tetanus	136 049
Epidemic typhus	78 578
Diphtheria, tetanus and whooping-cough	52 841
Typhoid and paratyphoid fevers	49 061
Poliomyelitis (Sabin vaccine)	14 777
Poliomyelitis (Salk vaccine)	7 026
Diphtheria, tetanus and poliomyelitis	10 913
Cholera	9 000
Yellow fever	815

Specialized Units

In 1964, 12 centres were engaged in maternal and child care. The total school population had access to school health services provided in 82 centres. There were an independent medical rehabilitation centre and four hospital rehabilitation departments. Other specialized centres included 27 tuberculosis dispensaries, nine venereal disease dispensaries and seven trachoma dispensaries. Four public health laboratories carried out 48 986 examinations.

AUSTRIA

Population and Other Statistics

At the last census, taken on 21 March 1961, the population of Austria was 7 073 807. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 086 900	7 129 900	7 172 100	7 215 400
Number of live births	131 563	133 253	134 809	133 841
Birth rate (per 1000 population)	18.6	18.7	18.8	18.5
Number of deaths	85 673	90 854	91 579	89 081
Death rate (per 1000 population)	12.1	12.7	12.8	12.3
Natural increase (per cent.)	0.65	0.60	0.60	0.62
Number of deaths, 1-4 years	610	565	645	636
Death rate, 1-4 years (per 1000 population at risk)	1.33	1.19	1.32	1.27
Number of infant deaths	4 302	4 374	4 217	3 913
Infant mortality rate (per 1000 live births)	32.7	32.8	31.3	29.2
Number of maternal deaths	85	92	81	65
Maternal mortality rate (per 1000 live births)	0.65	0.69	0.60	0.49

Of the 89 081 deaths recorded in 1964 the main causes were: malignant neoplasms (18 524), arteriosclerotic and degenerative heart disease (16 168), vascular lesions affecting the central nervous system (12 243), all accidents (4942, including 1971 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (3446), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (3063), pneumonia (2515), hypertension (1940), cirrhosis of the liver (1817), suicide and self-inflicted injury (1645), tuberculosis, all forms (1415), chronic rheumatic heart disease (1065), diabetes mellitus (1030).

The communicable diseases most frequently reported in 1963 were: influenza (116 344), infectious hepatitis (8191), scarlet fever (7882), whooping-cough (6153), tuberculosis, all forms, new cases (3683), gonorrhoea (3186), syphilis, new cases (558), typhoid and paratyphoid fevers (393), diphtheria (285), dysentery, all forms (94), meningococcal infections (72).

Organization of the Public Health Services

The principal health authority in Austria is the Federal Ministry for Social Affairs. Within this ministry is the Division of Public Health, which is divided into six departments and three subdivisions. A Supreme Health Council has been established. It is an advisory board consisting of 16 regular and four extraordinary members: it is reappointed every three years. Other advisory councils include the balneological commission, the commission for radiation protection, the commission for the publication of the Austrian Pharmacopoeia, the commission for fixing the prices of drugs and the commission against alcoholism. The Federal Ministry is also responsible for the following institutes: the bacteriological and serological institutes in Vienna, Linz, Graz, Salzburg, Klagenfurt and Innsbruck, the institutes for food control in Vienna, Linz, Graz and Innsbruck, the chemo-pharmaceutical institute, the institute for biological products, the institute for serum control, the institute for rabies control and production of rabies vaccine, the Federal institute for the preparation of vaccines (especially smallpox and BCG vaccines), and the institute for experimental pharmacology and for balneology, all of which are in Vienna.

The Federal Ministry is not responsible for the sanitary services of communities, first-aid ambulances, hospitals, spas and health resorts. In these matters the nine federated states (*Länder*) are competent.

The highest executive authority in the nine federated states (*Länder*) of Austria is the state government or "Landesregierung". Each chief of a state (*Landeshauptmann*) is bound by the regulations of the Federal Ministry. Each state government has a health department under the direction of a supervisory health officer (*Landessanitätsdirektor*) who is assisted by the necessary specialists. In each state there is a health council which acts in an advisory capacity.

The district authorities are subordinated to the chief of the *Land*. At every district level there is a health officer and, in many cases, also auxiliary health officers. The district authorities establish centres for maternal and child health, tuberculosis control, school dental clinics, health examinations (cancer control), venereal diseases, crippling diseases, mental health, alcoholism and geriatrics.

At the lowest administrative level the communities are obliged by law to engage a community physician. He assists the mayor in an advisory capacity in public health activities of a local character.

Hospital Services

At the end of 1963, Austria had 312 hospitals and establishments for medical care providing 77 693

beds (10.8 beds per 1000 population). Of these institutions, 130 with 55 040 beds were state-maintained. During the year 1 064 228 patients received 25 188 604 days of in-patient care in all hospitals. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	108
Rural hospitals	76
Tuberculosis hospitals	22
Maternity hospitals	12
Paediatric clinics	8
Psychiatric clinics	13
Chronic diseases hospitals	15
Hospitals for general surgery	14
Cancer hospital	1
Hospitals for physical therapy	2
Geriatric Institutions	3
Other hospitals or clinics	19
Convalescent homes	18
Institution for alcohol addicts	1
	63

Out-patient facilities were provided in 1964 at 561 hospital out-patient departments, 93 polyclinics, 14 health centres and 257 medical aid posts.

Medical and Allied Personnel and Training Facilities

In 1964, Austria had 11 315 doctors, of whom 248 were in government service. The doctor/population ratio was one to 640. Other health personnel included:

Dentists	1 468
Dental mechanics	2 247
Pharmacists	2 294
Fully qualified midwives	1 467
Fully qualified nurses	12 614
Nursing aides without certificate	3 816
Veterinarians	1 456
Physical therapists *	252
Laboratory technicians *	696
X-ray technicians *	408
Medical technicians *	159
Medico-technical specialists *	141
Health assistants	2 320

* Hospital personnel only.

Physicians and pharmacists are trained at the universities in Vienna, Graz and Innsbruck. The federal schools for midwives in Vienna, Graz, Innsbruck, Salzburg, Linz and Klagenfurt are supervised by the Federal Ministry for Social Affairs. Dental training is given at a special institute in Vienna. Most of the nursing schools give training in general nursing. There are also schools for paediatric nursing and schools for training laboratory technicians.

Communicable Disease Control and Immunization Services

The epidemiological situation in Austria has been satisfactory during recent years. No major outbreak of the notifiable communicable diseases has occurred

during the period under review. Special mention must be made of the success of oral vaccination against poliomyelitis.

The following immunization procedures were carried out in 1962:

Poliomyelitis (Sabin vaccine)	8 975 045*
Diphtheria and tetanus	308 766
Smallpox	200 508
Diphtheria, whooping-cough and tetanus . . .	121 689
BCG	120 647

* Between autumn 1961 and spring 1963.

Specialized Units

In 1964, 3096 centres were engaged in maternal and child care. In 1963, 19 246 pregnant women received services at 70 pre-natal centres and 104 692 infants under one year of age and 1525 children aged between one and five years were under medical supervision at 3026 child health centres. Domiciliary visits were paid to 2638 pregnant women and 121 439 infants under one year. All deliveries were attended by a doctor or qualified midwife. In the same year, Austria also had 91 dental service units and 105 hospital rehabilitation departments. There were also four independent medical rehabilitation centres which were attended by 3591 new patients. There were 21 out-patient clinics for psychiatric disorders and 140 health care units for specialized treatment and prevention of disease. Six public health laboratories carried out 1 410 539 examinations.

Major Public Health Problems

The most serious public health problems in Austria are, in order of importance, the lack of hospital beds, the shortage of doctors and dentists in remote areas of the country, the shortage of nursing personnel, and the alarming increase in the incidence of cancer. To these must be added the incidence of heart and

vascular diseases, accidents, particularly traffic accidents and accidents due to intoxication. Other health problems are connected with the provision of safe drinking-water, air pollution, waste disposal, food control and public health education.

National Health Planning

The Supreme Health Council advises the Ministry for Social Affairs in matters concerned with health planning in a national context. Each *Land* also has a health council which is responsible for sanitary and health planning. The Federal Ministry for Social Affairs has addressed instructions to all *Länder* concerning hospital planning.

Medical and Public Health Research

Medical research is done mainly in the university hospitals in Vienna, Graz and Innsbruck, but also in big hospitals of the *Länder* and in other institutions. There are also an Austrian institute for cancer research, research institutes for rheumatic diseases and other establishments for specialized research. The scientific medical societies are also interested in research.

Government Health Expenditure

In 1963, the total general government consumption expenditure amounted to 27 400 million schillings, of which 7200 million schillings (i.e., 26.3 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 1004 schillings per head on these services. A further sum of 227.1 million schillings was spent of capital account for the improvement and expansion of health facilities. (These figures are not strictly comparable to those published in earlier reports on the world health situation, as they include estimates of health expenditure financed through social security agencies.)

BELGIUM

Population and Other Statistics

At the last census, taken in December 1961, the total population of Belgium was 9 183 948. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	9 183 948	9 220 578	9 289 770	9 378 113
Number of live births	158 431	155 061	159 192	160 371*
Birth rate (per 1000 population)	17.25	16.82	17.14	17.10
Number of deaths	106 985	112 758	116 718	109 342*

	1961	1962	1963	1964
Death rate (per 1000 population)	11.56	12.06	12.59	11.66
Natural increase (per cent.) .	0.57	0.48	0.46	0.54
Number of deaths, 1-4 years.	615	617	635	...
Death rate, 1-4 years (per 1000 population at risk)	1.01	1.00	1.03	...
Number of infant deaths . . .	4 448	4 270	4 328	...
Infant mortality rate (per 1000 live births)	28.08	27.54	27.19	...
Number of maternal deaths .	55	53	49	...
Maternal mortality rate (per 1000 live births)	0.35	0.33	0.31	...

* Provisional figures.

Of the 116 718 deaths recorded in 1963, the main causes were: arteriosclerotic and degenerative heart disease and other heart diseases (26 082), malignant neoplasms (21 995), vascular lesions affecting the central nervous system (8801), accidents (5078, including 1723 in motor-vehicle accidents), pneumonia (2817), diabetes mellitus (2328), bronchitis (1814), tuberculosis, all forms (1243).

In the same year, the communicable diseases most frequently notified were: scarlet fever (832), gonorrhoea (542), typhoid and paratyphoid fever (453), infectious hepatitis (418), syphilis, new cases (266), diphtheria (121), bacillary dysentery (56), poliomyelitis (38), meningococcal infections (32).

Organization of the Public Health Services

The Ministry of Public Health and Family Welfare, which was created in 1936, is composed of a general secretariat and seven divisions dealing respectively with general services, public health, social medicine, medical care establishments, welfare, family and housing, and compensation for war injuries. Certain health matters are, however, also included in the functions of other departments. Co-ordination between all the departments is ensured by an advisory body, the Public Health Council, established in 1849.

In each province there are one or two public health inspectors, who are physicians responsible for communicable disease control and for environmental health. In the provinces there are also inspectors who are specialized in laboratory investigations, the inspection of meat and other food products, trade in drugs, medico-social work and school medical inspection. The Ministry of Agriculture has provincial veterinary inspectors and the Ministry of Labour staff includes industrial medical officers.

Hospital Services

At the end of 1962, a total of 75 372 hospital beds—giving a bed/population ratio of 8.2 per 1000 population—were distributed as follows:

Category	Number of beds
Surgical wards	14 341
Medical wards	10 698
Mixed hospitals	5 317
Maternity clinics	5 554
Paediatric hospitals	4 305
Premature baby clinics	1 592
Communicable diseases hospitals	838
Tuberculosis hospitals	4 738
Psychiatric hospitals	27 450
Other hospital establishments	539

Medical and Allied Personnel and Training Facilities

In January 1965, Belgium had 13 425 doctors, including 223 stomatologists and 276 who were licenciates in dentistry. The doctor/population ratio was one to 690. Other health personnel included:

Dentists (licenciates in dentistry, not doctors)	1 143
Holders of former certificate of proficiency in dentistry	485
Pharmacists	5 934
Midwives	3 788
Veterinarians	1 161

There are four medical faculties in Belgium—at the Universities of Brussels, Ghent, Liège and Louvain—which grant the degree of doctor of medicine, surgery and obstetrics, the diploma in pharmacy and the diploma of licentiate in dentistry. There are in addition two veterinary schools—one in Brussels and one in Ghent. There are 18 schools that can award a midwife's diploma.

Communicable Disease Control and Immunization Services

It is estimated that there are between 15 000 and 20 000 active tuberculosis cases each year. The tuberculosis mortality rate is at present 13.4 per 100 000 population. Since 1964, medical examination in respect of tuberculosis has become compulsory for schoolchildren and teaching staff. Mass X-ray examinations of the population are organized regularly.

Each case of a venereal disease must be the subject of an anonymous declaration made by the consulting physician to the health inspector. The patient is obliged to submit to medical treatment, the necessary medicaments being paid for by the State. If he fails do so, the consulting physician addresses a formal declaration to the health inspector.

The following immunization procedures were carried out in 1963:

Poliomyelitis (Sabin vaccine)	7 943 781
Poliomyelitis (Sabin vaccine — completed immunization)	2 435 689
Diphtheria and tetanus	144 485
Smallpox (primary vaccinations)	120 000 approximately
Whooping-cough	66 501

Conscripts are vaccinated against typhoid and paratyphoid fevers, tetanus and smallpox when joining the army.

Chronic and Degenerative Diseases

A special committee subsidized by the Ministry of Public Health and Family Welfare is in charge of

the campaign against alcoholism, in which the main emphasis is placed on health education. The Belgian National League for Mental Hygiene plays a very active part in the campaign for mental health. It provides psychiatric out-patient clinics where consultations for alcohol addicts are also given. In this field of psychiatry the trend is primarily towards active forms of treatment and occupational therapy.

The organization of a campaign against smoking is being studied. Great efforts are made in the prevention of cancer. The National Society for the Control of Cancer, which is subsidized by the Government, is very active in the field of health education of the public. There are at present four cancer centres attached to the universities which are concerned with the detection and treatment of malignant tumours.

Specialized Units

In 1963, there were 350 pre-natal out-patient clinics, 1155 infant welfare clinics, 716 services for domiciliary infant surveillance, three mobile child care units and 466 out-patient clinics for children between three and six years old. They were attended by 62 585 pregnant women, 183 969 children under three years of age, and 38 829 children aged between three and six years. A formal school health service was set up in 1964. The nineteen psychiatric out-patient clinics were attended by 5763 new patients. Other specialized units included 116 tuberculosis dispensaries, which recorded 232 675 consultations in 1963, and 31 venereal disease clinics, which were attended by 3409 patients. There were 14 public health laboratories in 1963.

Environmental Sanitation

In 1964, of Belgium's total population, about seven million inhabitants had piped water to their dwellings and about 2 300 000 obtained water from public or private fountains. Sewerage systems served six million inhabitants and 600 000 had also sewage treatment facilities.

Major Public Health Problems

The major public health problems in Belgium are those of a highly industrialized country which has a high social and economic standing. Among the subjects causing particular concern to the health authorities, or to which they are paying especial attention, are: air pollution, pollution of surface water and treatment of waste water, insufficient resources of drinking-water, ionizing radiations, noise, total immunization of the population against the main communicable diseases, overcrowding in

psychiatric establishments, and the increasing incidence of cardiovascular diseases, malignant neoplasms and accidents.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the course of the decade many important additions have been made to the legislation concerned with the promotion and protection of the public health:

(a) *Public hygiene*

- (i) Comprehensive legislation has been passed relating to the protection of the public against the dangers resulting from ionizing radiation and sources of atomic energy.
- (ii) The royal decree of 6 June 1960 and the law of 25 March 1964 govern the manufacture, distribution, registration and dispensing of drugs.
- (iii) The law of 20 June 1964 governs the preparation, preservation and sale of food intended for human consumption and prohibits its adulteration. This law includes provisions concerning the employment of workers in the preparation and sale of food.
- (iv) The law of 28 December 1964 constitutes the basis for the control of air pollution.

(b) *Social medicine*

The law of 21 March 1964 provides for the compulsory inspection of schoolchildren by the responsible school authorities and for the supervision of the school health services by the Ministry of Public Health and Family Welfare.

(c) *Urgent medical care*

The law of 8 July 1964 transferred to the State the obligation to organize the transport to hospital establishments of all cases of injury or sickness occurring on the public highway or in a public place. Physicians are under an obligation to give first aid on the site of an accident. This law also established a fund for urgent medical care, in order to cover the cost of such aid.

(d) *Housing*

Existing housing legislation has been extended. The law of 27 March 1956 enables the General Savings Bank and Pension Fund to give financial assistance in the purchase and fitting out of homes for special social groups.

(e) Special assistance fund

A special assistance fund has been established by the law of 26 June 1956 to provide for the maintenance, treatment and, where necessary, education of the following indigent persons: children suffering from behavioural defects, the blind, deaf-mutes, crippled and infirm persons, persons suffering from tuberculosis and cancer, and the mentally sick.

(f) Hospitals

Under the law of 23 December 1963 hospital departments are required to have separate administration and accountancy services. The cost of maintenance per hospital day is fixed by the Government. The State will pay 25 per cent. of these charges for indigent persons, social security patients, railway personnel and war victims.

(g) Social security

The law of 9 August 1963 has considerably extended the compulsory national social security system covering sickness and invalidity inaugurated in 1945. Contributors join an insurance organization of their choice recognized by the State, but the medical care provided and the financial benefits paid are regulated by the National Institute of Health Insurance, a semi-official body.

(h) Physical education and sports

The conditions under which boxing and wrestling contests and exhibitions are permitted, and the way in which these sports are practised are laid down by the law of 31 May 1958.

National Health Planning

In Belgium, overall planning for social and economic development is the responsibility of the Ministry of Economic Affairs, and its Office for Economic Programming. Furthermore, a general programming section, including, under the direction of a public health physician, a statistician, a sociologist and a certain number of other staff, is being created as part of the General Studies Service of the Ministry of Public Health and Family Welfare.

In 1960, a health investment plan was drawn up covering the period 1961-1975. This plan comprises four parts:

- (1) social housing and homes for the elderly, invalids and orphans;
- (2) hospitals for acute and chronic disease patients and for the mentally sick; institutions (hospital-schools) for children suffering from various defects;
- (3) preventive medicine and health promotion through health centres, physical training centres and open-air schools;
- (4) environmental hygiene, including drinking-water distribution, sewage and refuse disposal, and abattoirs.

The requirements under each of these heads have been envisaged for three five-year periods; 1961-1965, 1966-1970 and 1971-1975. There is thus planning on both a short-term and a long-term basis.

Emphasis is placed on the need to have flexibility in planning and to take account of the important part played by the private sector in the health organization and equipment of services in Belgium.

In the hospital field there is effective co-ordination of preventive and curative medical care and the rehabilitation services.

Medical and Public Health Research

Scientific research in the domain of the medical and biological sciences is particularly the task of the staffs of the Belgian medical faculties and of the schools of veterinary medicine. In addition, however, other institutes, hospitals and interested individuals participate in research.

Financial support for research is available from several sources, of which the National Scientific Research Fund, the Medical Research Fund and the Fund for Basic Scientific Research are the most important. All these funds are subsidized by the Government.

The National Scientific Research Fund was established in 1928, and its interests in the medical field are mostly concerned with the basic (normal and pathological) medical sciences. For many years, it also supported clinical research, but in 1957 the Medical Research Fund was established within its network. The new fund is exclusively concerned with clinical research throughout the hospital field. Its financial allocation, which was ten million francs in 1957, was increased to 55 million francs in 1965. The Fund for Basic Scientific Research, which is also an integral part of the National Scientific Research Fund, makes certain contributions to research workers in the basic medical sciences.

BULGARIA

Population and Other Statistics

At the last census, taken in December 1956, the population of Bulgaria was 7 613 709. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 943 100	8 012 900	8 078 100	8 144 300
Number of live births . . .	137 861	134 148	132 143	130 958
Birth rate (per 1000 population)	17.4	16.7	16.4	16.1
Number of deaths	62 562	69 640	66 057	64 479
Death rate (per 1000 population)	7.9	8.7	8.2	7.9
Natural increase (per cent.) .	0.95	0.80	0.82	0.82
Number of deaths, 1-4 years	1 198	1 053	1 050	898
Death rate, 1-4 years (per 1000 population at risk)	2.3	2.0	2.0	1.7
Number of infant deaths .	5 212	5 002	4 714	4 304
Infant mortality rate (per 1000 live births)	37.8	37.3	35.7	32.9
Number of maternal deaths .	91	99	94	61
Maternal mortality rate (per 1000 live births)	0.66	0.74	0.71	0.47

Of the 64 479 deaths recorded in 1964, the main causes were: vascular lesions affecting the central nervous system (12 156), malignant neoplasms (10 815), arteriosclerotic and degenerative heart diseases (8 504), pneumonia (4 720), senility without mention of psychosis, ill-defined and unknown causes (3 740), all accidents (2 810), including 529 in motor-vehicle accidents, bronchitis (2 351), chronic rheumatic heart disease (2 187), hypertension (1 538).

The communicable diseases most frequently notified in 1963 were: influenza (55 879), measles (41 715), scarlet fever (12 671), tuberculosis, all forms, new cases (12 224), infectious hepatitis (11 990), dysentery, all forms (11 207), whooping-cough (9 685), gonorrhoea (3 809), syphilis, new cases (259), meningococcal infections (144).

Organization of the Public Health Services

The Ministry of Public Health and Welfare, set up in 1944, is the central authority for all the health services of the country. The medical schools in Sofia, Plovdiv and Varna, the post-graduate medical school in Sofia, the scientific research institutes and some specialized national health establishments come directly under the control of the Ministry. At the provincial level, the health and welfare services are directed by the Public Health Department of the Executive Committee of the People's Council. The Health Department controls and supervises the activities of the urban and rural health services within

the province. The administration of urban health services is, in most instances, a function of the town hospital, which controls all health establishments in the urban area concerned. The rural health service is the basic unit of the country's health organization. Each rural community has a health service covering environmental sanitation, personal health services and the small hospitals. Free medical care and health protection are guaranteed by law for the whole population.

Hospital Services

In 1963, the total number of hospitals and other health institutions providing in-patient accommodation was 6 757, with 64 855 beds (equivalent to a bed/population ratio of 8.0 beds per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	361
Scientific research institutes . .	10
Dispensaries	56
Health posts	5 204
Tuberculosis hospitals	9
Tuberculosis sanatoria	22
Infectious diseases hospital . .	1
Maternity hospitals	1 034
Paediatric hospitals	3
Psychiatric hospitals	15
Other establishments (for children, preventoria, night sanatoria, balneology, etc.)	42
	8 661

Out-patient care was available in 1963 at 416 polyclinics attached to hospitals, 26 independent polyclinics, 2 881 health centres, 59 dispensaries and 30 other out-patient establishments. Altogether 32 703 000 consultations and 2 404 000 domiciliary visits were recorded by these establishments.

The present policy of the Ministry of Public Health and Welfare is to develop large, highly specialized and well-equipped medical care institutions which will serve the population of a whole province. The small rural hospitals are being gradually closed.

Medical and Allied Personnel and Training Facilities

In 1963, Bulgaria had 13 022 doctors, equivalent to one doctor per 620 inhabitants. Other health personnel included:

Feldshers	3 692
Dentists	2 877
Pharmacists	1 859
Fully qualified midwives	4 149
Nurses, including children's nurses	15 696
X-ray technicians	3 163
Dental technicians	817

In addition to the medical school in Sofia, medical faculties were established in 1945 in Plovdiv and in 1961 in Varna. A post-graduate medical school was created in 1950 in Sofia. There are also 22 training schools for nurses, midwives, pharmaceutical assistants, laboratory technicians, etc.

Specialized Units

Bulgaria has a well-developed maternal and child health service. Every pregnant employed women is entitled to 120 days maternity leave. In 1963, 170 972 attendances were made by pregnant women at 2051 pre-natal dispensaries, of which 1862 were in villages. Over 500 000 domiciliary visits were paid to pregnant women by doctors and midwives. In the same year, 125 288 deliveries (94 per cent. of all deliveries) were attended by a doctor or qualified midwife. There were 2035 consultative clinics for children, attended by 121 635 infants under one year of age and 210 821 children aged between one and five years. At the end of 1964 there were 25 000 places for children in crèches; this provides for 17 per cent. of all children of the appropriate age. In the same year more than 340 000 children aged from three to seven were admitted to various kindergarten. Particular attention is paid to the health protection of schoolchildren, all of whom are under medical supervision at 1853 school health centres.

The 1665 dental dispensaries gave 9 065 800 treatments in 1963 and in the same year the consultative services of 30 psychiatric clinics were used by 9136 new out-patients. There were 117 public health laboratories.

In recent years the health authorities have made great efforts to encourage the medical and social rehabilitation of the sick and invalid and in 1963 130 independent medical rehabilitation centres and 243 hospital rehabilitation departments were attended by 607 511 patients. Much is being done to recuperate, rehabilitate and if necessary retain persons with reduced working capacity. Various industrial and agricultural establishments have been set up for this purpose. It is stipulated by law that every establishment should employ a number of partially disabled persons — up to ten per cent. of its total personnel.

The Bulgarian Red Cross, which has a membership of 1 543 295, is very active in the field of health education and preventive medicine.

Environmental Sanitation

At the end of 1963, 2740 communities out of a total of 5863 had piped water systems; 6 412 300 inhabitants were served with piped water to their dwellings or

depended on public fountains, and 1 698 800 obtained water from community or private wells. Sixty-one communities had sewerage systems which served 2 568 200 inhabitants; 5 542 900 persons were provided with individual installations, either septic tanks or latrines.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade the urban population nearly doubled, owing mainly to the development of industry, which attracts workers from rural areas. Bulgaria is being rapidly industrialized and industrial production accounted for 73 per cent. of the national income at the end of 1964. Agriculture has been heavily mechanized and is now fully on a collective, co-operative basis. Great efforts have been made in education and science. Primary, secondary and higher education are free and primary education is compulsory. In 1964, 1 829 000 children were attending school. Tourism has made considerable progress during the last ten years. In 1964, more than 60 000 foreign tourists visited the country.

National Health Planning

The five-year public health development plan is prepared simultaneously with the periodic five-year economic development plan which is approved by the National Assembly. This plan provides mainly for the construction of new medical care establishments and the training of health personnel. It is prepared jointly by the Ministry of Public Health and Welfare, the State Planning Committee, the Ministry of Finance and the State Committee for Science and Technical Progress. This planning group is also responsible for the co-ordination of the health plan with the development of other sectors. Specific programmes within the overall plan are concerned with water and air pollution, environmental hygiene in urban centres and industrial plants, housing, infant mortality, cancer control, tuberculosis control, etc.

Government Health Expenditure

In 1963, the total general government expenditure amounted to 3500 million leva, of which 158 million leva were spent on current account in providing health services and a further 4.6 million leva were spent on capital projects included in plans for the development and expansion of health facilities. The additional expenditure of other ministries and government agencies on health services is not included in the figures given above.

CZECHOSLOVAKIA

Population and Other Statistics

At the last census, taken in 1961, the population of Czechoslovakia was 13 745 577. Population estimates and some other statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	13 779 993	13 859 864	13 951 606	14 057 968
Number of live births	218 378	217 456	235 998	241 298
Birth rate (per 1000 population)	15.8	15.7	16.9	17.2
Number of deaths	126 376	138 716	133 107	134 859
Death rate (per 1000 population)	9.2	10.0	9.5	9.6
Natural increase (per cent.) .	0.66	0.57	0.74	0.76
Number of deaths, 1-4 years	1 027	1 002	957	953
Death rate, 1-4 years (per 1000 population at risk)	1.12	1.14	1.12	1.11
Number of infant deaths .	4 961	4 954	5 211	5 175
Infant mortality rate (per 1000 live births)	22.7	22.8	22.1	21.4
Number of maternal deaths .	87	102	85	88
Maternal mortality rate (per 1000 live births)	0.40	0.47	0.36	0.36

Of the 134 859 deaths recorded in 1964, the main causes were: malignant neoplasms (28 421), coronary arteriosclerosis and degenerative myocarditis (23 260), vascular lesions affecting the central nervous system (14 205), chronic rheumatic heart diseases and other cardiac diseases (8381), accidents (7234, including 2217 in motor-vehicle accidents), hypertension (5580), bronchitis (4737), pneumonia (4267), suicide and self-inflicted injuries (2905), senility without mention of psychosis, ill-defined and unknown causes (2826), diabetes mellitus (2566), tuberculosis, all forms (2211), birth injuries, post-natal asphyxia and atelectasis (1746) cirrhosis of the liver (1370), congenital malformations (1284).

In the same year the most frequently reported communicable diseases were: measles (77 388), infectious hepatitis (41 250), scarlet fever (26 328), bacillary dysentery (19 176), tuberculosis, all forms, new cases (11 376), gonorrhoea (6758), typhoid and paratyphoid fevers (1178).

Organization of the Public Health Services

The Ministry of Health is responsible to the government for the development of health services throughout the country. The Office of the Commissioner of Health of the Slovak National Council, which is organized along similar lines to the Ministry of Health, performs important tasks in the control of health services in Slovakia and at the same time constitutes

an important link in national administration. The Minister of Health is assisted by an Advisory Board and by the Scientific Council. The new organizational pattern of the Ministry provides for closer contact between its specialized organs, the Scientific Council and other representative scientific bodies.

The territorial and administrative reorganization of 1960 divided the country into 11 regions (the eleventh region being formed by the capital, Prague) with an average population of 1.3 million and the regions into districts averaging 120 000 inhabitants each. The regional and district national committees, which are responsible for health matters in their areas, have each established a health commission, whose secretary is the head of the health department of the regional or district national committee, and who is usually a physician specializing in health administration (social medicine). The health departments of the regional and district national committees are subordinate to the direction of the Ministry of Health in health matters of national importance.

At the local level, the town and local national committees do not directly control health institutions, but play an important role in health education and environmental health.

The district institutes of national health, which are controlled by the district national committees, form a uniform system of basic institutions for preventive and therapeutic care in their respective districts. They include: hospitals (usually two or three per district) and the establishments for out-patient care coming under them (territorial and factory polyclinics, rural area and factory health centres, out-patient clinics for women and children, rural medical stations, specialized establishments and pharmacies); a hygiene and epidemiological station and a district health education centre; a district health school.

The territory of the district is divided into local areas with under 4000 inhabitants. The basic out-patient services are provided by polyclinics and local area health centres. A local area medical officer (specialized, in particular, in internal medicine), a paediatrician, a gynaecologist and a stomatologist-dentist are attached to each local area. Local area health centres are also set up in medium-sized and large factories.

The Regional Institutes of National Health are well equipped with highly specialized services, and provide technical control and guidance to the District Institutes.

Research institutes, establishments for spa and climatic treatment, institutes for the further training

of physicians and paramedical personnel, pharmaceutical laboratories and other concerns manufacturing medical supplies come under the central administration.

Hospital Services

In 1964 the total number of 381 hospitals included 250 general hospitals with 107 278 beds and 131 specialized hospitals with 34 389 beds. There were thus 10.1 beds per 1000 population. Among the hospitals for specialized care were:

Category and number	Number of beds
Tuberculosis hospitals	49
Maternity hospitals	20
Paediatric hospitals	15
Psychiatric hospitals	29
Oncological hospitals	3
Other specialized hospitals	15
	1 1507
	373
	3 841
	16 576
	455
	1 637

If inclusion is made of 25 356 beds in establishments in watering-places and health resorts, the hospital bed ratio rises to 11.9 per 1000 population.

In 1964 out-patient care facilities were provided at 465 polyclinics (including 69 factory polyclinics), 1802 community health centres, 669 factory health centres, 2334 medical and dental posts including 1469 in factories, 175 welfare centres for women, 2688 welfare centres for children and 19 factory sick bays.

Medical and Allied Personnel and Training Facilities

In 1964 the health personnel working in the institutions of the Ministry of Health included:

Physicians	25 349
Dental surgeons	2 126
Stomatologists	2 632
Pharmacists	5 228
Nurses	35 491
Children's nurses	18 176
Midwives	4 634
Sanitary workers	1 408
Laboratory technicians	5 747
X-ray technicians	2 326
Rehabilitation workers	2 083

The new programmes and curricula of medical studies which had been worked out in connexion with the reorganization of the system of education have been introduced and developed. In the categories of paramedical personnel, a new category of "dental nurse" with four years of study has been introduced.

Communicable Disease Control and Immunization Services

A reduction in the incidence of infectious diseases, particularly of those which can be influenced by

specific prophylaxis, has been recorded in recent years. The morbidity from diphtheria is five times less than it was in 1960; no case of poliomyelitis has occurred since the second half of 1960. Tetanus incidence is now one-tenth of its 1960 level. Considerable attention is being given to infectious hepatitis. In the efforts to influence the incidence of anthropozoonoses, close co-operation between the health and veterinary services has proved most valuable. The number of new tuberculosis cases reported dropped from 18 124 in 1961 to 11 336 in 1964. The decrease in tuberculosis morbidity in children is particularly marked, thanks to intensive BCG vaccination. The prevalence of gonorrhoea increased from 3438 cases in 1961 to 6755 in 1964. The incidence of latent forms of syphilis continued to fall, but in 1964 an increase of newly detected syphilis cases was recorded. Trachoma still occurs, but very rarely, except in the eastern parts of the country, where its incidence in 1964 was 1.1 per 100 000 population.

Between July 1962 and June 1963 the following vaccinations were carried out:

Poliomyelitis (Sabin vaccine)	832 000
Smallpox	684 621
BCG	431 117
Tetanus	350 832
Diphtheria, whooping-cough and tetanus (complete primary vaccinations)	188 718
Tetanus, typhoid and paratyphoid fevers	85 852
Typhoid and paratyphoid fevers (complete primary vaccinations)	15 232
Cholera (complete primary vaccinations)	9 275

Chronic and Degenerative Diseases

Malignant tumours continue to be a serious problem connected with the general aging of the population and the continuing extension of the life-span. In 1964 cancer caused 21.1 per cent. of all deaths. The community health establishments and the specialized departments of the polyclinics actively participate in the prevention and early detection of cancer cases.

The group of cardiovascular diseases constitutes the most frequent cause of death in Czechoslovakia. These diseases are the commonest cause of temporary incapacity for work in persons over 50 years of age. Altogether they rank as the tenth most frequent cause of morbidity connected with temporary incapacity and take the first place among the causes of permanent disability.

Specialized Units

In 1964, there were 2350 gynaecological departments in regional and district health centres and polyclinics and 251 969 pregnant women were admitted for prenatal care. Midwives paid 2 453 968 domiciliary visits. Of all deliveries, 97.75 per cent. were institutional.

In the same year there were 4867 paediatric departments in regional and district health centres, polyclinics and community health centres, including child welfare centres; they supervised the health of 93.1 per cent. of all babies. The whole school population of 2 605 790 children received health care through the school health services.

There were 444 stomatology departments in regional and district health centres and 2426 community health centres with dental units; altogether these gave 26 379 894 treatments in 1964.

Other specialized health units included 126 hospital rehabilitation departments, 239 psychiatric departments or polyclinics, 1997 factory health units, 356 tuberculosis and 104 oncological departments in general polyclinics, and 121 children's cardiological departments.

Environmental Sanitation

In 1964, 51 per cent. of the total population had running water in their households and 49 per cent. used water from public or private wells. With regard to sewage collection and disposal, 76 per cent. of the population were served by sewerage systems and 24 per cent. by sewerage systems with equipment for sewage treatment; in addition, 59 per cent. had individual equipment, i.e., septic tanks and latrines.

Major Public Health Problems

The major public health problems in Czechoslovakia are those of securing healthy living conditions and a healthy development of the population. The progressive industrialization of the country, together with the resulting urbanization, have created new health and social problems. The dust nuisance and air pollution with smoke and industrial exhalations, a relatively high density of population and the contamination of streams with industrial waste are problems connected with this development. Important tasks are the provision of a sufficient quantity of safe drinking-water, and the protection of water sources and reservoirs. A number of further health problems derive from the changes in the life of rural populations, the mechanization of agricultural work and the wide application of chemicals in agricultural production. Questions connected with the nutrition and dietary habits of the population constitute another particularly complex problem. A long-term programme has been launched which aims at securing the optimum protein and vitamin allowances, while simultaneously trying to reduce the consumption of glycerides and fats.

Other major health problems are created by the increased incidence of chronic and degenerative

diseases. The rising accident rate, especially of traffic accidents, in all age-groups, is also causing concern.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In the field of education an outstanding development has been the all-round increase in the number of persons receiving instruction at every level of education—primary school, general and technical secondary school and university. The total number of students attending secondary schools increased from 258 300 in 1955 to 421 000 in 1964/65; university students doubled in number during the same period, increasing from 72 400 to 144 800.

Employment in industry as contrasted with agriculture has greatly increased during the decade. The number of persons working in industry was 2.4 million in 1964 as compared with 1.9 million in 1955. Of the former total, nearly 40 per cent. were women, whose employment in industry is still increasing. There was an almost similar reduction in the manpower in agricultural employment, namely, from 1.8 million in 1955 to 1.3 million in 1964.

The new Labour Law of 1965 introduces guarantees for the promotion of the health of workers. Other legislative enactments and regulations deal with such matters as the health of employed women with special regard to maternity, the placing of responsibility—with few exceptions—on the employing enterprise in the case of industrial accidents, and a further increase in the financial allowances under health and social insurance. Between 1956 and 1964 the total expenditure on these allowances rose from 6895 million korunas to 14 454 million korunas.

A new administrative structure which enlarges the areas of the previous districts and regions threefold has been adopted and should serve to facilitate the working and control of the health services.

The national income and personal consumption expenditure have both recorded increments during the decade, though there has been some retardation of the rate of increase in more recent years.

During the years immediately following the Second World War, the natural increase of the Czechoslovak population was of the order of 1.1 per cent. annually. During the period 1960-1964 it averaged 0.7 per cent.

In April 1964, it was decided by the Central Committee of the Communist Party of Czechoslovakia and by the Government that a document should be prepared which would set out the social and hygiene determinants of the healthy life, and emphasize that it is the duty of all enterprises, co-operatives, institutions and individual citizens to protect and promote health. The principles enunciated in this document

are to be embodied in the Unified Law on National Health Care, which will also guarantee the free provision of all health services to every member of the population.

All the foregoing changes and developments are regarded as factors which have affected directly or indirectly the health situation of the population of Czechoslovakia. Their effect is reflected in the progressive reduction of the infant and neonatal mortality rates, the increase of the population in the higher age-groups and the continuing extension of the average life-span.

National Health Planning

Planning for social and economic development was started in Czechoslovakia in 1946, when the first plan for economic development was prepared for the period 1947-1948. The first five-year plan for economic development was worked out in 1948 and approved for the period 1949-1953. After an interval of two years, the second, third and fourth five-year plans were elaborated for the periods 1956-1960, 1961-1965 and 1966-1970 respectively. Recent five-year plans have been prepared prospectively and have in view the general economic situation of the country in 1980. Every five-year plan, although given legislative form and approval, is implemented in annual stages and the content of each stage is specifically approved by the Government. This procedure enables adjustments to be made annually in the light of the progress of the plan. The five-year plans deal with industrial production, the activity of the building industry, agricultural output, transport, home and foreign trade, the raising of living standards and the promotion of health-care service. Planning is a function of the government departments and the regional national committees. They are assisted in the work by the State Planning Commission, which has existed since 1946, and is a supra-departmental government agency, presided over by the Deputy Prime Minister. (There is also a Slovak Planning Commission.) It is the function of the State Planning Commission to co-operate with the government departments and the regional national committees, to co-ordinate the plans they have prepared, to adjust the relative proportions of the various sections of the plan and to produce a unified and comprehensive plan.

Planning of the health services follows the same pattern and conforms to the timing of the five-year economic plan. The planning agencies are the Ministry of Health, the Slovak National Council for Health and the regional national committees. There is a Department of Planning within the Ministry of Health, which, in co-operation with the regional national committees and the specialized departments

of the Ministry, including those concerned with research, supply and finance, produces the draft of the five-year health plan. This draft is submitted to the collegium of the Minister of Health and is then transmitted to the State Planning Commission. It is there co-ordinated with the plans submitted by other government departments and becomes an integral part of the plan for the social and economic development of the country, which is given legislative approval by the National Assembly.

A similar procedure operates in respect of the annual phases of both the overall plan for economic development and its constituent sections, such as health, except that the Government is empowered to authorize their implementation. The implementation of the health plan is the duty of the Minister of Health and of the regional national committees, operating through their various administrations and institutions.

One of the important features of health planning in Czechoslovakia has been the establishment of certain standards and objectives. Originally the standards were determined empirically by reference to the known provision of certain well-equipped areas, but in recent years they have been established more scientifically by the Research Institute for the Organization of Health Services. Some of the standards prescribed as objectives to be attained by 1965 in the third five-year plan, together with the actual situation in 1964 and 1965, are given in the following table.

	Standard	Attainment	
		1964	1965
Citizens per health community	3 750	3 825	3 800
Hospital beds per 1000 population . . .	13.7	12.5	12.6
Health services posts for doctors and dentists per 10 000 population	19.1	19.4	19.9

The slowing-down of the hospital bed provision is due to a reduction in tuberculosis bed requirements as a result of improved treatment.

Medical and Public Health Research

Despite the progress which has already been made in Czechoslovakia, increased attention is being given to strengthening the role of science and technology in the economic and cultural life of the nation.

Research activities are generally divided into those which require to be co-ordinated in a national plan and those which are dealt with by individual government departments. Within the Praesidium of the Czechoslovak Academy of Sciences, a special commission has been established to control and co-ordinate national research in the broad fields of the medical sciences and health care. It is composed of scientific representatives from the government departments especially concerned, i.e., health and education, together with members of the Academy of Sciences.

Research activities which are more strictly related to the work of the Ministry of Health are supervised by its Scientific Council. Medical research is carried out in 28 laboratories of the Czechoslovak and Slovak Academies of Sciences, in 33 specialized institutes and laboratories dealing with selected problems in the medical sciences and health care, including studies in the field and in the clinics and research institutes of the nine medical faculties.

At the end 1964, a total of 2634 senior scientists, assisted by 2924 junior scientific workers, were employed in these various institutions.

The expenditure on research is specified in the national plan for economic development and is provided by the State.

The following is a summary of the main lines along which medical and public health research is proceeding:

- (a) the healthy development of the new generation, including problems of human reproduction;
- (b) the influence of living and working conditions on human health, including the study of environmental pollution, industrial hazards, nutritional standards and physical training;
- (c) specific diseases, including communicable diseases and the chronic and degenerative diseases;

- (d) mental health;
- (e) the application of new preventive, diagnostic and therapeutic techniques in medical practice;
- (f) the development of scientific bases for operational research into the provision of health care through health services, standards of provision, qualifications of personnel, etc.

International Collaboration

Among the most important activities in this field are bilateral agreements on health co-operation between Czechoslovakia and other countries, assistance to the developing countries and broad activities within the United Nations and the specialized agencies.

Government Health Expenditure

In 1964, the total general government expenditure was 130 318 million korunas, of which 7784 million (i.e. 6.0 per cent.) were devoted to health services. This is equivalent to an expenditure of 554 korunas per head and represents an increase of almost five per cent. since 1961. Almost 80 per cent. of current and capital expenditure is financed at the level of the national committees.

DENMARK

Population and Other Statistics

At the last census, taken in September 1960, the population of Denmark was 4 585 256. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 610 000	4 646 900	4 683 600	4 720 200
Number of live births	76 439	77 808	82 413	83 356
Birth rate (per 1000 population)	16.6	16.7	17.6	17.7
Number of deaths	43 310	45 334	45 773	46 811
Death rate (per 1000 population)	9.4	9.8	9.8	9.9
Natural increase (per cent.) .	0.72	0.69	0.78	0.78
Number of deaths, 1-4 years	257	247	271	244
Death rate 1-4 years (per 1000 population at risk)	0.9	0.8	0.9	0.8
Number of infant deaths . .	1 667	1 561	1 576	1 560
Infant mortality rate (per 1000 live births)	21.8	20.1	19.1	18.7
Number of maternal deaths .	17	16	21	13
Maternal mortality rate (per 1000 live births)	0.22	0.21	0.25	0.16

Of the 46 811 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart

diseases (12 898), malignant neoplasms (10 487), vascular lesions affecting the central nervous system (5927), all accidents (2449, including 957 in motor-vehicle accidents), pneumonia (1158), suicide and self-inflicted injury (991), bronchitis (701), birth injuries, post-natal asphyxia and atelectasis (557), hypertension (548), senility without mention of psychosis, ill-defined and unknown causes (526), hyperplasia of the prostate (486), congenital malformations (478).

The communicable diseases most frequently notified in 1963 were: influenza (142 562), measles (40 089), gonorrhoea (7752), scarlet fever (5352), whooping-cough (3823), infectious hepatitis (1098), tuberculosis, all forms, new cases (880), congenital and early syphilis (417).

Organization of the Public Health Services

At the national level, almost all the major ministries are concerned with some aspects of the public health services. Actually, none of the ministries may be

regarded as having general responsibility in matters of health, even though the Ministry of the Interior is generally considered as the supreme health authority, being in charge of medical and paramedical personnel, hospitals, drugs, food hygiene, maternal and child health, environmental sanitation, etc. A special department of the Ministry is directly in charge of the operation and management of mental hospitals. The Statens Serum Institut and various other laboratories also come under the Ministry of the Interior. The Ministry of Social Affairs is responsible for the health insurance scheme, occupational health, care of the old, mentally deficient and physically disabled persons and vocational rehabilitation. Other ministries dealing with health questions in their respective fields are the Ministry of Education, the Ministry of Agriculture, the Ministry of Housing and the Ministry of Justice.

At the local level, the elected bodies, primarily the local governments, have a general responsibility to provide and operate sufficient facilities for in-patient care. They are also in charge of a number of other services (e.g., school health, tuberculosis control). Other local bodies such as the health committee and the local building council are responsible for environmental sanitation, food hygiene and housing. The national Government, however, exerts a strong influence even on those matters which are formally left to be dealt with by local bodies. In addition, a considerable portion of the local governments' expenses for health and medical care are defrayed by the national Government.

The health insurance scheme is an important feature of the public health system. Although it is not operated by the State, it is subsidized and controlled by the national Government. Membership of the local health insurance society is compulsory for all residents from 16 years upwards. There are two sections of the service, one for the lower income group and another for the higher income group. The first of these groups is entitled to free medical attention, reimbursement of the cost of certain kinds of medicine, dental care and hospitalization. The second group enjoys less extensive benefits.

With a view to co-ordinating the activities of the various agencies concerned with health matters, the national Government has established a central agency, the National Health Service, which—besides certain executive functions in the administration of health services—has an advisory and supervisory role with respect to the various health functions of government departments as well as those of the local authorities. Its executive functions include the licensing of medical personnel, the control of the production, import and sale of drugs and the regulation of the sale of narcotics. It is also in charge of the collection and publica-

tion of all medical statistics. The staff of the National Health Service consists mainly of members of the medical, pharmaceutical and nursing professions.

Hospital Services

In 1963/64, the number of hospitals and other health institutions providing in-patient accommodation was 173 with 42 852 beds (equivalent to 9.1 beds per 1000 population), of which 37 974 were provided in 136 state-maintained institutions. During the same period, 638 870 patients (other than alcoholic addicts) received 13 803 852 days of patient care. The following table gives the distribution of the hospital beds:

Category and number	Number of beds
General hospitals	132
Tuberculosis hospitals and sanatoria	340
Maternity hospital	1
Paediatric hospitals	2
Psychiatric hospitals and sanatoria for mental patients	17
Hospitals for chronic diseases	470
Orthopaedic hospitals	333
Hospitals for epileptics	2
Hospitals for diabetics	43
Physical therapy centres	240
Institutions for alcohol addicts	118

Apart from emergency departments, Danish general hospitals do not usually operate out-patient departments proper, nor are there any health centres or public dispensaries of a general nature. Out-patient care is primarily in the hands of private general practitioners and specialists.

Medical and Allied Personnel and Training Facilities

At the end of 1963, Denmark had 6185 doctors, equivalent to one doctor for every 760 inhabitants. Other health personnel included:

Dentists	2 681
Pharmacists	1 700
Pharmaceutical assistants	300
Fully qualified midwives	632
Fully qualified nurses	18 500
Nursing aides	4 000
Veterinarians	1 600
Physical therapists	2 250

Plans for the establishment of a third medical school as part of the new university in Odense were being prepared. It was expected that teaching could commence in the autumn of 1966. Plans have also been prepared for the establishment of an agency under the Ministry of the Interior to provide guidance, supervision and co-ordination with respect to the training of paramedical personnel. A three-year

training course for mental nurses has been organized under the auspices of the Ministry of Social Affairs. A special course for hospital administrators has been started at the Scandinavian Intergovernmental School of Public Health in Göteborg, Sweden.

Communicable Disease Control and Immunization Services

Since 1955, poliomyelitis vaccination with killed vaccine has been in regular operation. More than 95 per cent. of children below the age of 14 and a high percentage of the population between 14 and 40 years are immunized. In 1963, a campaign with live poliomyelitis vaccine (Sabin Type I) covered nearly 100 per cent. of the population between five months and 40 years old. Since early spring of 1964, a number of cases of rabies have been diagnosed among wild animals, especially foxes, north of the German border. Active steps have been taken to reduce the number of foxes in these areas. The fight against tuberculosis has resulted in the lowest morbidity ever known in Denmark. Since 1959 there has been only one death from this disease in persons under 29 years of age. The organizational pattern of tuberculosis control is changing, but no final plans for its reorganization have yet been made. The incidence of hepatitis has decreased, owing to stricter requirements concerning hygiene in public kitchens, etc. The incidence rate is 24 per 100 000 population. The incidence of venereal diseases has been gradually increasing, especially among the younger age-groups. Preventive measures against salmonella-type infections include strictly enforced control of production and marketing of eggs and foodstuffs containing raw egg. Sterilization of bone-meat and fishmeal is compulsory.

The following immunization procedures were carried out in 1964:

BCG	106 100
Diphtheria, whooping-cough and tetanus . . .	95 000
Smallpox	87 000
Tetanus	20 000
Whooping-cough	16 000

Chronic and Degenerative Diseases

Several pilot studies for early detection of cancer of the cervix have been carried out but so far no national programme has been considered because of lack of qualified personnel. A special pilot study on lung cancer has been made in the tuberculosis dispensary in Vejle county.

Specialized Units

Regular pre-natal service units or well-baby clinics have been established only in a few places,

since services for pregnant women and for children are generally provided by the general practitioners, practising midwives and visiting public health nurses. All pregnant women are legally entitled to three medical examinations by a doctor and seven examinations by a midwife during and after pregnancy, the expenses being borne by the Government. The Government also reimburses the cost of three examinations by a physician of infants during their first year and of one examination per year of children aged between one and seven. Several local government authorities employ visiting public health nurses. Almost all deliveries are attended by a midwife and usually by a doctor also. Every school must employ a school doctor who is responsible for supervising the health of the children. Most schools also employ a school nurse. Several local government authorities have provided free dental care for all children attending their schools. Plans are being made for the compulsory establishment of school dental clinics.

In 1964 there were eight independent rehabilitation centres, 12 nursing institutions for treatment of rheumatic diseases and for rehabilitation of orthopaedic patients or other surgical patients. There were also 35 certified convalescent homes. Among the general hospitals, eight had physical medicine departments and two were operating rehabilitation departments.

In 1963, 49 psychiatric out-patient clinics based on the mental hospitals were in operation. During the year 1962-1963, 6117 new patients were registered with these clinics.

At the end of 1962, there were 103 local government chest clinics receiving a subsidy from national funds. There were also 40 institutions for the treatment and care of tuberculosis patients.

No establishment is under legal obligation to provide medical and health services to its workers.

Besides the various centralized laboratories operated by the national Government, such as the Statens Serum Institut, the State Vitamin Laboratory, the State Pesticide Laboratory and the State Laboratory for Radiation Hygiene, a large number of laboratories for the control of meat and dairy products are operated by local government.

Major Public Health Problems

The major health problems of Denmark are few, but important. The relative lack of qualified medical personnel is becoming increasingly serious. The facilities for nursing old people are also considered inadequate. The rising mortality rate of cancer and heart diseases also gives cause for concern. The spread of venereal diseases (gonorrhoea) in Greenland is another serious problem.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the period 1955-1964, reforms of the health insurance scheme, the old-age pension system and the public care arrangements for the mentally deficient, the old and the physically disabled have been carried out. The tendency towards centralization of the public hospital service and the abolition of smaller, country hospitals has been strengthened. Several tuberculosis sanatoria have been converted and are used for other purposes. The general hospital service has been marked by increasing specialization. Regulations concerning radiation protection have been introduced, and a special laboratory for radiation hygiene has been established. With the growing urbanization, the problems of environmental hygiene and sanitation have increased.

National Health Planning

Denmark has no comprehensive national health plan. There are, however, a number of programmes either in preparation or in progress. Among them are the following: a programme for providing children with free dental care; extension of the present system of child guidance clinics; extension of the existing facilities for medical care and nursing of the elderly; establishment of maternity wards in all public general hospitals; special control of radioactive drugs; establishment of a government-operated food toxicological laboratory and control institute. Plans are under consideration for a government-sponsored programme for spreading information and propaganda among schoolchildren and young people against cigarette smoking. New regulations concerning protection against pollution of ground water and surface water are being prepared. An agency to study and report on adverse reactions to drugs is being organized. Through the combined efforts of the National Health Service, the Danish Atomic Research Establishment and the Defence Research Board, a programme has been developed for constant surveillance of the fall-out situation.

Medical and Public Health Research

Among the major research projects undertaken during the period under review are the following: a nation-wide research programme on hospital infections, sponsored by the National Association of Hospitals; studies in the field of inborn diseases and congenital malformations sponsored by the Foundation for Inborn Diseases; a systematic research

programme in the field of mental deficiency instigated by the Ministry of Social Affairs. The various associations for the control of specific diseases, such as the cancer society, the societies for tuberculosis control, sclerosis and rheumatism, have sponsored various research projects in their respective fields. A special research programme dealing with the origin of pesticide residues on dairy products has been sponsored by the National Health Service. Since 1961 isotopic examinations of sea currents have demonstrated their value for the solution of problems of sewage discharge into the sea.

International Collaboration

Through the efforts of the Nordic Council various programmes in the field of public health have been executed or planned jointly by the Governments of Denmark, Finland, Iceland, Norway and Sweden. As a result of these efforts medical doctors, dentists, and pharmacists licensed in any of these countries will be entitled to work in any of the other countries without special permission. In 1962 the official pharmacopoeias of the five countries were replaced by a uniform Nordic pharmacopoeia which is being constantly revised by a permanent inter-Scandinavian committee. Two Scandinavian committees are considering uniform regulations concerning control and marketing of drugs and foodstuffs in the Scandinavian countries.

In 1964, the agreement between the Governments of the Republic of Korea, Denmark, Norway and Sweden concerning the establishment of a teaching hospital in the Republic of Korea was revised and now provides for economic and professional assistance in the operation of the hospital until 1968. Denmark participates in various other medical and public health projects in foreign countries, particularly in Africa. Among these projects is the operation of a teaching hospital in the Democratic Republic of the Congo. Denmark has also participated actively in the work of the various European and other international agencies and bodies concerned with certain aspects of public health.

Government Health Expenditure

In the 1964/65 fiscal year total general government current expenditure on health services, including transfers to households and private non-profit organizations, amounted to 2560 million kroner. This is equivalent to an expenditure of 541 kroner per head on these services, as compared with 244 kroner per head in 1960/61.

FEDERAL REPUBLIC OF GERMANY¹

Population and Other Statistics

At the last census, taken in June 1961, the population of the Federal Republic of Germany was 56 174 826. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	56 174 826	56 937 775	57 587 392	58 266 332
Number of live births	1 012 687	1 018 552	1 054 123	1 065 437
Birth rate (per 1000 population)	18.0	17.9	18.3	18.3
Number of deaths	627 561	644 819	673 069	644 128
Death rate (per 1000 population)	11.2	11.3	11.7	11.1
Natural increase (per cent.)	0.68	0.66	0.66	0.72
Number of deaths, 1-5 years	4 762	4 377	4 586	4 145
Death rate, 1-5 years (per 1000 population at risk)	1.35	1.20	1.22	1.06
Number of infant deaths	32 108	29 807	28 473	26 948
Infant mortality rate (per 1000 live births)	31.7	29.3	27.0	25.3
Number of maternal deaths	989	887	873	739
Maternal mortality rate (per 1000 live births)	1.0	0.9	0.8	0.7

Of the 644 128 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (131 778), malignant neoplasms (130 849), vascular lesions affecting the central nervous system (101 311), accidents (35 295, including 16 259 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (34 900), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (23 399), pneumonia (15 505), cirrhosis of the liver (12 107), suicide and self-inflicted injuries (11 707), hypertension (11 581), bronchitis (9 112), diabetes mellitus (8 471), tuberculosis (7 390).

In 1964, the communicable diseases most frequently notified were: tuberculosis, all forms, new cases (55 204), scarlet fever (49 293), infectious hepatitis (17 126), bacillary dysentery (4209), typhoid and paratyphoid fevers (2092), meningococcal infections (1473), diphtheria (637), poliomyelitis (54).

Organization of the Public Health Services

The Federal Ministry of Health was established in 1961. Under its control are the Federal Health Office, the Robert Koch Institute, the Institute for Water, Soil and Air Hygiene and the von Pettenkofer Institute. The Federal Government is competent in nearly all health questions. Apart from the

Ministry of Health, the following ministries also deal with health questions within their respective fields: the Federal Ministry of Labour and Social Affairs, the Federal Ministry for Scientific Research, the Federal Ministry for Food, Agriculture and Forestry. The laws promulgated by the Federal Government are executed by the *Länder*. Each *Land* has a central health authority and organization. These central authorities have legislative and executive powers. At the urban and rural district levels there are public health offices.

Hospital Services

In 1964, the Federal Republic of Germany had 3633 hospitals providing 619 338 beds, equivalent to 10.6 beds per 1000 population. Of these hospitals, 1375, with 341 708 beds, were state-maintained. During 1964, 7 952 746 patients were admitted and received 207 943 851 days of in-patient care. The following table shows the distribution of the 3633 hospitals and their bed capacity:

Category and number	Number of beds
General hospitals	1 830
Tuberculosis hospitals	232
Infectious diseases hospitals	4
Maternity hospitals	32
Paediatric hospitals	85
Psychiatric hospitals	154
Chronic diseases hospitals	60
Ophthalmology clinics	37
Hospitals for orthopaedy	36
Hospitals for general surgery	169
Hospitals for general medicine	140
Hospitals for gynaecology and obstetrics	178
Hospitals for ear, nose and throat	40
Sanatoria	504
Other hospitals	132

Medical and Allied Personnel

In 1964, 90 091 medical practitioners, including 5888 medical assistants, were working in the Federal Republic of Germany. The doctor/population ratio was thus one to 650. Other health personnel included:

Dentists	32 047
Pharmacists	19 011
Pharmaceutical assistants	4 531
Fully qualified midwives	8 503
Fully qualified nurses	123 224
Auxiliary nurses	35 789
Veterinarians	7 938
Laboratory technicians	14 451
Physical therapists	4 894
Masseurs	9 215
Masseurs and bath attendants	2 848
Social workers	8 956

¹ The statistical information includes the area of West Berlin.

Communicable Disease Control and Immunization Services

Continuous attention is given to the prevention and control of communicable diseases, especially because of the danger of importing them through increased international air traffic. In order to limit the incidence of salmonelloses, the Federal Law on the control of epidemics provides for regular bacteriological examinations of persons employed in certain food establishments. Particular attention is given to products made of eggs and foodstuffs of animal origin. Since 1962, hepatitis has been a notifiable communicable disease. It is estimated that there are annually from 100 000 to 150 000 new cases. Gamma-globulin is widely used in prophylactic treatment. The incidence of meningitis has risen in recent years.

The following immunization procedures were carried out in 1964:

Poliomyelitis (Sabin vaccine)	13 088 485
Diphtheria, whooping-cough and tetanus	1 846 105
BCG	415 673
Typhoid and paratyphoid fevers	12 281
Yellow fever	7 886
Cholera	6 277
Epidemic typhus	16

Chronic and Degenerative Diseases

In the group of chronic and degenerative conditions, heart diseases and malignant neoplasms have the highest prevalence. Research into these diseases has been intensified and measures for their prevention and for rehabilitation of patients are being multiplied. A cancer research centre has been set up in Heidelberg. During a campaign for early detection of diabetes organized in 1964, 27 000 previously undiagnosed cases were discovered.

Major Public Health Problems

The main tasks to be undertaken in the field of public health are: measurement of the health of the total population and of distinct population groups by way of special medical sample surveys; determination of the prevalence of certain diseases (among them cancer), of the immunization status of the whole population and of separate population groups, and of the relationship between the movements of human beings by the various modes of communication and the health situation of the population; study of the health aspects of the presence of foreign workers and of the health repercussions of premature retirement from professional activities; development of new forms of medical care and rehabilitation of the mentally ill; rehabilitation of persons with cardiovascular and rheumatic diseases; solution of the problems raised by the heavy patient load in hospitals.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

One of the most important developments which have taken place during the decade under review is the growing migration of the population towards urban centres, with a corresponding decrease in the population density in rural areas. Health service requirements in the urban centres have therefore greatly increased. The number of old people has also increased. The percentage of persons over 65 years was 9.3 in 1953 and 11.3 in 1963, and it is estimated that it will reach 13.9 in 1975. These developments have very important public health implications.

In the field of social legislation a law was promulgated in 1957 reforming the insurance and pension scheme for workers and employees. This provided the responsible insurance authorities with greater possibilities of action in the field of health. The social benefits provided by the Government have risen from DM 5.3 thousand million in 1950 to DM 17.6 thousand million in 1964, which represents an overall increase of 370 per cent.

Thanks to the development of professional rehabilitation services, 50 000 handicapped persons were able to resume professional activities in 1964, as compared with 33 900 in 1959. An increasing number of young people under 25 years of age benefit from these services. There are at present 3000 children with congenital malformations of the limbs in the Federal Republic of Germany, and special treatment centres have been provided for them.

During the period 1955-1964, 5.75 million apartments were built in the Federal Republic of Germany. The quality and the size of the accommodation have been greatly improved.

The economic situation of the country is characterized by growing production accompanied by constant shortage of manpower. This situation has led to the extensive immigration of labour from other countries and in particular from southern Europe. At the end of 1964, the foreign workers constituted five per cent. of all employed workers in the country. The number of women employed is also increasing.

Recent Developments, 1961-1964

The main developments during the period 1961-1964 were in the fields of hospital construction and administration. The number of training centres for medical and paramedical personnel no longer corresponds to the present needs, and plans for the reorganization of medical studies have been considered. Legislative measures have been passed dealing with the registration of pharmaceutical preparations and drugs and the prevention or control of communicable diseases.

National Health Planning

There is no comprehensive national health planning but several new programmes in the fields of maternal care, food hygiene, drinking-water supply, radiology, noise prevention and air hygiene have been introduced and are in operation.

Medical and Public Health Research

Research activities are carried out by the Max Planck Institute, and specialized institutions which have the status of foundations. Co-ordinated research activities have been developed within the German research community as a whole. The field of medical and public health research has been enlarged through the integration of the study of biological and socio-logical problems into medical research. Among the main subjects of medical research with an operational objective are: cancer control, protection against ionizing radiations, and protection against adverse effects of medicaments. Public health research activi-

ties included morbidity surveys, studies of the health condition of women (especially mothers) who have a professional activity, and research into the propagation of specific viruses.

International Collaboration

The Federal Republic of Germany collaborates in the field of health with international agencies, the international cancer research centres and the European Economic Community. A large amount of bilateral assistance is made available to developing countries, particularly in Africa.

Government Health Expenditure

In 1963 the total general government consumption expenditure amounted to DM58 500 million, of which DM4762.5 million (8.1 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of DM82.7 per head on these services as compared with DM59.6 in 1959.

FINLAND

Population and Other Statistics

At the last census, taken at the end of December 1960, the population of Finland was 4 446 222. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 466 600	4 505 200	4 542 700	4 580 000
Number of live births	81 996	81 454	82 251	80 428
Birth rate (per 1000 population)	18.4	18.1	18.1	17.6
Number of deaths	40 616	42 889	42 010	42 512
Death rate (per 1000 population)	9.1	9.5	9.2	9.3
Natural increase (per cent.)	0.93	0.86	0.89	0.83
Number of deaths, 1-4 years	356	326	331	314
Death rate, 1-4 years (per 1000 population at risk)	1.1	1.0	1.0	1.0
Number of infant deaths . .	1 707	1 670	1 496	1 369
Infant mortality rate (per 1000 live births)	20.8	20.5	18.2	17.0
Number of maternal deaths .	45	42	41	34
Maternal mortality rate (per 1000 live births)	0.55	0.52	0.50	0.42

Of the 42 512 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease (12 070), malignant neoplasms (7286), vascular lesions affecting the central nervous system (5890), all accidents (2585, including 1011 in motor-vehicle accidents), hypertension (1049), pneumonia (911), tuberculosis, all forms (675), nephritis and nephrosis

(559), diabetes mellitus (555), birth injuries, post-natal asphyxia and atelectasis (522), senility without mention of psychosis, ill-defined and unknown causes (479).

The communicable diseases most frequently notified in 1964 were: measles (10 934), influenza (8809), gonorrhoea (7306), scarlet fever (3142), whooping-cough (1019), infectious hepatitis (710), syphilis, new cases (273), typhoid and paratyphoid fevers (163).

Organization of the Public Health Services

The National Medical Board acts under the Ministry of the Interior and is responsible for health problems of nation-wide importance. Its main functions are the supervision and control of health services, the operation of centralized health services such as public health laboratories, medico-legal work, training of health personnel, collection of health statistics on a national basis and collaboration in international health work.

Responsibility for taking initiative and practical measures necessary for meeting the health needs of the population lies with local authorities, e.g., the communes. The communes enjoy a very high degree of autonomy. The members of the communal council are elected by universal suffrage and a special health committee, of which the local medical officer of health is *ex officio* a member, is responsible for

local public health administration. Appeals against its decisions can be made to the state authorities. For the realization of certain plans the communes are free to form federations. In some special fields, as for example those of hospital care, mental health and tuberculosis services, such collaboration is even compulsory.

The central administration functions through the administrations of the provinces, but the National Medical Board also has direct contact with the communes and communal federations. There is in each province a small provincial health office directed by the provincial medical officer of health and responsible for the supervision and control of the activities of the communes and the communal medical officers of health. It also represents the State in various contingencies that may arise.

Social Security

Finland has a comprehensive scheme of social benefits financed by state or local taxes, insurance or other arrangements. A maternity benefit is paid from state funds to every expectant mother independent of her financial status. Family allowances, including lodging subsidies for large families and child allowances for each child under the age of 17, together with the national pension system, are some of the more important schemes presently in operation. Comprehensive workers' pensions were introduced in 1963 and the sickness insurance system in 1964.

Hospital Services

The communes are responsible for the care of the sick and they are obliged by law to provide a sufficient number of beds in general and mental hospitals and in sanatoria. At present almost all the hospitals in the country are owned by local communes or federations of communes. The greater part of the expenditure is borne jointly by the respective commune and the State, while the patient is charged with only some 10 to 15 per cent. of the total costs. The local social welfare authorities are responsible for the care of the chronically sick and mentally or physically handicapped persons. In recent years, however, there has been a trend to extend the sphere of activity of the health authorities to include the chronically sick. Every commune is obliged to provide a number of hospital beds in proportion to its population and, according to the law, part of them must be in a central hospital. In addition to these hospitals the communes may also have beds in intermediate and local hospitals.

In 1964, the total number of hospitals and other health institutions providing in-patient accommodation was 755, with 59 951 beds (equivalent to a bed/

population ratio of 13.0 per 1000). These establishments admitted 602 858 patients, who received 16 920 832 days of medical care. Of the total number of beds, 50 937 were provided in 618 state-maintained institutions. In addition to these hospitals there were 51 military hospitals with 471 beds. The 59 951 beds were distributed as follows:

Category and number	Number of beds
General hospitals	59 14 556
Rural hospitals	175 4 555
Tuberculosis hospitals	22 5 748
Infectious diseases hospitals	15 400
Maternity hospitals	4 142
Paediatric hospitals	2 280
Psychiatric hospitals (for acute and chronic cases)	62 18 632
Gynaecological clinic	1 29
Radiotherapeutic clinics	5 277
Hospital for general surgery	1 95
Orthopaedic hospitals	2 385
Plastic surgery hospital	1 30
Allergy clinic	1 75
Rheumatic diseases hospitals	2 367
Neurological hospitals	2 302
Prison hospitals	6 230
Hospital for alcoholics	1 70
Old people's homes (sick wards)	321 1 813
Others	73 11 965

Out-patient services were provided in 1963 at 175 hospital out-patient departments and 12 medical aid posts and by one mobile health unit. They recorded altogether 1 865 679 attendances.

Medical and Allied Personnel and Training Facilities

In 1964 Finland had 3384 doctors, of whom 3146 were employed either whole or part-time in government service or in the service of local authorities. The doctor/population ratio was one to 1350. Other health personnel included:

Dentists	2 092
Pharmacists	3 704
Fully qualified midwives	1 654
Fully qualified nurses	12 369
Fully qualified nurses with midwifery qualifications	559
Practical nurses	4 102
Psychiatric attendants	4 165
Children's nurses	2 589
Veterinarians	476
Sanitary engineers *	225
Sanitary inspectors	500
Physical therapists	301
Laboratory technicians	475
X-ray technicians	285
Dental technicians	401

* About 50 of the sanitary engineers had followed a month's postgraduate course at the Göteborg School of Public Health and over 20 had become fully qualified in post-graduate courses abroad. All were science graduates.

There are three medical faculties in Finland, at the universities of Helsinki, Turku and Oulu. Licence to practise is granted to graduate physicians by the

National Medical Board. Dental training is organized at the universities of Helsinki and Turku. There are 25 nursing schools in Finland, of which 19 are state-owned, the remainder being municipal or private institutions. Nursing education is controlled by the National Medical Board. Midwives are trained in Helsinki at the State School of Midwifery.

Communicable Disease Control and Immunization Services

Infectious diseases of childhood are still common but mortality from them has decreased considerably. Since 1956 only a few cases of diphtheria have been reported. Poliomyelitis also has lost its former significance. These improvements are mainly due to the vaccination campaigns. The mortality from tuberculosis has rapidly decreased; nevertheless the number of new cases still remains high. Venereal diseases, especially syphilis, are increasing slightly. Nevertheless, the number of cases still remains so low that the situation cannot be regarded as alarming. As serological tests are taken from almost every pregnant mother no congenital syphilis occurs.

The following immunization procedures were carried out in 1964:

Poliomyelitis	210 272
Tetanus (simple and combined)	120 605
Diphtheria (simple and combined)	106 170
Whooping-cough (simple and combined)	101 418
Smallpox	90 392
BCG	84 062
Typhoid and paratyphoid fevers	12 100

Chronic and Degenerative Diseases and Accidents

The cardiovascular diseases and the unexpectedly high prevalence of certain forms of cancer have attracted particular attention. Owing to rapid industrialization and the increase in traffic, both the absolute and the relative role of accidents are becoming increasingly serious. The accident situation is creating new problems, particularly those of rehabilitation and after-care.

Specialized Units

Local authorities are responsible for maternal and child health services, but the State participates in the cost. In 1964, there were 2743 pre-natal centres and 96.6 per cent. of mothers availed themselves of their services. In the same year, 98.2 per cent. of all deliveries were institutional and were attended by a doctor or qualified midwife. There were also 3943 child health centres where services are available free of charge. In 1964 they were attended by 76 048 infants under one year of age and 473 294 children

aged between one and six years. The provision of preventive school health services is a statutory obligation of the communes. The local medical officer of health usually functions as a school health officer in his district. The examinations are free of charge and the cost is borne by the communes and the State. During the school year 1963/64, 314 932 schoolchildren were examined.

In 1963 Finland had 56 independent medical rehabilitation centres and seven hospital rehabilitation departments. In 1964, 34 regional out-patient psychiatric clinics recorded 73 915 patients. The extension of out-patient psychiatric services and domiciliary care, and in particular the rehabilitation of mental patients, are still problems to be solved. In addition, there is a shortage of beds for child psychiatric patients and the problem of subnormal patients is particularly difficult.

In 1964, there were six public health laboratories which carried out 855 858 examinations. The State Serum Institute of Helsinki has complete serological, bacteriological, virological and anaerobic departments, as well as blood-grouping, hormone and chemical units. The work of the other state public health laboratories is limited principally to serological and bacteriological investigations. The vaccines used in the country are produced by the State Serum Institute, with the exception of the poliomyelitis vaccine. In addition a network of private laboratories covers the whole country.

Environmental Sanitation

About 60 per cent. of the whole population of Finland is supplied with piped water and sewage disposal systems. Most of the waterworks operate complete chemical purification plants. In rural areas where waterworks are sparse, good drinking and household water can be obtained from natural springs or shallow wells. Water pollution due to the paper and pulp industry with its vast quantities of waste constitutes a serious problem. Purification of public sewage is also a problem, as septic tanks are practically the only means of purification. There are complete biological purification plants only in the biggest towns; but they are often of insufficient capacity.

National Health Planning

The plans for the development of the public health services in Finland were completed in 1965. Their aim is to extend the existing services and increase the number of health personnel. For the extension of medical care and rehabilitation, the establishment of medical practice centres will be encouraged and

facilities for domiciliary care promoted. School health and dental health services will be extended. A special programme for the balanced development of public health services in the communes is being established. The State will participate in the expenses with a *per capita* sum in accordance with a specific scale related to the financial standing of the commune.

Medical and Public Health Research

In Finland the universities are traditionally responsible for medical research, which is mainly financed by the State. A system of state grants for research fellowships and other purposes has been introduced. In addition there are several private foundations supporting research activities in medicine and public health. Finland, however, experiences a great shortage of specialized research workers. Since the introduction of sickness insurance in Finland a survey of the sickness behaviour of the population and the influence on it of the insurance system has been carried out. Surveys on the utilization of hospitals and other studies intended mainly as reference

material for purposes of health planning have been made, often in collaboration with local health authorities. The Institute of Occupational Health, the State Serum Institute and the Institute of Radiation Physics have been very active in research.

Government Health Expenditure

In 1963, the total general government consumption expenditure amounted to 2909 million new markkas, of which 488.9 million new markkas (i.e., 16.8 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 108 new markkas per head on these services as compared with 86 in 1962. A further sum of 91.4 million new markkas representing 9.9 per cent. of the total general government expenditure on capital account was spent for the improvement and expansion of health facilities. About 47 per cent. of current and 20 Per cent. of capital expenditure was incurred at the local level, the remainder, with the exception of 3.3 million new markkas on current account, being financed by the National Medical Board.

FRANCE

Population and Other Statistics

At the last census, taken in March 1962, the population of France was 46 520 271. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	46 163 000	46 998 000	47 854 000	48 411 000
Number of live births	838 633	832 353	868 876	877 804
Birth rate (per 1000 population)	18.2	17.7	18.2	18.1
Number of deaths	500 289	541 147	557 852	520 033
Death rate (per 1000 population)	10.8	11.5	11.7	10.7
Natural Increase (per cent.)	0.74	0.62	0.65	0.74
Number of deaths, 1-4 years	3 675	3 794	3 574	3 297
Death rate, 1-4 years (per 1000 population at risk)	1.15	1.17	1.09	0.99
Number of infant deaths	21 493	21 430	22 106	20 475
Infant mortality rate (per 1000 live births)	25.6	25.7	25.4	23.3
Number of maternal deaths	379	356	332	285
Maternal mortality rate (per 1000 live births)	0.45	0.43	0.38	0.32

Of the 520 033 deaths recorded in 1964, the main causes were: malignant neoplasms (98 633), arteriosclerotic and degenerative heart diseases and other diseases of the heart (93 956), senility without mention of psychosis, ill-defined and unknown causes (71 400),

vascular lesions affecting the central nervous system (62 424), accidents (32 395, including 11 184 in motor-vehicle accidents) cirrhosis of the liver (15 370), pneumonia (10 815), diabetes mellitus (7630), tuberculosis, all forms (7552), hypertension (4662).

The communicable diseases most frequently notified in 1964 were: measles (13 116), gonorrhoea (12 910), scarlet fever (8065), syphilis, new cases (5336) whooping-cough (2584), typhoid and paratyphoid fevers (2246), meningococcal infections (1029), poliomyelitis (533), diphtheria (317).

Organization of the Public Health Services

The Ministry of Public Health and Population,¹ which was established in 1947, was the supreme authority in health matters during the period under review. Other administrations concerned with health questions were: the Ministry of Labour and Social Security, the Ministry of Agriculture, the Ministry of Ex-Servicemen and War Victims and the Ministry of National Education. At the central level, the Ministry of Public Health and Population comprised five

¹ See footnote 1 on following page.

departments: general administration, personnel and budget; public health administration; population and welfare; the central pharmacy service; health and welfare facilities. Some services (international relations, press, legal office, technical assistance) were attached to the Cabinet of the Minister. The Directorate-General of Health was directly in charge of the public health administration. It included the following main divisions: studies and programmes (under the direct control of the Director-General), the practice of medicine and of the allied professions, public health, community health, hospitals and other medical institutions. The Ministry of Public Health and Population also had a number of advisory councils and commissions on technical matters (the Higher Public Health Council, the Higher Council for Hospitals, etc.). It was also in a supervisory relationship with a number of very largely autonomous bodies, such as the National Institute for Health and Medical Research, the National Demographic Institute, the National Public Health School and the National Public Health Laboratory.

The health administration at the level of the departments and regions was reorganized in 1964 with a view to regrouping the various health and welfare services and to achieving greater unity and efficiency. In particular, the services responsible for school health, including the health of teaching personnel, formerly under the control of the Ministry of National Education, were attached to services under the Ministry of Public Health and Population.

Since this reorganization, each department has had a directorate of health and social welfare, run by an official (who may or may not be a doctor) attached to the Ministry of Public Health and Population.¹ This service is responsible, under the authority of the prefect, for preventive health and social welfare activities, and in particular for maternal and child health, the implementation of plans for health and social welfare installations, and the administrative supervision of the establishments concerned. Each department also has a public health doctor who is responsible, under the direct authority of the prefect, for inspection and technical supervision.

At the headquarters of each of the twenty-one regional areas (each area covers several departments), there is a regional health and social welfare service, designed to co-ordinate activities which lie outside the competence of the departments—for example, the preparation of plans for installations, the training of health and social welfare personnel, and the organization of hospital examinations. There is also a regional medical inspection officer, whose particular

responsibility is for the co-ordination of inspection and supervision of health matters.

Hospital Services

In 1963, in-patient accommodation was provided in the following hospitals and in-patient establishments:

Category and number	Number of beds
Public general hospitals	892
Private clinics	2 217
Cancer centres	18
Public and private psychiatric institutions	222
Tuberculosis sanatoria	269
Tuberculosis preventoria	290
Hotels for treatment in health resorts	51
	13 000

The grand total of 499 620 beds was equivalent to 10.4 beds per 1000 population. In addition to these hospital facilities, there were 2288 establishments for the care of the aged (charitable institutions and private old people's homes) with 270 800 beds.

Out-patient facilities were available in 1964 in the out-patient departments of almost all hospitals, and also in a small number of polyclinics, about 700 health centres and the consulting rooms of 38 289 private doctors.

Medical and Allied Personnel and Training Facilities

In 1963, France had 55 000 doctors, equivalent to one doctor to 870 inhabitants. Other health personnel included:

Dentists	16 838
Pharmacists	19 780
Fully qualified midwives	9 863
Fully qualified nurses	90 000
Veterinarians	4 500
Physical therapists	10 600

Medical education was reorganized by law in 1960 and again in 1963 and 1964. Medical studies last six years, including a preparatory year. Other important legislation enacted during the period under review concerned the practice of speech therapy and orthoptics and the allocation of compensations to persons leaving an occupation to prepare for the State Nursing Diploma.

Communicable Disease Control and Immunization Services

The period under review has been characterized by a steady improvement in the epidemiological situation of the country. Neither smallpox nor any other quarantinable disease has occurred in France since

¹ On 8 January 1966 this ministry was merged with the Ministry of Labour and Social Security, and is now the Ministry of Social Affairs.

1961. The incidence of diphtheria has progressively declined. The morbidity rate per 100 000 inhabitants fell from 1.6 in 1961 to 0.6 in 1964, and the number of deaths from 22 to five. Vaccination against diphtheria and tetanus is compulsory. In 1964, 64.4 per cent. of the persons concerned received a combined immunization, as against 55.5 per cent. in 1961. The number of reported cases of poliomyelitis dropped from 1513 in 1961 (3.3 per 100 000 inhabitants) to 533 in 1964 (1.1 per 100 000). The mortality rate, however, has not shown the same reduction. Poliomyelitis vaccination was made compulsory by law in July 1964. The incidence of measles also declined from 16 449 reported cases in 1961 to 13 113 in 1964. Tetanus remains a relatively serious problem in France. Although tetanus immunization combined with diphtheria is compulsory, tetanus still shows a high morbidity and mortality whereas diphtheria has been almost completely eradicated. The tetanus incidence is particularly high in rural areas and among men over 50 years. Cerebrospinal meningitis occurred in epidemic form in 1963 with 1523 cases, as against 582 in 1962. Typhoid and paratyphoid fevers, which had shown a marked reduction from 2102 cases in 1961 to 1590 in 1962, again reached a peak with 2246 cases in 1964. Some cases of leprosy imported from countries where the disease is endemic have been notified during recent years.

Although the decrease in tuberculosis mortality has been constant since the Second World War, the mortality remains high. The morbidity is not accurately known, as only tuberculosis dispensaries and social security establishments provide statistical data. The health authorities have reorganized and intensified the campaign against the disease. In 1964, tuberculosis notification became compulsory by law. It is planned to make the tuberculosis dispensary the focal point of activity against this disease. The improvement in systematic case-finding and its extension to those population sectors which have not yet been included (i.e., rural populations, housewives, elderly persons) will also ensure a more effective control. Since 1965, BCG vaccination has been extended to some groups of workers particularly at risk.

Venereal diseases have shown a constant increase since 1959. The number of primary and secondary syphilis cases increased from 1461 in 1958 to 5336 in 1964. Gonorrhoea, on the other hand, marked a slight decrease from 14 611 cases in 1958 to 12 910 in 1964. The growing incidence of venereal disease is mainly attributed to certain sociological factors. Control measures are concentrated on development of specialized services and public information.

The following immunization procedures were carried out in 1963:

Poliomyelitis (Salk vaccine)	4 730 000
Smallpox	1 205 738
BCG	727 407
Diphtheria and tetanus	255 387
Diphtheria, tetanus and poliomyelitis	150 513
Diphtheria (combined with other immunizations)	58 889
Typhoid and paratyphoid fevers, diphtheria and tetanus	48 722
Diphtheria, whooping-cough and tetanus	5 983

Chronic and Degenerative Diseases

The number of people suffering from diabetes is estimated at 800 000. It would appear that the incidence of this disease is increasing. Control measures mainly consist in health education of the public, campaigns against obesity and the provision of specialized services.

The epidemiology of rheumatic diseases and their incidence have become a serious health concern. It is, however, difficult to collect reliable morbidity statistics. Sample surveys have been carried out in hospitals, by occupational health services and by health and invalidity insurance establishments. It is estimated that the incidence of rheumatic diseases varies between two and four per cent., with important variations due to geographical and climatic factors, and to sex and age distribution. The health authorities have taken active steps to control these diseases by developing specialized consultative facilities for early detection, treatment centres and opportunities for physical and professional rehabilitation.

The growing incidence of cardiovascular diseases and the high mortality due to these diseases are major public health problems. Cardiovascular diseases cause about 35 per cent. of all deaths. It is known that the mortality due to arteriosclerotic and degenerative heart diseases is higher among men than women and it has also been observed that these diseases are occurring more frequently in the population aged between 35 and 45 years. The control and prevention of these diseases have become important problems for the health authorities. The development of new techniques for treating these diseases, the establishment of resuscitation centres in hospitals and the extension of systematic health examinations resulting in early detection are amongst the main features of the programme. Research activities are carried out by the National Institute for Health and Medical Research with a view to determining the factors favouring the development of these diseases. A number of children's homes are specialized in the rehabilitation of cardiac children. Much attention has also been given to the professional rehabilitation of cardiac patients.

Cancer remains a serious threat to the public health in France. The number of deaths from cancer increased from 91 123 in 1961 to 98 633 in 1964. The

activities of the regional cancer centres constitute the basis of all control activities. There are at present 18 such centres, with 2885 beds. Two additional centres are being constructed. Consultation clinics for early cancer detection have been organized in collaboration with these regional centres. There were 85 such consultation clinics in 1964, at which more than 12 500 patients were recorded. The State pays 80 per cent. of the operational cost of these clinics. Great efforts have also been made in the field of cancer research.

Alcoholism remains a very serious health concern in France. Deaths from alcoholism and cirrhosis of the liver were 21 386 in 1963, as compared with 9205 in 1950. The government has taken very extensive measures to limit alcoholism and to provide treatment facilities.

The new conception of mental health care is based on the treatment of the patient in the community as well as in the hospital. In each territorial sector of about 70 000 inhabitants a socio-medical team is in charge of the prevention of mental disorders, case-finding and the treatment of mental cases. A network of mental hospitals, out-patient clinics and rehabilitation centres is at their disposal.

Specialized Units

In 1964, 877 pre-natal and 9934 child health centres were engaged in maternal and child care. They were attended by 129 831 pregnant women, 579 250 children under three years and 192 190 children aged between three and five years. Domiciliary visits were paid to 404 971 pregnant women, 2 145 412 children under three years and 334 712 children aged between three and five years.

In 1963, 851 148 deliveries (98.3 per cent. of all deliveries) were conducted by a doctor or qualified midwife. In the same year 1207 school health centres looked after 13 395 000 schoolchildren. There were approximately 500 dental health dispensaries, 76 independent medical rehabilitation centres and 59 hospital rehabilitation departments. There were 779 psychiatric out-patient services which gave 467 593 consultations to 94 175 new patients.

In 1964 there were 168 public health laboratories.

Environmental Sanitation

In 1962, there were 16 343 620 dwellings for a population of 46 998 000. Of this total number of dwellings 12 369 160 (75.7 per cent.) were served with piped water, 7 320 520 (44.8 per cent.) were connected to sewage disposal systems, 5 959 940 (36.5 per cent.) had soak-pits and 5 789 460 (35.4 per cent.) had septic tanks.

Major Public Health Problems

In the last decade the traditional causes of public health problems such as the communicable and social diseases have diminished in severity or have otherwise changed. Other problems related to modern life have arisen: air pollution, noise and the hazards of ionizing radiation. In the field of curative medicine, the increase in the use of the medical services and the consumption of drugs causes serious concern to the health authorities because of the rising cost involved.

The main public health problem to be dealt with is that of extending, renovating and modernizing the hospital network, especially the general and psychiatric hospitals and the homes for elderly persons and for handicapped children. Among the general hospitals particular attention is to be given to the university hospital centres. The growing number of deaths from accidents, particularly traffic accidents, calls for the development of specialized services. The medical and social problems of the aged also require urgent attention. The number of the aged in the population is increasing steadily and will continue to do so for some years to come. Mental diseases and alcoholism are also important public health problems. Among the communicable diseases which still cause concern to the health authorities are tuberculosis and venereal diseases. Although the infant mortality rate has continued to fall, it is still high when compared with the rates of certain other European countries. Special efforts are accordingly being made in maternal and infant care. Steps have also to be taken to make good the serious shortage of nursing and paramedical personnel.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the ten-year period 1955-1964 the population of France increased from less than 43 million to over 48 million. The increasing birth rates and declining death rates have resulted in a change of the population structure, with a growing number of both young and old persons. However, the actively employed population, i.e., the intermediate age-groups, remained constant between 1954 and 1962, partly because of an important immigration of manpower.

The study of the demographic factors also reveals important changes in the economic structure of France. The active population engaged in agriculture decreased by 25 per cent. between 1954 and 1962, whereas the groups employed in administration, transport, commerce and other services increased by more than 12 per cent. Significant also is the evolution in

the industrial sectors. The number of wage-earners has increased by 23 per cent. in the public works and building sector and has fallen by 22 per cent. in the coal-mining sector.

The annual rate of increased production is between 5 and 6 per cent. The gross national product rose from 5247 thousand million old francs in 1954 to 7332 thousand million in 1964, at constant prices, which represents a 39.7 per cent. advance. Economic development has resulted in a steady rise in the level of living. Urbanization continues at an accelerated pace. French participation in the Common Market, which started in 1958, was followed by rises in exports and exchange of goods.

In the field of health, the period has been marked by the reorganization in 1964 of the Ministry of Health. Important changes have also been made in social security legislation.

National Health Planning

In France the national health plan is an integral part of the general plan for economic and social development. The series of general plans dates from 1946, but it was only in 1954 that the first health plan was prepared and became part of the third general plan. The present position is that, as from 1 January 1966, the fourth national health plan, integrated with the fifth general plan, will operate for five years, i.e., from 1966 to 1970.

The objectives of the four general plans for economic and social development that have been in operation since the end of the Second World War have varied. The first plan (1946-1953) was devoted to the reorganization of the six major industrial activities of the country; the second (1954-1957) extended the plan to include agriculture, housing and the overseas departments and territories. An additional purpose was to effect improvements in quality as well as to provide more. The third plan (1958-1961) was concerned with the stabilization of the monetary situation, and this was also the aim of the fourth plan (1962-1965).

With regard to the national health plan, its broad objectives since 1954 have been to ascertain the present position and future needs of the health service institutions in the country so as to facilitate their use in the diagnosis and treatment of disease. Special attention is being paid to combating the social diseases, to providing services for expectant mothers, to safeguarding family life, and to ensuring that the necessary medical care is available for the aged and infirm. The other main objective of the plan is to organize the technical, financial and administrative services so that they may be able to co-operate in

the provision of the health services required and in obtaining the greatest possible efficiency in their working.

In order to do this it is necessary to establish priorities and, within them, to undertake the construction of new institutions and to extend, where necessary, those already existing. The fifth general plan for economic and social development (1966-1970) is directed, *inter alia*, at obtaining an annual increase in production of five per cent. in order to maintain stability and full employment, at encouraging competition, increasing housing construction and obtaining better economic conditions for the agricultural sector.

The objectives of the fourth national health plan are to continue implementing the scheme for the development of university hospital centres, which is the more important because of the planned reorganization of the medical curriculum. It is intended to give these centres a pre-eminent place in the specialized diagnosis and treatment of disease. It is proposed also in this connexion to provide 27 000 additional hospital beds, and to modernize 11 000. In other hospitals the totals for provision and modernization are respectively 20 000 and 21 000 beds.

Another important priority is that of the psychiatric hospitals, which are overcrowded. The accommodation in these institutions will be increased by the provision of 18 000 more beds. Increased provision is also being made for care of cancer and tuberculosis patients, and for maternal and child care. Altogether an additional 10 000 health service personnel will be provided.

These are only some of the objectives, which cover many additional aspects of medical and health care. The plan is a great collective undertaking which is intended to benefit the whole community. It is subject to annual assessment of its progress and achievements.

Medical and Public Health Research

During the period 1955-1964 France was at considerable pains to extend, reorganize and co-ordinate its various research arrangements. The support of research is primarily a government responsibility and is carried out in the main through the Ministry of National Education and the Ministry of Public Health and Population,¹ though other government departments and organizations (e.g., atomic energy, armed forces) have also research interests.

In so far as medical research is concerned, the Ministry of National Education supports basic rather

¹ See page 227, footnote 1.

than applied research. This it does through the faculties of medicine, faculties of pharmacy and medical schools. In addition it supports research work in such important institutions as the National Centre for Scientific Research, the *Collège de France*, and the School for Advanced Studies.

Applied research in the medical field is more particularly the responsibility of the Ministry of Public Health and Population.¹ It is carried out in the National Institute for Health and Medical Research, the hospitals, and certain other institutions such as the cancer centres, and the national and regional centres of blood transfusion. The National Institute has amongst its many functions that of advising the Government on the health situation of the country, and of suggesting any control measures that may be necessary. The Institute carries out its research functions mainly through its 54 research units or groups, the majority of which are in Paris. There is also a considerable amount of research carried out or supported by private institutions and by the pharmaceutical industry. Amongst the institutions are the world-famous Institut Pasteur and the *Association Claude Bernard*.

Overall co-ordination of research in France is carried out by an inter-ministerial committee of scientific and technical research, of which the Prime Minister is Chairman. The Ministers of Education and of Public Health are members. This body is assisted by a consultative committee on scientific research composed of 12 distinguished scientists; it always includes representatives of the medical and biological sciences. The consultative committee in its turn has a permanent executive committee with delegated powers.

In the hospital field, considerable attention has been given to the association of the university medical faculties with the local hospitals. As a result the university hospital centres are now being constituted. Full research facilities are available at these centres and an opportunity is now provided for suitably qualified persons to have full-time research careers in the medical field.

Financial support for research comes from the Government, foundations and industry. Altogether, apart from industry, 247 million francs were spent

in 1963, of which only 13 million were provided from non-governmental sources.

International Collaboration

During the period 1961-1964 France has actively participated in the development of international health collaboration on bilateral, multilateral and international bases. Following an increasing number of bilateral agreements, technical assistance has been provided in the form of expert advice, financial aid and fellowships. For administrative purposes, various services and ministries are dealing with bilateral assistance: the Ministry of Public Health and Population¹ for the countries of former French Africa, the Prime Minister's Secretariat of State in charge of Algerian Affairs for Algeria, and the Ministry of Foreign Affairs for Morocco, Tunisia, Cambodia, Laos and Viet-Nam. Bilateral collaboration is not confined to the developing countries only. Agreements for bilateral exchanges exist with Canada, and with the USSR and other eastern European countries.

It is estimated that about 1300 French doctors work under a technical assistance scheme, 500 of them in Algeria and 600 in Africa south of the Sahara. The number of training and exchange fellowships in medical and health subjects provided in French universities has gradually increased from 197 in 1961 to 361 in 1964.

France collaborates with the European countries within the following organizations: the European Coal and Steel Community, the European Atomic Energy Community (Euratom), the European Economic Community, the Council of Europe and the Organization for Economic Co-operation and Development.

At the international level, France is an active member of FAO, UNICEF, WHO and other specialized agencies of the United Nations system.

Government Health Expenditure

In 1964 the total general government expenditure amounted to 160 thousand million francs, of which 1.7 thousand million francs were devoted to the provision of health services. This was equivalent to an expenditure of 35 francs per head on these services. These figures do not include health expenditure financed from social security funds.

¹ See page 227, footnote 1.

GIBRALTAR

Population and Other Statistics

The population of Gibraltar was 24 485 in 1964. In the same year, 629 live births (25.7 per 1000 population), 222 deaths (9.1 per 1000 population), 20 infant deaths (31.8 per 1000 live births), and three deaths of children aged between one and four years were registered. The natural population increase was 1.66 per cent.

In 1964, the main causes of deaths were: arteriosclerotic and degenerative heart diseases (43), malignant neoplasms (41), vascular lesions affecting the central nervous system (34), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (17), hypertension (13), pneumonia (8), diabetes mellitus (7), cirrhosis of the liver (6), nephritis and nephrosis (6).

The communicable diseases most frequently notified in 1964 were: measles (517), whooping-cough (35), scarlet fever (28), tuberculosis, all forms, new cases (15), dysentery, all forms (3), infectious hepatitis (3).

Hospital Services

In 1964, Gibraltar had four hospitals with a total bed capacity of 237 beds (equivalent to 9.7 beds per 1000 population), distributed as follows: 182 beds in two general government hospitals, ten in one government infectious diseases hospital and 45 in one government psychiatric hospital. In the same year, 3675 patients were admitted to these establishments.

The hospital out-patient department was attended by 8839 new patients, and the total number of attendances recorded was 35 355.

Medical and Allied Personnel

In 1964, 22 doctors were working in government service and two were engaged in exclusively private practice. The doctor/population ratio was one to 1020. Other health personnel included:

Dentists	4
Pharmacist	1
Pharmaceutical assistants	13
Fully qualified midwives	2
Fully qualified nurses	27
Fully qualified nurses with midwifery qualifications .	20
Assistant nurses	25
Auxiliary nurses	135
Sanitary engineers	2

Sanitary inspectors	13
Physical therapists	2
Laboratory technicians	7
X-ray technicians	3

Immunization Services

The following immunization procedures were carried out in 1964:

Smallpox	905
Poliomyelitis	442
Diphtheria, whooping-cough and tetanus	395
Cholera	365
Typhoid and paratyphoid fevers	136
Diphtheria, whooping-cough, tetanus and polio-myelitis	13
Tetanus	4

Specialized Units

In 1964, 3111 attendances were recorded for pregnant women receiving pre-natal services, and 355 infants under one year and 694 children aged between one and five years attended the child health centre. In all, 811 home visits were made to infants under one year and 3137 to children over one year of age. All deliveries were attended by a doctor or qualified midwife. There were 4104 schoolchildren (85 per cent. of the total school population) under medical supervision. The dental health unit was attended by 1502 patients. There were two psychiatric out-patient clinics. The public health laboratory carried out 53 432 examinations.

Environmental Sanitation

Nearly all the inhabitants of Gibraltar have piped water supply in their dwellings, only 1300 having to depend on public fountains. The whole population is served by a system of sewers.

Government Health Expenditure

In 1964 the total government expenditure on health services amounted to £311 114, equivalent to an expenditure of £12.7 per head. The sources of finance were as follows: 86 per cent. of the total health expenditure was financed directly by the medical department, three per cent. by other central government departments and 11 per cent. by local authorities.

GREECE

Population and Other Statistics

At the last census, taken in March 1961, the population of Greece was 8 388 553. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	8 398 000	8 448 000	8 480 000	8 510 000
Number of live births	150 716	152 158	148 249	153 109
Birth rate (per 1000 population)	17.9	18.0	17.5	18.0
Number of deaths	63 955	66 554	66 813	69 429
Death rate (per 1000 population)	7.6	7.9	7.9	8.2
Natural increase (per cent.) .	1.03	1.01	0.96	0.98
Number of deaths, 1-4 years	1 035	1 111	913	874
Death rate, 1-4 years (per 1000 population at risk)	1.7	1.9	1.5	1.4
Number of infant deaths . .	6 006	6 144	5 825	5 488
Infant mortality rate (per 1000 live births)	39.8	40.4	39.3	35.8
Number of maternal deaths .	120	87	81	85
Maternal mortality rate (per 1000 live births)	0.8	0.6	0.5	0.6

Of the 69 429 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (11 614), malignant neoplasms (9727), vascular lesions affecting the central nervous system (8113), arteriosclerotic and degenerative heart diseases (7139), accidents (3162, including 911 in motor-vehicle accidents), pneumonia (2790), influenza (1862), cirrhosis of the liver (1352), nephritis and nephrosis (1193), tuberculosis, all forms (1177), diabetes mellitus (1127), bronchitis (1067), hypertension (1025).

The communicable diseases most frequently notified in 1964 were: influenza (220 572), measles (13 763), whooping-cough (7233), infectious hepatitis (1570), typhoid and paratyphoid fevers (1395), diphtheria (838), scarlet fever (717), bacillary dysentery (502), poliomyelitis (179), amoebic dysentery (163), meningococcal infections (165), malaria, new cases (78), leprosy (36).

Organization of the Public Health Services

The Directorate-General of Health Services, which had been under the Ministry of Welfare since 1951, was incorporated in the Ministry of Health when it was established in 1964. The Ministry of Health comprises the Minister's Office, the Office of the Secretary-General, the Directorate-General of Health, the Office of Special Advisers and the General Services, which include financial, administrative and main-

tenance divisions. The Director-General of Health is responsible for all preventive and curative health services. He is assisted by the Supreme Health Council, which is composed of 37 permanent members and by a number of other councils and committees. The Directorate-General of Health comprises the following divisions: public health, malaria, sanitary engineering, social hygiene, maternal and child health, medical care, medical and paramedical professions, rural health insurance, drugs and pharmacies, hospital and medical care for civil servants and public pensioners, health education, international relations and studies, supervision and inspection, and blood donation.

Apart from the Ministry of Health, various other ministries and institutions are responsible for health matters in their specific fields. The National Institution for Social Welfare and Relief (PIKPA), which is an officially recognized institution supervised by the Ministry of Welfare, operates a number of health services for mothers and children. It also disposes of a considerable number of beds in nursing establishments. The National Social Insurance Institute (IKA) is the most important social organization in Greece. Its administration is the responsibility of the Ministry of Labour, and it covers workers and civil servants for sickness, old age, unemployment and disablement benefits. Various other organizations and social insurance funds have their own health services giving medical, pharmaceutical and nursing care to their members. The Greek Red Cross also runs hospitals, dispensaries and first-aid posts.

At the regional level there are 56 health centres, one in each *nomos* (prefecture) with the exception of Attica *nomos* and Dodecanese *nomos* where there are four and two centres respectively. The duties of the health centres are to carry out plans and programmes prepared and approved by the central organization of the Ministry. In every health centre there is a district health committee which is headed by the *Nomarch* (prefect) and which is responsible for all health questions in the *nomos*. The health centres control the following establishments: polyclinics, venereal diseases dispensaries, trachoma control dispensaries, disinfecting establishments outside Athens, malaria experimental stations, seaport and airport health stations (except those of Piraeus port and Hellinico airport) and antirabies stations. The health centres also supervise directly the communal and rural dispensaries, most of which are scattered throughout the mountainous areas of the country and give free medical care to the local population.

Social Security

One of the most important trends during the period under review has been the development of social insurance systems. The majority of the country's population is now covered by social insurance, less than 15 per cent. remaining uninsured. A particular effort has been made on behalf of the rural community which constitutes about 44 per cent. of the country's total population. The law of 1961 on rural social insurance in Greece made social insurance of the rural population compulsory. Also, out-patient medical care is provided free of charge to the rural population. The agrarian and communal dispensaries and health stations come under the Ministry of Health but the cost of their operation is covered by the rural social insurance scheme (OGA). Otherwise free in-patient medical care is given only to indigents. OGA also insures agricultural production against natural calamities.

Hospital Services

In 1964, Greece had 1091 hospitals and medical care establishments providing 48 885 beds (5.7 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	377
Rural hospitals	114
Tuberculosis hospitals	20
Infectious diseases hospitals	3
Maternity hospitals	234
Paediatric clinics	28
Psychiatric hospitals	56
Hospitals for general surgery	154
Eye hospitals	44
Cancer hospitals	2
Orthopaedic hospitals	9
Urological hospitals	7
Other hospitals	42
Leprosarium	1
	20 928
	817
	5 296
	902
	3 423
	2 093
	9 024
	2 522
	521
	321
	1 082
	187
	1 104
	665

Of the 1091 hospitals 912, with 38 807 beds, were state-maintained. In all these institutions, with the exception of the rural hospitals, 705 461 patients received 12 829 170 days of in-patient care in 1964.

In the same year out-patient facilities provided by the State were available at eight health stations, 588 communal and 550 rural dispensaries. During the year 2 286 998 persons were examined. In 1963, the National Institution for Social Welfare and Relief (PIKPA) provided out-patient care in 332 establishments. In the same year, the Social Insurance Institute (IKA) recorded 9 064 698 visits at its dispensaries and 852 424 domiciliary visits. In 1963 there were also three venereal diseases dispensaries, where 1334 new cases were seen, and 47 trachoma control dispensaries attended by 13 971 persons.

Medical and Allied Personnel

In 1964, 11 980 doctors were working in Greece. The doctor/population ratio was thus one to 710. Other health personnel included:

Dentists	3 282
Fully qualified midwives	2 885
Fully qualified nurses	2 987
Fully qualified nurses with midwifery qualifications	10
Assistant nurses	1 983
Practical nurses	2 342
Volunteer nurses	8 456

Communicable Disease Control and Immunization Services

The incidence of typhoid and paratyphoid fevers is declining as a result of better sanitation and improved water supply systems. An epidemic of typhoid fever, however, occurred in Athens and Piraeus during 1964, affecting particularly the consumers of shellfish. Brucellosis is endemic in certain cattle-breeding areas of the country. An eradication programme, which has been prepared in collaboration with the veterinary services, will be started in Thessaly.

The malaria eradication campaign was instituted in 1957. The periodic ground-spraying of swamps has been interrupted since 1960, as it is no longer considered necessary. Air spraying is still carried out over certain big swamps and rice fields. An exceptional epidemic of malaria was reported in 1964 in a small area of Trikkala *nomos*. On the other hand no deaths from malaria have been reported since 1960, and tests to determine average malaria parasite rates in infants and schoolchildren have indicated zero rates since 1959.

Although the tuberculosis mortality rate is gradually declining, the morbidity rate is still high. BCG vaccination, which has been carried out for many years, is now obligatory, and in 1964, 30 000 persons were vaccinated. Efforts are also made to ensure the professional rehabilitation and the social reinstatement of clinically treated tuberculosis patients. The incidence of venereal diseases, particularly of syphilis, is increasing in Greece, especially in ports and industrialized urban areas. Free treatment of these diseases is given in hospitals and dispensaries. Gonorrhoeal infections are apparently declining. Ancylostomiasis, which is endemic in the rural areas of the island of Corfu, is controlled by the application of a programme for the detection and treatment of infected persons and by the development of sewerage systems. Occasional slight outbreaks of poliomyelitis occurred in 1961 and 1963, and oral vaccination was carried out on a very wide scale during 1964. Leprosy is still endemic in certain areas of the country.

The following immunization procedures were carried out in 1964:

Poliomyelitis (Sabin vaccine — three types administered separately)	7 330 752
Poliomyelitis (Salk vaccine)	153 825
Diphtheria and tetanus	123 859
Smallpox	90 034
Typhoid and paratyphoid fevers	53 090
Cholera	8 034
Diphtheria	3 906
Diphtheria, whooping-cough and tetanus	2 235
Yellow fever	1 716
Tetanus	1 087
Epidemic typhus	74
Plague	13

Chronic and Degenerative Diseases

Cancer morbidity and mortality has increased progressively during the period under review. A country-wide programme for the detection, diagnosis and treatment of cancer has been prepared, and the number of beds in hospitals has been increased. Two cancer control dispensaries have started functioning at Larissa and Tripolis.

In order to deal with the mental health situation, which now constitutes an important health problem, a programme for the detection, follow-up, treatment and prevention of mental diseases has been started in the psychiatric dispensaries of the Athens area. It is planned gradually to establish similar mental health dispensaries throughout the country. The number of beds for mental patients in hospitals and private clinics has been increased by approximately 850 during the past four year. Departments for occupational therapy and professional adjustment have been created in the state mental hospitals as a contribution to the rehabilitation of socially adaptable mental patients. A programme for reorganizing mental health work in accordance with modern conceptions is under consideration.

Environmental Sanitation

During the period under review several investigations in the field of environmental sanitation were carried out. These included a sanitary survey of settlements having less than 3000 inhabitants, in 1961; a survey of the arrangements for the chlorination of water supplied to communities, in 1962; a sanitary survey of schools, in 1963-1964; and a review of the sewerage systems and the disposal of refuse in settlements, which started in 1964.

In 1961, 3 155 853 persons were served with piped water to their dwellings; 2 678 783 had to rely on public piped water systems; 2 068 149 depended on

water from community or private wells and local springs, and 485 768 had to rely on other sources.

Major Public Health Problems

Faulty environmental sanitation, especially in rural areas, is the most important health problem in Greece. Other major health problems are those relating to the incidence of communicable diseases, such as tuberculosis, venereal disease and malaria, and to the increase in cancer and mental disease. Although a great effort has been made during the period under review to increase the number of medical care facilities, notably bed accommodation and the arrangements for nurse training, the provision of medical treatment, especially in rural and remote areas, remains a problem to be solved. Revision and amendment of the country's pharmaceutical legislation has still to be undertaken.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade has been marked by the acceleration of the economic development of the country and the attainment of higher living standards. However, under-employment and unemployment still persist in Greece. Emigration has continued in increased numbers, upsetting the normal age structure of the population, as the age of emigrants is usually between 20 and 45 years. There is also the danger of aggravating the unequal distribution of population, as the majority of the emigrants come from rural areas. Emigration also affects the country's economic development.

Greece has also been marked by accelerated industrialization and urbanization. With a view to remedying the unfavourable living conditions in rural areas and to reducing the trend towards urbanization, the Government is making great efforts to improve rural conditions.

At the end of 1963, the education system in Greece was reorganized and modified. Elementary and secondary education are now free of charge. The illiteracy rate of the population decreased from 24 per cent. in 1951 to 18 per cent. in 1961.

National Health Planning

An experimental sanitation programme for rural and urban districts has been started in the Thessaly region with a view to its gradual extension to the whole country. An experimental health unit (PYM)

which has been established in Thessaly is closely associated with the Agrarian Sanitation School at Pharsala; doctors, midwives and visiting nurses belonging to the dispensaries of the area covered by the unit attend theoretical and practical refresher courses at the School. Various other programmes have been started, particularly in rural areas, for the improvement of sanitary conditions, water supplies and sewerage systems.

Government Health Expenditure

In 1964, the total state general budget amounted to 25 214 million drachmas, of which 1396 million drachmas (i.e., 5.4 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 164 drachmas per head on these services, as compared with 86 drachmas per head in 1959.

HUNGARY

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	10 028 000	10 061 000	10 088 000	10 120 000
Number of live births	140 365	130 053	132 335	132 141
Birth rate (per 1000 population)	14.0	12.9	13.1	13.1
Number of deaths	96 410	108 273	99 871	100 830
Death rate (per 1000 population)	9.6	10.8	9.9	10.0
Natural increase (per cent.) .	0.44	0.21	0.32	0.31
Number of deaths, 1-4 years	845	985	794	661
Death rate, 1-4 years (per 1000 population at risk)	1.4	1.7	1.4	1.2
Number of infant deaths . .	6 185	6 232	5 676	5 284
Infant mortality rate (per 1000 live births)	44.1	47.9	42.9	40.0
Number of maternal deaths .	110	100	89	70
Maternal mortality rate (per 1000 live births)	0.8	0.8	0.7	0.5

Of the 100 830 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart diseases (22 462), malignant neoplasms (18 791), vascular lesions affecting the central nervous system (14 321), accidents (3926, including 967 in motor-vehicle accidents), tuberculosis, all forms (2637), hypertension (2633), senility without mention of psychosis, ill-defined and unknown causes (1682), pneumonia (1641), birth injuries, post-natal asphyxia and atelectasis (1518).

The communicable diseases most frequently notified in 1964 were: measles (38 261), tuberculosis, all forms, new cases (19 093), infectious hepatitis (14 904), bacillary dysentery (13 008), scarlet fever (7794), trachoma (725), typhoid and paratyphoid fevers (423), influenza (367), whooping-cough (316), tetanus (127), meningococcal infections (120).

Organization of the Public Health Services

The Ministry of Health is responsible for the administration of the public health services. It

includes the following departments: medical and paramedical training institutions, preventive and curative medicine, maternal and child health, health inspection and epidemiology, planning, finances and investments, pharmacy services and medical supplies, and social services. The Minister of Health has available the services of a scientific medical council which advises him on the preparation, organization and administration of the national health programmes. The four medical schools, the school for post-graduate medical training, a number of schools for paramedical personnel and certain other national institutions are under the direct control of the Ministry of Health.

At the local level, the public health services are administered by the board of health of the regional council. Each board of health consists of a chief medical officer, his assistants and a public health visiting nurse. The regional boards of health are in charge of the regional hospitals and polyclinics, health posts, dispensaries, training schools for paramedical personnel, blood banks, etc. At the lower administrative level, there are the municipal and cantonal health sections, each headed by a chief medical officer who directs and supervises the activities of the doctors within his administrative area. The medical district, which is an area with a population of 2600 to 3400, is the organizational unit for the provision of curative and preventive medical care by a general practitioner who is a state employee. In 1964, there were 3421 medical districts. Paediatric districts are also being organized; in 1964 there were 354.

Hospital Services

In 1964, the total number of hospitals and establishments for medical care was 262, providing 73 261 beds (equivalent to a bed/population ratio of 7.2 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	110
Tuberculosis hospitals *	40
Infectious diseases hospitals *	2
Obstetric hospitals	5
Paediatric hospitals	11
Psychiatric hospitals *	4
Chronic diseases hospitals	7
Cancer hospital	1
Hospitals for general surgery . . .	2
Maternity homes	80
	1 377

* There were also tuberculosis, infectious diseases and psychiatric services in general hospitals.

In addition, there were 22 546 beds in 218 old people's homes.

Medical and Allied Personnel and Training Facilities

In 1964 the Ministry of Health registered 17 296 physicians, exclusive of 866 retired physicians but including 1560 physicians qualified in dentistry. The doctor/population ratio was one to 585. Other health personnel included:

Dentists	361
Pharmacists	4 033
Pharmaceutical assistants	3 933
Fully qualified midwives	2 130
Fully qualified nurses *	17 396
Auxillary nurses	6 685
Sanitary inspectors	739
Physical therapists	504
Laboratory technicians	2 561
X-ray technicians	763
Other scientific personnel	2 070
Dental auxilaries	236
Sanitary auxilaries	799
Dietitians	444
Nursing aides	1 103

* Excluding 3571 maternal and child health visitors and 3578 domiciliary and industrial nurses.

Medical education is provided in four universities: Budapest, Szeged, Debrecen and Pécs. The training of physicians lasts six years; that of stomatologists and pharmacists four and a half years. In 1963 the curriculum of the medical faculties was reorganized.

Communicable Disease Control and Immunization Services

The tuberculosis mortality rate dropped from 3.1 per 10 000 inhabitants in 1960 to 2.6 in 1964. Tuberculosis morbidity decreased from 28 092 cases in 1960 to 19 093 in 1964. Tuberculosis control work is based on the Koranyi Phthisiology Institute, 195 tuberculosis dispensaries and 108 X-ray teams which carried out 5.9 million case-finding examinations in 1964. BCG vaccination is compulsory for newborn children and persons up to 20 years who are tuberculin-

negative. Examination and treatment is free and hospitalized patients receive financial assistance. There were altogether 13 830 beds for tuberculosis patients in 1964.

The National Institute for Dermatology and Venereology is responsible for the control of venereal diseases. At the end of 1964, there were 123 venereal and dermatological dispensaries, which carried out 4.4 million examinations. In 1964, altogether 20 646 cases of syphilis were on the registers, compared with 50 449 in 1954. Significant reductions have also been obtained in the incidence of typhoid fever, diphtheria, whooping-cough, tetanus, poliomyelitis and epidemic meningitis. All cases of malaria recorded in 1964 were imported.

The following immunization procedures were carried out in 1964:

Tetanus *	723 292
Diphtheria *	557 239
Whooping-cough *	387 926
Poliomyelitis (oral vaccination)	365 060
Smallpox	254 314
Typhoid and paratyphoid fevers **	169 570
Scarlet fever	12 111
Dysentery	512
Rabies	123

* Including 380 842 combined immunizations against diphtheria, whooping-cough and tetanus.

** Including 167 994 combined immunizations against typhoid and paratyphoid fevers and tetanus.

Chronic and Degenerative Diseases

Cancer control in Hungary is organized by the National Oncological Institute, which supervises the work of 45 oncological dispensaries, 90 oncological services in polyclinics and 13 onco-cytological stations. Also engaged in cancer detection are 277 gynaecological units and hospital services. In 1964 nearly 500 000 examinations were made. In the same year the oncological examination of all hospitalized women over 35 years of age was initiated.

Goitre ceased to be endemic after the use of iodized salt was introduced. As the incidence of goitre among schoolchildren increased in the districts where the use of iodized salt was interrupted, the treatment was reintroduced.

Specialized Units

In the villages, maternal and child health care is the responsibility of general practitioners and in the towns of specialists. In 1964, they were assisted by 2856 visiting public health nurses. The general practitioners in the villages can refer their patients to the gynaecological services of a mobile team of specialists. In 1964, there were 132 such mobile

teams. During 1964, 132 000 pregnant women and 114 322 infants under one year of age received advice and supervision. Of all deliveries, 128 680 (99.3 per cent.) were attended by a doctor or qualified midwife and 97.4 per cent. were institutional. Domiciliary visits were paid to 124 250 pregnant women and 120 951 infants under one year. Accommodation for 34 270 children was available in crèches, and 3985 children up to three years of age could be looked after at state expense in day nurseries. There were also 2000 beds in homes for mentally and physically deficient children. Four hundred and forty school doctors supervised the health of 1 150 388 schoolchildren, i.e., 89.4 per cent. of the total school population. A total of 714 222 schoolchildren received some form of dental treatment. There were 792 dental units in polyclinics and other out-patient departments, which gave 7 656 980 dental treatments during 1964. The 33 psychiatric out-patient clinics and 56 clinics for alcohol addicts recorded 71 387 consultations. There were also 73 neurological units in polyclinics, which carried out 993 692 examinations and treatments during 1964. Medical and industrial health care was provided to 72 per cent. of all workers. Hungary also had 169 units for sport health and physical education. There were public health laboratories in three national public health institutes, 20 health centres and seven hospitals. These 30 laboratories carried out 7 481 191 examinations in 1964.

Environmental Sanitation

In 1963, of 2 844 000 dwellings with 9 680 600 inhabitants, 923 600 with 3 051 800 inhabitants had piped water. This is the equivalent to 31.5 per cent. of all dwellings. There were 670 000 dwellings connected to sewerage systems and 190 200 with individual installations.

During the period 1961-1964 a number of regulations were promulgated regarding water supplies, water treatment facilities, housing conditions, air pollution, food hygiene and radioactive substances and preparations.

Major Public Health Problems

The public health problems of Hungary which require study and action are: extension of the network of medical establishments, medical supervision of the total population, development of rehabilitation services, establishment of polyclinics in factories, reduction of prematurity and perinatal and infant mortality, introduction of modern methods of environmental sanitation and control, disposal of radioactive waste, reorganization of school health services, control of

iatrogenous infections, intensification of control measures against infectious hepatitis and dysentery, establishment of hospital pharmacies, publication of the sixth pharmacopoeia, rehabilitation and social welfare of mentally and physically defective persons.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade under review, the national income increased by 84 per cent. and the industrial production by 200 per cent. In 1964, industry employed 1 320 000 workers and employees, as compared with 990 000 in 1954. The most important development in agriculture was the introduction of agricultural co-operatives, which by 1964 covered 96.9 per cent. of all arable land. In 1964, 9.8 million inhabitants (97 per cent. of the total population) were covered by the health insurance scheme. Housing conditions have improved. From 1955 to 1959 an average of 53 868 dwellings were built annually. The comparable figure for the period 1960-1964 was 57 161.

National Health Planning

The second five-year development plan was in operation in 1964 and the third plan was being prepared. The National Planning Office is responsible for the direction and co-ordination of planning activities; it prepares the national development plans in collaboration with the ministries concerned and the other planning authorities. The five-year development plans are approved by the Parliament. The health plan is part of the overall development plan. Its preparation is the responsibility of the Ministry of Health, which has a special planning department. The health and planning boards of the regional councils and the national institutes collaborate with this department. The broad health objectives of the second five-year plan are free medical services for all inhabitants, provision of industrial health services, emphasis on preventive medicine, reduction of infant mortality, tuberculosis control and increase of medical care establishments and health personnel. Specific targets set out in the plan are: an increase in the hospital accommodation by approximately 7600 to 8000 beds, including 3000 beds for tuberculosis patients; the provision of an additional 250 medical districts to extend general medicine facilities, particularly to the villages; the organization of 150 paediatric districts in urban and industrial centres; the establishment of polyclinics in a number of large factories; the provision of 6000 additional places in crèches, and 3100 additional beds in homes for chroni-

cally ill and old people; an increase in the number of medical and health personnel by 25 000, together with an annual output of 900 to 1000 doctors.

Medical and Public Health Research

Research activities are carried out in universities, national institutes, hospitals, polyclinics and dispensaries. The Government allocates funds for this purpose. The Council for Sciences and Higher Education is the highest authority in the country for research. Theoretical medical research is under the control of the medical and biological section of the Hungarian Academy of Sciences, clinical and public health research under the control of the Medical Scientific Council of the Ministry of Health. Important contributions have been made to research in such fields as lymphatic circulation, endocrinology, haematology, tuberculosis and ophthalmology.

International Collaboration

Hungary has signed health agreements with Bulgaria, Czechoslovakia, Eastern Germany, North Korea, Poland, Romania and the USSR. Cultural agreements, which also include the medical and health field, have been concluded with Finland, France, Italy, Norway, the United Arab Republic and the United Kingdom of Great Britain and Northern Ireland. Hungarian experts have also assisted developing countries.

Government Health Expenditure

In 1964, the total general government current expenditure on health and related welfare services was 10 142 million forints. A further sum of 693 million forints was spent on capital account for the improvement and development of these services. Almost 43 per cent. of current and 62 per cent. of capital expenditure is financed at the local level.

ICELAND

Population and Other Statistics

The population recorded at the last census, taken on 1 December 1960, was 177 892. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	178 675	181 768	185 195	188 571
Number of live births	4 563	4 711	4 800	4 742
Birth rate (per 1000 population) . . .	25.5	25.9	25.9	25.1
Number of deaths	1 248	1 236	1 327	1 308
Death rate (per 1000 population) . . .	7.0	6.8	7.2	6.9
Natural increase (per cent.)	1.85	1.91	1.87	1.82
Number of infant deaths	89	80	82	84
Infant mortality rate (per 1000 live births)	19.5	17.0	17.1	17.7

Life expectancy, as determined from the records for 1951-1960, was 70.7 years for males and 75.0 years for females.

Of the 1308 deaths recorded in 1964 the main causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (354), malignant neoplasms (262), vascular lesions affecting the central nervous system (151), accidents (100, including 24 in motor-vehicle accidents), pneumonia (71), congenital malformations, birth injuries, post-natal asphyxia and atelectasis and other diseases peculiar to early infancy and immaturity (68), hypertension (42), senility without mention of psychosis, ill-defined and unknown causes (24), suicide and self-inflicted injury (17).

The communicable diseases most frequently notified in 1964 were: influenza (3981), scarlet fever and streptococcal sore throat (92), meningococcal infections (16), whooping-cough (6). In 1963, 9999 cases of influenza and 736 of scarlet fever and streptococcal sore throat were reported.

Organization of the Public Health Services

The Ministry of Justice and Ecclesiastical Affairs is responsible for the public health of Iceland. It operates through a Department of Public Health, which has a Medical Director-General as its chief administrator. He is also the Chairman of a small committee of medical specialists, the Medical Council, which provides expert advice not only to the Ministry but also to other government departments and the law courts. The staff of the central health department is not exclusively whole-time, and many of its branches are in the executive charge of part-time specialists. For example, the associate professor of pharmacy in the University of Iceland is responsible for the supervision of the pharmacies and the control of drugs. Other professors and specialists act as consultants.

The country is divided into 57 medical districts which vary greatly in size. In each district there is a district physician who is a civil servant and who supervises the public health services and may also act as a general practitioner. Elected councils in both urban and rural areas are in charge of the environ-

mental services, and are responsible for the management of the public health services, hospitals and such health centres as exist. The implementation of public health regulations is in the hands of public health boards, which are presided over by the local chief of police, assisted by the district physician. In the towns the public health boards also employ additional public health officers, who are responsible for the supervision of the environmental services, food hygiene, etc.

In Iceland there are also a large number of societies and associations interested in such matters as the welfare of the tuberculosis patient, the prevention of accidents, etc. Their activities are complementary to those of the official organizations.

Social Security

Iceland has a general social insurance system which falls into two main sections—one concerned with health protection and the medical treatment and care of sick persons, and the other with income insurance, which provides cash benefits during sickness, invalidity and unemployment, pensions at retiring age, and allowances for widows and orphans. Contributions are collected by revenue agencies, and in certain instances by the local sickness benefit societies. Hospital treatment is free to the recipient, but certain small payments are made to general practitioners for their services, the balance being paid by the sickness insurance funds.

Hospital Services

In 1963 the total number of hospital beds provided in Iceland was 2148 (equivalent to 11.6 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General and rural hospitals	30
Tuberculosis hospitals	2
Maternity homes	3
Mental hospitals	2
Establishments for the mentally re- tarded	3
Geriatric institutions	5
Institutions for alcoholics	3
Leprosarium	1
	1 186
	70
	39
	285
	154
	322
	88
	4

The main hospital is the State Hospital at Reykjavik, which has just over 220 beds, and which is still in process of enlargement. It is the teaching hospital for the medical school of the University of Iceland and also trains nurses and other health service personnel. The State Hospital, the tuberculosis sanatoria and the mental hospitals are maintained and managed

by the State. The other hospitals and institutions, e.g., those for geriatric care, are maintained by the local authorities with governmental aid.

Eight towns operate health centres. These were originally intended to supervise tuberculosis patients but, with the regression of the disease, they are now used to provide maternal and child care services, immunization services, etc. The largest health centre, which is in Reykjavik, provides a whole range of additional services in the fields of mental health, school health and the prevention of alcoholism and venereal disease. In 1963, 4462 children and 2763 pregnant women attended the Reykjavik Health Centre for medical care and supervision, 337 alcoholic patients were counselled and 136 new patients attended its mental health clinic.

Medical and Allied Personnel and Training Facilities

In 1962 there were 224 physicians in Iceland, equal to one for every 810 inhabitants. Other health personnel included:

Dentists	51
Pharmacists	46
Veterinarians	16
Fully qualified midwives	186
Fully qualified nurses	275
Student nurses	101
Physical therapists	26

The majority of practising midwives serve in "midwife districts", while others work in maternity institutions. Physicians are trained at the medical school of the University of Iceland, from which approximately 19 graduate annually. Before obtaining a licence to practise a graduate must work as an intern at a recognized hospital in Iceland or abroad for a period of 13 months, and serve as a district physician for three months. Three-quarters of the physicians live in Reykjavik. This tendency of doctors to live in the capital makes it difficult to fill the posts of physicians in the country districts. Dentists are trained at the University of Iceland or at recognized foreign dental schools. They also tend to concentrate in Reykjavik. Because of this fact and by reason of the relative scarcity of dentists, the school dental services suffer and the inhabitants of the country districts receive very little dental care.

The training of all nurses takes place in the Icelandic State School of Nursing and in associated hospitals, in particular the State Hospital. The period of study is three years. Midwifery training lasts 12 months, and takes place at the Midwifery School of Iceland, which is associated with the maternity department of the State Hospital.

Communicable Disease Control and Immunization Services

Epidemics of certain infectious diseases, e.g., influenza and scarlet fever, are followed by a much lower incidence in the succeeding year. This has always been a feature of Icelandic epidemiological experience, particularly with the common infectious diseases of childhood. Attempts have been made in recent years to prevent the occurrence of epidemics by immunization. In 1961, 5632 small-pox vaccinations and over 12 000 immunizations against diphtheria, whooping-cough and tetanus were completed. In the same year nearly 19 000 doses of Salk poliomyelitis vaccine were administered.

The great triumphs of Iceland over communicable diseases have been achieved against leprosy and tuberculosis. The former disease has been virtually eradicated in 30 years, and the remaining leprosarium has only four beds. The specific death rate from tuberculosis, which was ten per 100 000 in 1956, had fallen in 1964 to 1.1 per 100 000. The decline in the incidence of the disease, and the availability of modern chemotherapy, made it possible to reduce the number of sanatorium beds from 271 in 1958 to 70 in 1963.

Environmental Sanitation

Of Iceland's population of approximately 190 000 in 1964, slightly more than one-third were living in communities with a population of less than 2000. Nevertheless all towns and villages and the majority of individual farms in rural communities have a piped water supply into the dwelling either from a central or an individual source of supply. All the towns and larger villages have a closed sewerage system discharging the sewage into the sea.

Government Health Expenditure

In 1963, total general government expenditure amounted to 1210 million krónur, of which 292 million krónur (24.1 per cent.) were devoted to the provision of health services. This expenditure was equivalent to 1580 krónur per head and represents an increase of over 50 per cent. in four years. A further sum of 41 million krónur was spent on capital account (i.e., 11.6 per cent. of total general government gross fixed capital formation), for the development and expansion of health facilities.

IRELAND

Population and Other Statistics

At the last census, taken in April 1961, the population of Ireland was 2 818 341. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	2 818 000	2 824 000	2 841 000	2 849 000
Number of live births	59 825	61 782	63 246	64 072
Birth rate (per 1000 population)	21.2	21.9	22.3	22.5
Number of deaths	34 763	33 838	33 795	32 630
Death rate (per 1000 population)	12.3	12.0	11.9	11.5
Natural increase (per cent.) .	0.89	0.99	1.04	1.10
Number of deaths, 1-4 years	314	261	230	247
Death rate, 1-4 years (per 1000 population at risk)	1.3	1.1	1.0	1.0
Number of infant deaths . .	1 827	1 800	1 682	1 712
Infant mortality rate (per 1000 live births)	30.5	29.1	26.6	26.7
Number of maternal deaths .	27	27	22	30
Maternal mortality rate (per 1000 live births)	0.5	0.4	0.3	0.5

In 1964, the total number of deaths was 32 630. The main causes were: arteriosclerotic and degenerative heart diseases (8536), malignant neoplasms (4962), vascular lesions affecting the central

nervous system (3928), senility without mention of psychosis, ill-defined and unknown causes (1929), bronchitis (1422), pneumonia (1275), accidents (998, including 290 in motor-vehicle accidents).

The communicable diseases most frequently notified in 1964 were: measles (8167), whooping-cough (1811), infectious hepatitis (1215), scarlet fever (648), dysentery, all forms (330), diphtheria (32), meningococcal infections (23), poliomyelitis (17), typhoid and paratyphoid fevers (14).

Organization of the Public Health Services

The Minister of Health, who is a member of the Cabinet, is responsible for the health services. He is assisted by a number of advisory bodies: the National Health Council, the Hospitals Commission, the Therapeutic Substances Advisory Committee, and certain specially constituted councils and professional organizations. The responsibilities of the Minister of Health include the supervision of local authorities in carrying out their health functions. He exercises some measure of supervisory control over certain professional councils (the medical registration council, the dental board, the nursing

board, the opticians board and the pharmaceutical society) and executive bodies (the voluntary health insurance board, the mass radiography board, the medical research council, the rehabilitation organization and the blood transfusion association).

There are no regional health authorities in Ireland. The local health authorities are generally the county councils and the joint health authorities, each of which has a manager, who acts as its chief executive officer, and a chief medical officer. Each local area has a consultative health committee to advise the manager on his functions in the health field.

In December 1961, a Parliamentary Select Committee was established which reviewed the existing system of health services. Following on this, a re-appraisal of the services was undertaken with a view to the formulation of an improved and more comprehensive system. A White Paper on the health services and their further development was published in 1966.

Hospital Services

In 1962, Ireland had 431 hospitals and establishments for in-patient care providing 57 902 beds, giving a bed/population ratio of 20.5 per 1000. The beds were distributed as follows:

Category and number	Number of beds
General hospitals	71
Rural hospitals	62
Medical centres	79
Tuberculosis hospitals	17
Infectious diseases hospitals	15
Maternity hospitals	7
Paediatric hospitals	4
Psychiatric hospitals	32
Eye hospitals	2
Orthopaedic hospitals	10
Cancer hospitals	3
Homes for chronic sick	12
Children's homes	4
Convalescent homes	7
Establishments for mental defectives	18
Homes for incurables	3
Old people's homes	74
Other establishments	11
	10 961
	2 281
	925
	2 533
	916
	766
	732
	19 357
	192
	1 397
	327
	145
	199
	195
	2 975
	397
	12 486
	1 118

Out-patient facilities were provided at hospital out-patient departments, health centres and dispensaries.

Medical and Allied Personnel

In 1961, Ireland had 2952 doctors, giving a doctor/population ratio of 1 to 955. Other health personnel included:

Dentists	567
Pharmacists	1 800
Nursing and midwifery personnel	15 230
Veterinarians	684

Communicable Disease Control and Immunization Services

Tuberculosis remained the greatest single problem in the field of communicable diseases, although the number of known new cases of respiratory and non-respiratory tuberculosis fell from 6702 in 1955 to 2178 in 1964. In view of this, the emphasis in recent years has been on the eradication of the disease rather than on mere control. Over 66 per cent. of the new cases of respiratory tuberculosis in 1964 occurred in persons aged 35 and over, and the object of the tuberculosis service has been to ensure the most thorough screening possible of the older age groups. An important new use of the mass X-ray service has been the introduction of community surveys in which an intensive attempt is made to screen the entire population in selected urban areas. These surveys are designed to drain the pool of infection in urban areas, as respiratory tuberculosis continues to be an urban disease.

Public schemes for the vaccination of infants against poliomyelitis were introduced in 1957 and subsequently extended to cover older age groups and certain categories at special risk. It was estimated that by mid-1964 about 62 per cent. of the population under 20 years of age had received at least two injections against the disease. The success of this scheme is reflected in the drop in the number of cases from 64 in 1961 to 17 in 1964. A vaccination programme using the Sabin oral vaccine was instituted in 1965.

The following immunization procedures were carried out in 1963:

Diphtheria (simple, and combined with whooping-cough and tetanus)	81 037
Poliomyelitis (Salk vaccine)	68 769
BCG	68 078
Smallpox	7 266

Chronic and Degenerative Disease

A commission of inquiry was established in February 1961 to examine problems associated with the care and treatment of mentally handicapped persons. A commission of inquiry was also established in July 1961 to advise on the care of the mentally ill. A campaign to discourage cigarette smoking particularly among the young has been in operation for a number of years.

Specialized Units

Practically all mothers receive medical assistance before, during and after delivery by a doctor or qualified midwife. A child welfare clinic service for children under six years is available free of charge in some urban areas. In 1964, 78 740 children under

six years of age were examined at 98 local health authority child welfare clinics. All pupils of primary schools have access to school health services. The aim is to examine each pupil at least three times while he is at the national school: as soon as possible after entry, about midway through his school career and in the last year of his attendance at the school. In 1964, the local health authorities operated 133 dental clinics where 166 619 persons attended. In 1963, there were also two non-governmental dental clinics which were attended by 10 831 persons. Ireland also had three hospital rehabilitation departments and two independent medical rehabilitation centres which were attended in 1964 by 1210 out-patients. In addition there are special residential and non-residential institutions for the blind, the deaf, the mentally handicapped and persons suffering from cardiac conditions, orthopaedic conditions, spastic palsies, etc. During the year ending on 31 March 1964, 152 psychiatric out-patient clinics were attended by 7800 new out-patients. Specialized units for the diagnosis and treatment of venereal disease are attached to hospitals throughout the country. Cancer diagnostic and follow-up services are provided at eight centres in addition to the service provided at three cancer hospitals. There are 22 public health laboratories in Ireland.

Environmental Sanitation

In 1961, of a total of 676 402 dwellings, 296 370 were provided with tap water inside the building, 41 729 with tap water outside the building; 48 757 had a private piped water supply and 289 546 had water from wells, fountains, pumps or other sources. With regard to sanitary facilities, 361 946 dwellings had flush lavatories, 12 574 had chemical closets, 64 605 had dry closets and 237 277 had no special facilities.

Major Public Health Problems

The diseases of the heart and cancer continue to be two of the most important public health problems. In particular, deaths from coronary heart disease increased from 3062 in 1955 to 4851 in 1964 while deaths from lung cancer increased from 435 in 1955 to 647 in 1964. In the period 1961-1964 the reduction in the mental hospital population which had commenced in 1959 continued. Out-patient and psychiatric clinic services which had been expanded contributed undoubtedly to the reduction in the number of in-patients. As regards the other major problems of tuberculosis and infant and maternal mortality, the downward trend in death rates generally continued.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The Government's first programme for economic expansion was published in 1958 and covered the period 1958-1963. It outlined the objectives of economic policy in agriculture, industry, tourism and the other main sectors of activity. It dealt specifically with the role of the State in promoting economic development, both directly through enterprise, grants, loans and tax incentives and by other means. An annual increase was achieved in gross national product for the five-year period 1958-1963 of about 4.5 per cent. The Government's second programme for economic expansion sets a target of 4.3 per cent. for the annual average growth rate during the period 1964-1970 inclusive. It is the Government's aim that improvements in social services, in the widest sense, will go hand in hand with the economic advance realized under the second programme.

National Health Planning

During the period 1961-1964 a number of measures were enacted with a view mainly to rationalizing and improving the administration of health services in certain respects and in order to remedy defects and omissions which had come to light in existing legislation. These measures included the following: the Poisons Act, 1961; the Hospitals Federation and Amalgamation Act, 1961; the Health (Corporate Bodies) Act, 1961; the Mental Treatment Act, 1961; and the Health (Homes for Incapacitated Persons) Act, 1964.

Medical and Public Health Research

Since 1937 considerable research work in the medical field has been carried out under the auspices of the Medical Research Council of Ireland in its own laboratories or in the laboratories of the universities and larger hospitals. These laboratories included a chemotherapy unit, a cell metabolism unit, a virus research laboratory concerned with the epidemiological aspects of influenza and poliomyelitis, and a protein research unit. During the period under review the activities of the Council have been expanding owing mainly to substantial increases in the grants made available to the Council by the Minister of Health. The total amount of such grants for the period 1955-1964 was £468 000 while grants from foundations, institutions and other sources amounted to £110 000.

International Collaboration

International collaboration in the health field was achieved mainly under the auspices of the World Health Organization and the Council of Europe.

Government Health Expenditure

In the fiscal year 1963/64, the total general government expenditure was £212 088 000. Of this total the government health expenditure amounted to £11 682 000, or approximately 5.5 per cent.

ITALY

Population and Other Statistics

At the last census, taken in October 1961, the population of Italy was 49 876 790. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	49 903 000	50 190 000	50 641 000	51 090 000
Number of live births	929 657	937 257	960 336	1 017 557
Birth rate (per 1000 population)	18.6	18.7	19.0	19.9
Number of deaths	468 455	509 174	516 377	488 655
Death rate (per 1000 population)	9.4	10.1	10.2	9.6
Natural increase (per cent.) .	0.92	0.86	0.88	1.03
Number of deaths, 1-4 years .	6 137	6 237	5 824	...
Death rate, 1-4 years (per 1000 population at risk)	1.8	1.8	1.7	...
Number of infant deaths .	37 844	39 199	38 552	36 149
Infant mortality rate (per 1000 live births)	40.7	41.8	40.1	35.5

Of the 516 377 deaths recorded in 1963 the main causes were: arteriosclerotic and degenerative heart disease (123 818), vascular lesions affecting the central nervous system (69 068), accidents (25 460, including 11 416 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (22 068), pneumonia (21 967), hypertension (17 928), bronchitis (17 001), cirrhosis of the liver (10 810).

The communicable diseases most frequently notified in 1964 were: measles (74 110), whooping-cough (21 885), infectious hepatitis (11 430), typhoid and paratyphoid fevers (11 259), scarlet fever (10 055), tuberculosis, all forms, new cases (8337), syphilis, new cases (5984), influenza (5691), diphtheria (2630), meningococcal infections (1572), poliomyelitis (919).

Organization of the Public Health Services

The Ministry of Health, which was established in 1958, is the supreme health authority. It comprises the following general directorates: public hygiene and hospitals, social medicine, pharmaceutical services, food hygiene and nutrition, veterinary services, administration and personnel. International relations and cultural affairs are the responsibility of a special

office directly under the Minister. The Superior Council of Health acts in an advisory capacity to the Ministry. It is composed of representatives of the public administrations, various experts and representatives of the professional organizations. The Ministry exercises control over the various national health institutions, among which the most important are the national maternal and child health service and the Italian Red Cross. It also has technical responsibility for the sickness insurance institutes which are administered by the Ministry of Labour and Social Security.

At the provincial level, the Ministry of Health is represented by the offices of the provincial health officer and of the veterinary health officer, which are co-ordinated by the prefect. Each province has a provincial health council under the chairmanship of the prefect. The main responsibilities of the provincial health organizations are: administration of the provincial public health services, laboratories, mental health services, assistance to illegitimate children, and participation in administration of the provincial antituberculosis associations.

In the communes, the mayor is the chief health authority. He is assisted by the municipal physician. The commune is responsible for preventive health services, environmental hygiene, food hygiene, school health, medical care facilities, pharmaceutical and veterinary services.

Hospital Services

At the end of 1963, Italy had 2563 hospitals and institutions for in-patient care providing 485 336 beds (equivalent to a bed/population ratio of 9.6 per 1000). There were 1494 state-maintained hospitals, with a capacity of 405 343 beds. During 1963, 5 555 179 patients were admitted and received 139 770 000 days of in-patient care. The total number of beds was distributed as follows:

Category and number	Number of beds
General hospitals	1 977
Tuberculosis hospitals	266
Psychiatric hospitals	180
Other specialized hospitals	140
	275 053
	63 799
	115 217
	31 267

Out-patient facilities were provided in 1964 at 1127 hospital out-patient departments, 812 polyclinics, 9500 medical aid posts, and 60 mobile health units.

Medical and Allied Personnel

In 1961, Italy had 81 200 doctors including 15 000 doctors of medicine specializing in odontology. The doctor/population ratio was one to 615, or one to 754 excluding the doctors specializing in odontology. Other health personnel included:

Pharmacists	30 500
Fully qualified midwives	16 000
Fully qualified nurses	38 000
Veterinarians	7 800

Communicable Disease Control and Immunization Services

Following mass vaccination campaigns, the polio-myelitis morbidity has been considerably reduced. Brucellosis control activities have been carried out in collaboration with the veterinary services. The number of tuberculosis notifications fell from 70 500 in 1955 (1.45 per 1000 inhabitants) to 47 700 in 1964 (0.93 per 1000). The number of cases of primary and secondary syphilis treated in communal dispensaries, having increased from 2269 in 1955 to 8065 in 1961, fell to 4774 in 1964. The incidence of gonorrhoea is progressively decreasing. The control of venereal diseases was reorganized by law in 1958.

The following immunization procedures were carried out in 1962:

Smallpox	3 500 339
Diphtheria	2 113 092
Typhoid and paratyphoid fevers	1 688 429

In 1963, 776 357 immunizations against polio-myelitis were carried out using Salk vaccine, and between March 1964 and November 1965 a further 10 502 738 were completed using Sabin vaccine.

Chronic and Degenerative Diseases

On the basis of data provided by hospitals and health insurance funds for a special survey, the number of cases of cardiovascular disease is estimated at over 2 200 000. As part of the network of centres for the study and control of social diseases, 160 units have been established for the control of cardiovascular and rheumatic diseases. The number of persons suffering from diabetes is estimated at 400 000, which is equivalent to approximately 0.8 per cent. of the population. There are 80 specialized diabetes centres. Italy has three main centres for cancer control, in Milan, Rome and Naples, and 82 provincial centres.

Specialized Units

In 1963, maternal and child health services were based on 2592 pre-natal units and 6257 child welfare dispensaries. These centres were attended by 219 793 pregnant women, 534 956 children under one year, and 164 728 children aged between one and five years. Domiciliary care was given to 136 722 pregnant women and 3 628 323 children. The number of schoolchildren under medical supervision at 2475 school health units was 728 970, or 12 per cent. of the total school population. Dental care was given to 386 500 schoolchildren at 705 school dental units. In 1964 other specialized units included: 623 tuberculosis dispensaries; 100 mobile X-ray units; 478 trachoma centres; 470 centres for the control of venereal diseases; and 32 treatment centres for spastic children. During that year, 91 public health laboratories carried out 1 763 694 examinations.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The economic and social development which characterized the ten-year period under review greatly influenced the health situation of the country. It resulted in the reduction of the infectious diseases and—indirectly—in an increase in the chronic and degenerative diseases. Expectancy of life at birth has increased. The industrialization, urbanization and motorization which are closely linked with this development have resulted in an increasing number of accidents. The rapid changes in social and family life and in working conditions constitute the most important problems for the public health authorities.

The establishment in 1961 of centres for the study and control of the social diseases is another important development. The aim of the centres is to co-ordinate local medical and welfare activities; their functions have been defined as follows: case-finding and early diagnosis of disease, prophylactic measures, provision of in-patient and out-patient treatment, after-care facilities, research into the origins and causes of social diseases, health education of the public, and the initiation of public health programmes. The centres received financial support from the Ministry of Health, both for establishment and for maintenance.

National Health Planning

In 1964, the Italian Government decided to co-ordinate the development of the country in a general economic plan covering a five-year period. A health development plan is included in this general plan. Its objectives include the reorganization and develop-

ment of the local services through local health units; an increase in the number of hospital beds by 82 000, of which 70 per cent. will be in southern Italy and in the islands in order to achieve a better distribution; the gradual establishment of a national health service; and the unification of the various institutions for medical care and social welfare.

The general economic plan is co-ordinated by a technical interministerial committee which is set up in the Budget Ministry. The execution of the plan is entrusted to special units established within the various ministries concerned and to provincial committees.

It is also planned to reorganize the structure of the public health services. The revision of the laws on hospital and psychiatric care is under consideration. Other important schemes have been initiated, for

example, for the control of alcoholism, the prevention of road accidents, the prevention of poisoning, mental hygiene and health education.

International Collaboration

Italy participates in the international health activities of WHO, the Council of Europe, and the European Economic Community.

Government Health Expenditure

In the fiscal year 1963/64, the total Ministry of Health expenditure on current account was 23 532 million lire. This was equivalent to an expenditure of 462 lire per head. A further sum of 300 million lire was spent on capital account.

LUXEMBOURG

Population and Other Statistics

At the last census, taken in December 1960, the population of Luxembourg was 314 889. Population estimates and some other vital statistics for the period 1964 are given in the following table:

	1961	1962	1963	1964
Mean population	316 900	320 800	324 100	327 800
Number of live births	5 112	5 137	5 112	5 229
Birth rate (per 1000 population)	16.1	16.0	15.8	16.0
Number of deaths	3 616	4 037	3 929	3 857
Death rate (per 1000 population)	11.4	12.6	12.1	11.8
Natural increase (per cent.)	0.47	0.34	0.37	0.42
Number of deaths, 1-4 years	31	27	29	28
Number of infant deaths	134	160	146	156
Infant mortality rate (per 1000 live births)	26.2	31.1	28.6	29.8

Of the 4037 deaths recorded in 1962 the main causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (1089), malignant neoplasms (540), senility without mention of psychosis, ill-defined and unknown causes (414), nephritis and nephrosis (220), accidents (188, including 86 in motor-vehicle accidents), pneumonia (121), diabetes mellitus (77).

The communicable diseases most frequently notified in 1964 were: measles (945), scarlet fever (534), whooping-cough (214), tuberculosis, all forms, new cases (147), gonorrhoea (99), infectious hepatitis (58), syphilis, new cases (10), typhoid and paratyphoid fevers (9).

Organization of the Public Health Services

The Ministry of Public Health is responsible for the country's health services. It is supported by a

Medical Council which acts in an advisory and disciplinary capacity. The Director of Public Health is responsible for the administrative and technical direction of the health services. He is assisted by a Superior Health Council and a Medico-social Council. The technical services comprise: health inspection; specialized services, including control of environmental sanitation, food and drugs, etc.; the Institute of Hygiene and Public Health (previously the State Laboratory); and state-maintained medical care institutions.

Since 1964, occupational health is under the control of the Ministry of Public Health. Because of the small size of the country, there are no regional health organizations. However, the communal administrations have extensive power in matters of health regulations within their territory. These regulations are subject to approval by the central administration.

Hospital Services

In 1964, Luxembourg had 68 hospitals and establishments for medical care which provided 5748 beds (equivalent to 17.5 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	19
Medical centres	8
Tuberculosis hospitals	4
Infectious diseases hospital	1
Maternity hospitals	2
Psychiatric hospitals	2
Geriatric clinics	2
Convalescent homes	3
Old people's homes	25
Institution for the blind	1
Institution for the deaf and dumb	30
	1 927
	24
	320
	39
	69
	1 332
	67
	280
	1 610
	50

Medical and Allied Personnel

In 1963, Luxembourg had 316 doctors, of whom 45 were in government service and 271 in exclusively private practice. There was thus one doctor per 1030 inhabitants. Other health personnel included:

Dentists	121
Pharmacists	166
Fully qualified midwives	53
Fully qualified nurses	141
Psychiatric nurses	137
Social hygiene nurses	54
Assistant nurses	263
Nurse aides without diploma	170
Veterinarians	41
Sanitary engineer	1
Sanitary inspectors	3
Laboratory technicians	20

Communicable Disease Control and Immunization Services

Communicable diseases do not present a public health problem. The incidence of tuberculosis has decreased in ten years from 100 per 100 000 inhabitants to 50. Only sporadic cases of typhoid fever occur. Poliomyelitis and diphtheria have completely disappeared, but whooping-cough and measles are still common among infants and children. Mass vaccination against whooping-cough has been organized. The incidence of venereal diseases is not important. There have been no quarantinable diseases.

The following immunization procedures were carried out in 1964:

Poliomyelitis	18 000
Diphtheria	15 000
Tetanus	10 000
Smallpox	9 000
Whooping-cough	1 500
BCG	500

Chronic and Degenerative Diseases

Centralized surveillance of cardiovascular and rheumatic diseases has not yet been organized. Trials of cancer case-finding are being carried out, but no systematic preventive measures have yet been developed.

Specialized Units

Pre-natal care is organized on an entirely private basis, and there are no pre-natal centres in Luxembourg. There were, however, 45 infant clinics in 1964. Domiciliary care was given to 2400 infants under one year. All deliveries were attended by a doctor

or qualified midwife. The total school population has access to school health services. All dental health care is provided by private dentists. Luxembourg has an independent medical rehabilitation centre and a public health laboratory.

Environmental Sanitation

In 1964, 99 per cent. of the total population were served with piped water to their dwellings. There are only a few isolated houses which do not have this facility. A total of 110 000 inhabitants were served by sewerage systems, 200 000 had sewerage and sewage treatment facilities, and 20 000 were provided with individual installations.

Major Public Health Problems

The most important public health problems can be listed as follows: organization of mental health services, control of cardiovascular and rheumatic diseases, prevention of cancer, health education, protection of water, development of preventive and rehabilitation services, clearance of remaining slums.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The period 1955-1964 has been marked by a continuous improvement in the standard of living and in housing conditions. Social security benefits have been extended to practically all inhabitants. Cultural and economic ties with neighbouring countries have been reinforced. The sphere of the health services has been enlarged and the number of health personnel increased. New health services have been established.

National Health Planning

Health programmes in preparation or presently to be undertaken include: recruitment and training of health personnel by increasing the number of training schools and by offering better working conditions; quantitative and qualitative development of the hospital network; development of the services for the control of dangerous drugs; systematic and compulsory organization of occupational health services.

Medical and Public Health Research

Owing to the absence of university centres and scientific institutes, no general research activities are

carried out in Luxembourg. However, research of local interest is currently done on such subjects as drinking-water, water purification, air pollution and radioactivity.

International Collaboration

Luxembourg is collaborating in health matters with WHO, the Council of Europe and its Benelux partners. It also collaborates with the neighbouring

countries in matters relating to the protection of border rivers and to atmospheric pollution.

Government Health Expenditure

In 1964 the total general government expenditure was 5500 million Luxembourg francs, of which 465 million francs (i.e., 8.5 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 1419 francs per head on these services.

MALTA

Population and Other Statistics

At the last census, taken in November 1957, the population of Malta was 319 620. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	328 854	329 011	328 116	323 591
Number of live births	7 674	7 513	6 672	6 394
Birth rate (per 1000 population)	23.3	22.8	20.3	19.8
Number of deaths	2 937	2 840	2 981	2 756
Death rate (per 1000 population)	8.9	8.6	9.1	8.5
Natural increase (per cent.)	1.44	1.42	1.12	1.13
Number of deaths, 1-4 years	37	33	27	22
Death rate, 1-4 years (per 1000 population at risk)	1.2	1.1	0.9	0.8
Number of infant deaths	244	263	228	219
Infant mortality rate (per 1000 live births)	31.8	35.0	34.2	34.3
Number of maternal deaths	3	1	...	10
Maternal mortality rate (per 1000 live births)	0.4	0.1	...	1.6

Of the 2756 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart diseases (626), vascular lesions affecting the central nervous system (414), malignant neoplasms (348), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (154), senility without mention of psychosis, ill-defined and unknown causes (147), diabetes mellitus (139), hypertension (124).

The communicable diseases most frequently notified in 1964 were: whooping-cough (934), measles (336), typhoid fever (51), diphtheria (26), tuberculosis, all forms, new cases (20), typhus (9).

Organization of the Public Health Services

Public health, hospital and medical services are directly administered under a medical and health department of which the Chief Government Medical

Officer is the head. He is administratively responsible to the Minister of Health.

Hospital Services

In 1962, Malta had altogether 12 hospitals and establishments for in-patient medical care, providing 3147 beds—equal to 9.6 beds per 1000 population. All these institutions were operated by the Government. This total of 3147 beds were distributed as follows:

Category and number	Number of beds
General hospitals	3 745
Tuberculosis hospital	1 112
Infectious diseases hospitals	2 204
Psychiatric hospitals	2 934
Hospitals for chronic diseases	2 217
Leprosarium	1 118
Old people's home	1 817

Out-patient facilities were available in 1964 in three hospital out-patient departments and 57 dispensaries and from a mobile health unit. Altogether 198 682 attendances were registered.

Medical and Allied Personnel

In 1961, there were 424 doctors working in Malta—equivalent to a doctor/population ratio of one to 780. Other health personnel included:

Dentists	33
Pharmacists	184
Fully qualified midwives	88
Fully qualified nurses	163
Assistant nurses	358
Veterinarians	2

Communicable Disease Control and Immunization Services

In 1964, a poliomyelitis vaccination campaign was carried out and 84 800 children aged between six

months and 15 years were immunized. An expanded vaccination programme against poliomyelitis, tuberculosis, diphtheria and tetanus is being planned. In order to reduce the incidence of brucellosis, the immunization of animals has been made compulsory and, in particular, an intensive campaign for the immunization of goats has been carried out.

Specialized Units

In 1964, 22 102 consultations were given to pregnant women and 16 863 to children of up to five years of age. A total of 4049 deliveries (63.3 per cent. of all deliveries) were attended by a doctor or qualified midwife. Thirteen school health units supervised the health of 49 796 schoolchildren. There were 11

dental health units which treated 37 276 patients. Other specialized units included two psychiatric clinics which were attended by 630 new patients, and a public health laboratory which carried out 31 918 examinations.

Government Health Expenditure

In the 1964/65 fiscal year the total general government consumption expenditure amounted to £8.4 million, of which £1.9 million (i.e., 22.6 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of £5.8 per head on these services, as compared with £5.5 per head in 1961. No expenditure was incurred on capital account for the construction of new health facilities.

NETHERLANDS

Population and Other Statistics

At the last census, taken in May 1960, the population of the Netherlands was 11 461 964. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	11 637 223	11 797 199	11 967 051	12 127 120
Number of live births	247 407	246 150	249 879	250 914
Birth rate (per 1000 population)	21.3	20.9	20.9	20.7
Number of deaths	88 321	93 969	95 734	93 437
Death rate (per 1000 population)	7.6	8.0	8.0	7.7
Natural increase (per cent.) .	1.37	1.29	1.29	1.30
Number of deaths, 1-4 years	942	1 024	924	959
Death rate, 1-4 years (per 1000 population at risk)	1.0	1.1	1.0	1.0
Number of infant deaths . .	4 214	4 174	3 941	3 719
Infant mortality rate (per 1000 live births)	17.0	17.0	15.8	14.8
Number of maternal deaths .	95	82	82	83
Maternal mortality rate (per 1000 live births)	0.38	0.33	0.33	0.33

Of the 93 437 deaths recorded in 1964, the main causes were: malignant neoplasms (22 116), arteriosclerotic and degenerative heart disease (22 078), vascular lesions affecting the central nervous system (11 313), accidents (5125, including 2370 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (3319), diabetes mellitus (1790), hypertension (1610), congenital malformations (1477), bronchitis (1369), pneumonia (1309), infections of the newborn and other diseases peculiar to early infancy and immaturity (1200), birth injuries, post-natal asphyxia and atelectasis (980).

In 1963 the most frequently notified communicable diseases were: scarlet fever (4887), bacillary dysentery (1095), infectious hepatitis (752), meningococcal infections (183), typhoid and paratyphoid fevers (89), malaria, new cases (34), poliomyelitis (33).

Hospital Services

At the beginning of 1962, the total number of hospitals and other health institutions providing in-patient accommodation was 1602, with 174 080 beds (equivalent to a bed/population ratio of 14.9 beds per 1000) of which 134 485 were provided in 1372 state-maintained institutions. Excluding admissions to convalescent homes and old people's homes, 969 937 patients received 29 831 482 days of in-patient care during 1961. The total number of beds was distributed as follows:

	Category and number	Number of beds
General hospitals	199	52 541
Rural hospitals	20	914
Tuberculosis hospitals	44	4 524
Maternity hospitals	10	1 007
Paediatric clinics	11	1 177
Psychiatric clinics	37	26 000
Ophthalmological clinics	4	334
Cancer hospital	1	72
Orthopaedic clinics	5	600
Rheumatism hospitals	2	112
Epilepsy hospitals	2	717
Neurology hospitals	2	333
Physical therapy hospitals	7	656
Convalescent homes	90	6 383
Old people's homes	1 157	78 228
Institutions for alcohol addicts .	3	57
Clinics for neurosis	4	161
Clinics for asthma	4	264

Medical and Allied Personnel

In 1963, the Netherlands had 13 636 physicians, equivalent to one for 878 inhabitants. There were also:

Dentists	2 722
Pharmacists	900
Fully qualified midwives	787
Fully qualified nurses	15 000
Veterinarians	1 257

Immunization Services

The following immunization procedures were carried out in 1962:

Diphtheria, tetanus and whooping-cough	706 530
Poliomyelitis	295 187
Smallpox	199 882
BCG	16 445

Specialized Units

Health care for mothers and children was provided in 1964 in 180 pre-natal maternity aid centres, in 2700 child health units for infants under one year and in 2000 units for children under five years. In 1963, 173 045 infants under one year and 161 628 children aged between one and five years received health services and made 1 691 703 and 653 405 attendances respectively. Practically all deliveries were attended by a doctor or qualified midwife. There were

190 school health units which looked after 2.6 million schoolchildren under 15 years of age—99 per cent. of the total school population.

In 1964 there were 11 independent medical rehabilitation centres and 400 hospital rehabilitation departments. There were 38 out-patient clinics for psychiatric diseases which gave treatment to 26 000 new out-patients. Other specialized units included 51 district centres for the control of tuberculosis, 17 centres for venereal disease control, a cancer registration centre, 13 cancer centres, 36 audiological centres, 64 rheumatism centres, 20 rehabilitation centres and 18 public health laboratories.

Environmental Sanitation

In 14 communities with a population of 100 000 and over, all inhabitants had piped water to their dwellings. In 227 communities with a population of between 10 000 and 100 000, 99 per cent. had piped water to their dwellings and one per cent. had to rely on community or private wells. In 524 communities with a population of between 2000 and 10 000, 97 per cent. had piped water to their dwellings and three per cent. had water from community or private wells. In 213 communities with a population of under 2000, 95 per cent. had piped water to their dwellings and five per cent. had to rely on community or private wells.

Sewerage systems served 8.2 million inhabitants and sewerage and sewage treatment facilities four million.

NORWAY

Population and Other Statistics

At the last census, taken in November 1960, the population of Norway was 3 591 234. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	3 609 800	3 638 919	3 666 539	3 694 000
Number of live births	62 555	62 254	63 290	65 313
Birth rate (per 1000 population)	17.3	17.1	17.3	17.7
Number of deaths	33 313	34 318	36 850	34 928
Death rate (per 1000 population)	9.2	9.4	10.1	9.5
Natural increase (per cent.) .	0.81	0.77	0.72	0.82
Number of infant deaths . .	1 117	1 104	1 068	1 100
Infant mortality rate (per 1000 live births)	17.9	17.7	16.9	16.8
Number of maternal deaths .	17	13	13	15
Maternal mortality rate (per 1000 live births)	0.27	0.21	0.21	0.23

Of the 36 850 deaths recorded in 1963, the main causes were: arteriosclerotic and degenerative heart diseases (9661), malignant neoplasms (6305), vascular lesions affecting the central nervous system (5730), senility without mention of psychosis, ill-defined and unknown causes (2335), pneumonia (2140), accidents (1872, including 405 in motor-vehicle accidents), hypertension (926).

The communicable diseases most frequently reported in 1963 were: measles (12 346), whooping-cough (9630), gonorrhoea (3160), scarlet fever (3099), tuberculosis, all forms, new cases (1192), infectious hepatitis (240), syphilis, new cases (169), poliomyelitis (62).

Organization of the Public Health Services

Since 1913, the Ministry of Social Affairs has been responsible for health services, and in 1945 two sep-

arate offices—one dealing with the legal aspects and the other with the medical aspects of health services, were amalgamated to form the present Directorate of Health Services, with a medical doctor as chief administrator. The Director-General of Health Services plans the budget for the entire civilian health services. He has wide powers of appointment, and is the chief government consultant on all matters requiring specialized medical knowledge. In 1964 the Directorate had eight bureaux dealing respectively with medical personnel, finance and employment, tuberculosis, psychiatry, hygiene, pharmacy, dentistry and hospitals. In Norway most of the general hospitals are owned and operated by the provinces or communes or by voluntary organizations. The Government is directly responsible only for the university clinics.

Norway is divided into 20 provinces, 18 of them rural, while the two largest cities, Oslo and Bergen, constitute independent provinces. Administration of public health in the provinces is the responsibility of the Provincial Public Health Officer. He is appointed by the King in council and represents the national Directorate of Health Services in the area. His main duty is to superintend health services within the province and supervise the carrying-out of the laws and regulations on medical practice and environmental sanitation. He is the immediate superior of all district and town doctors and he exercises supervision of the activities of doctors in private practice, dentists, midwives and other medical personnel working within his area. He acts in an advisory capacity to public health doctors and local boards of health and is the adviser to the provincial government on all health matters.

The provinces are divided into public health districts consisting of one or more communes. There are 366 such districts, whose actual size varies greatly. Each of the districts has one or more district doctors (public health officers). They are appointed by the Ministry of Social Affairs.

Every commune has a board of health which is elected by the Communal Council. Its chairman is the district public health doctor. The local board of health is not subject to the control of the mayor or chief officer of the commune. The main responsibilities of the local board of health are to prevent the spread of epidemic diseases and to deal with the sanitary problems of the commune. They also have to see that laws and regulations governing health and sanitation are obeyed. There is a tendency towards uniformity in communal health regulations. They usually contain sanitary clauses, regulating such matters as the purity of drinking-water supplies, drainage and sewerage, housing and work-place standards.

Health Insurance

The Health Insurance Scheme now includes all persons resident in Norway, with very few exceptions. Those covered by the Act are insured either as independent members or as family members. All insured persons are entitled to the following benefits: medical treatment, including the extraction of teeth and treatment by a dentist on account of illness; midwifery assistance; psychotherapeutic treatment prescribed by a doctor; treatment and care at a hospital, sanatorium or maternity clinic; certain listed medicaments of major importance; treatment by a speech therapist or a physical therapist when it is prescribed by a doctor. The scheme also covers transport expenses. In respect of employees the Health Insurance Scheme automatically includes the right to a daily allowance during illness. The Health Insurance Scheme is financed by means of premiums paid by its members, by contributions from employers, the State and the municipalities. Persons included in the Health Insurance Scheme benefit also from the schemes for rehabilitation aid and for disability benefits.

Hospital Services

In 1963, Norway had 1215 hospitals and establishments for in-patient care, providing 59 277 beds (16.2 per 1000 population). During the year, 429 758 patients were admitted to the hospitals and received 11 340 211 days of in-patient care. The total of 59 277 beds was distributed as follows:

Category and number	Number of beds
General hospitals	110
Rural hospitals	97
Tuberculosis hospitals	31
Maternity hospitals	45
Psychiatric hospitals	21
Chronic diseases hospitals	40
General surgery hospitals	8
Hospitals for cerebral-paretics	8
Cancer hospital	1
Rheumatic diseases hospitals	7
Hospital for epileptics	1
Orthopaedic hospital	1
Leprosarium	1
Physical therapy clinics	4
Old people's homes	807
Institutions for alcohol addicts	32
Institution for drug addicts	1
	23 636
	885
	36

Out-patient care is generally the responsibility of the private practitioners and specialists, who are allowed to refer their patients to the hospital for X-ray and laboratory examinations.

Medical and Allied Personnel and Training Facilities

In 1963, Norway had 4408 doctors, including retired and non-practising doctors. The doctor/population

ratio was one to 830. Other health personnel included:

Dentists	2 618*
Pharmacists	1 266
Fully qualified midwives	936
Fully qualified nurses	10 588
Veterinarians	632*
Physical therapists	1 300

* Including those who had retired or who were not in practice.

The state training centre for certain categories of health personnel was established in 1962. The schools of nursing, numbering 30, became independent administrative units in 1962 and are not attached to hospitals. A new category of health personnel—practical nurses—has been trained since 1963. Their training is partly theoretical and partly practical. There were 24 schools for training practical nurses in Norway by the end of the period under review.

Communicable Disease Control and Immunization Services

Since the introduction of poliomyelitis vaccination, the incidence of this disease has been rapidly decreasing. The number of registered cases of venereal diseases has been rising in recent years. The number of new cases of bacillary tuberculosis is steadily decreasing; in 1963, there were 25 male and ten female cases per 100 000 population, which represents a reduction of about 50 per cent. since 1956. This decrease in the tuberculosis incidence is mainly due to increasing individual resistance as a result of improvements in the standards of living, proper treatment of cases, mass photofluorography and mass BCG vaccination. One-third of the total population had been vaccinated by the end of the period under review. Immunizing procedures against smallpox, diphtheria, tetanus and whooping-cough were intensified during the period.

Chronic and Degenerative Diseases

Cardiovascular diseases have become a growing public health problem. The death rates from these diseases increased continuously during the decade 1955-1964—the female death rate by 3 per cent. and the male death rate by 20 per cent. This increase was more pronounced in rural districts than in towns. The overall number of deaths from malignant neoplasms has remained constant. The cancer society is carrying out a research project on early detection of cervical cancer and cancer of the breast and a nation-wide programme is planned. In 1964, voluntary organizations collected about six million Norwegian kroner for research and assistance in the treatment of patients suffering from rheumatic diseases.

Specialized Units

There were 1400 health care units for infants and pre-school children in 1964, 300 of which also provided services to pregnant women. Pre-natal care is also given by private practitioners. In 1963, 97 per cent. of all deliveries were institutional. Almost all home deliveries were conducted either by a doctor or a district midwife. The great majority of schoolchildren have access to school health services. Norway had three independent centres for medical and vocational rehabilitation in 1964, which were attended by 926 new patients. There were also 105 chest clinics. In 1964, 1659 industrial and business establishments provided medical and health services to their 276 900 workers and employees under the occupational health services system.

Major Public Health Problems

The major health problems are those related to the growing importance of the chronic and degenerative diseases. Another very serious health problem is the shortage of health and medical personnel: doctors, hospital nurses and public health nurses. The unequal geographical distribution of doctors results in an acute shortage of doctors in the remote areas of the country.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The establishment of family health centres has been continued during the period under review. These centres give advice on the medical and social aspects of family life. Since 1963 the operational cost of these centres has been partly covered by a refund from the national health insurance scheme. The Abortion Act was passed in 1960 and came into force in 1964.

During the period under review a central register for tuberculosis has been established. It aims at the rationalization of case-finding through X-ray examinations in statistically selected groups with a high rate of tuberculosis incidence. In order to concentrate and rationalize the medical care of tuberculosis patients, chest departments have been set up in certain central hospitals.

The Acts relating to rehabilitation aid and the disability benefits scheme came into force in 1961. New legislation on the operation of pharmacies and relating to medical goods and poisons has been passed. A poison control centre was established in 1961. Regulations for the supply of hearing apparatus came into force in 1964. A board of air pollution control

has been established. It is administratively independent of the health services and is linked to the Ministry of Industry.

International Collaboration

Norway is collaborating with other Scandinavian countries in respect of pharmaceutical legislation and control of pharmaceutical products. A uniform pharmacopoeia for the Scandinavian countries, the *Pharmacopoea Nordica*, has been prepared and is now

authorized. Norway has participated in the health activities of the Council of Europe and also collaborates with WHO and other specialized agencies.

Government Health Expenditure

In 1963 the total expenditure from national health insurance funds, excluding cash benefits, amounted to 796 million kroner. This was equivalent to an expenditure of 217 kroner per head, as compared with 173 kroner per head in 1961.

POLAND

Population and Other Statistics

At the last census, taken on 6 December 1960, the population of Poland was 29 775 500. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	29 965 300	30 323 900	30 690 900	31 161 300
Number of live births . . .	627 624	599 505	588 235	562 945
Birth rate (per 1000 popula-	20.9	19.8	19.2	18.1
Number of deaths	227 759	239 199	230 072	235 879
Death rate (per 1000 popula-	7.6	7.9	7.5	7.6
Natural increase (per cent.) .	1.33	1.19	1.17	1.05
Number of deaths, 1-4 years	4 630	4 051	3 795	...
Death rate, 1-4 years (per 1000				
population at risk)	1.7	1.5	1.5	...
Number of infant deaths . .	33 966	32 867	28 672	26 879
Infant mortality rate (per 1000				
live births)	54.1	54.2	48.7	47.2
Number of maternal deaths .	237	224	211	275
Maternal mortality rate (per				
1000 live births)	0.4	0.4	0.4	0.5

Of the 235 879 deaths recorded in 1964 the main causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (37 521), malignant neoplasms (37 108), senility without mention of psychosis, ill-defined and unknown causes (27 655), tuberculosis, all forms (12 428), accidents (11 177, including 2208 in motor-vehicle accidents), pneumonia, (10 939), congenital malformations, birth injuries, post-natal asphyxia and atelectasis and other diseases peculiar to early infancy and immaturity (10 519), vascular lesions affecting the central nervous system (9110), hypertension (5397), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (2924).

The communicable diseases most frequently notified in 1964 were: influenza (776 663), measles (131 534), infectious hepatitis (124 322), scarlet fever and streptococcal sore throat (63 815), whooping-cough (29 391),

dysentery, all forms (8463), typhoid and paratyphoid fevers (1565), meningococcal infections (928), diphtheria (749).

Organization of the Public Health Services

The protection of the health of the people of Poland is guaranteed by the State. The agency through which these responsibilities are discharged is the Ministry of Health and Welfare, which in 1960 replaced the Ministry of Health, established in 1945. The Minister is assisted by four Vice-Ministers. At the next level are a directorate and a number of departments concerned with hygiene and epidemiology, prevention and medical care, maternal and child health, pharmaceutical services, social welfare, rehabilitation, medical education and research, paramedical education, statistics, equipment and supplies, international relations, administration and budget. The Department of Hygiene and Epidemiology is of special interest. It is generally responsible for sanitary and epidemiological services throughout the country, using for the purpose the network of laboratories which it has established in relation to the health departments of the voivodships and of certain districts. This pattern of health organization applies with modifications at the level of the 17 voivodships and five cities of voivodship status into which the country is divided for administrative purposes. In the voivodships the control of the health and welfare services rests with the People's Councils, operating through a department of whole-time professional and technical health workers. The voivodships in their turn are divided into 322 rural and 74 urban districts, each with its own local Department of Health and Welfare, under the supervision of the District People's Council.

In general terms, the functions of the Ministry of Health and Welfare consist in the establishment of lines of general health policy, in the co-ordination of

the activities of the health departments and the general supervision of the hospitals and the health and welfare services which they manage. The Ministry also has a specific responsibility for the ten academies of medicine, for the Institute of Advanced Medical Studies and for the 14 institutes of medical research. It is thus intimately concerned with medical and other professional education in the health field. Responsibility for the training of the middle-grade health personnel, including nurses, midwives, laboratory and other technicians, rests with the voivodships, and is carried out in their hospitals and other institutions. Since 1961 this training has been standardized in accordance with the principles governing professional education in the various professions.

The health departments of the voivodships and the districts manage, co-ordinate and supervise the individual components of the system of health facilities—hospitals, specialized polyclinics, general polyclinics, dispensaries, health centres, health posts, industrial health units, sanitation and epidemiological stations with their respective staffs, through which the people of Poland obtain their comprehensive health and medical care. Since 1945, and more particularly since 1960, there has been an increasing trend towards the decentralization of executive functions by the Ministry and their delegation to the health authorities at the local levels. But the Ministry continues to determine policy, to give guidance and to exercise its general supervisory functions.

Hospital Services

In 1963, Poland had a total of 2198 hospitals and other hospital establishments, with 261 987 beds (8.5 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	516
Mental hospitals	38
Tuberculosis sanatoria and hospitals	111
Paediatric hospitals	22
Infectious diseases hospitals	21
Obstetrical and gynaecological hospitals	15
Rehabilitation and physical therapy hospitals	26
Chronic diseases hospitals	95
Other specialized hospitals	22
Medical centres	954
Old people's homes	155
Institutions for the mentally deficient	149
Preventoria for tuberculous children	57
Convalescent homes	6
Establishments for detoxication of alcoholics	5
Establishments for the blind and the handicapped	6
	540

Out-patient care was provided in 1964 by 3362 polyclinics not attached to hospitals, 2308 health

centres, 2194 industrial medicine services, 1953 health posts served by physicians, feldshers and nurses, 2270 rural maternity centres, 7658 medico-dental clinics, 238 dental co-operatives and 187 mobile dental units. This network of out-patient facilities was supplemented by 120 hospital out-patient departments. In 1964, 36 978 100 consultations were given in these establishments.

Medical and Allied Personnel and Training Facilities

On 31 December 1963 the total number of registered physicians in Poland was 35 234, equivalent to one doctor to 880 inhabitants. There were also 6181 feldshers. Other health personnel included:

Dentists	10 611
Dental technicians	3 565
Pharmacists	9 132
Pharmaceutical assistants	1 172
Pharmaceutical technicians	2 242
Fully qualified midwives	10 051
Fully qualified nurses	57 734
Nurse aides	10 158
Physical therapists	832
Sanitary inspectors and instructors in hygiene	2 622
X-ray technicians	2 333
Laboratory technicians	6 293
Dietitians	653
School hygienists	763
Electro-medical engineers	67

Approximately 2900 doctors graduate annually from the ten medical faculties in Poland. Immediately after qualification they are required to work for two years in hospitals, but they have the advantage of rotating between the hospitals proper and the polyclinics.

Communicable Disease Control and Immunization Services

There are certain diseases such as diphtheria which during the decade 1955-1964 have come under almost complete control; others, such as typhoid fever, though greatly diminished, still persist; others again, such as measles, whooping-cough and influenza, are liable to cause large epidemics from time to time. In the case of diphtheria the contrast between 1955, when 37 757 cases were notified, and 1964, when the total was 749, is due to the vaccinations carried out in the intervening period. Typhoid also became less prevalent but the decline was not of the same degree; there were 6201 notified cases in 1955 and 1565 in 1964. Two other diseases in which control would appear to have been established are poliomyelitis and trachoma. There are, however, three conditions which cause some concern, namely the venereal diseases, infectious hepatitis and tuberculosis. As in

many other countries, both gonorrhoea and syphilis are beginning to increase in incidence, but so far the increases have not been dramatic. In the case of infectious hepatitis the situation is very different. In 1960, 76 193 cases were notified. The total fell to 57 028 in 1961, to rise again to 75 944 in 1963, and 124 322 in 1964. Environmental improvements, better food control and health education, preventive action using gamma-globulin in children and the control of instrument sterilization would appear to be the methods at present available to combat this problem.

Tuberculosis, however, remains one of Poland's major problems, though here again there has been great improvement during the decade. It ranked fourth in the causes of mortality in 1964, even though the specific death rate for the disease fell from 51 per 100 000 population in 1956 to 40 in 1964, and the new case rate per 100 000 from 327 in 1956 to 220 in 1963. There were no fewer than 450 000 known active pulmonary cases in 1964. The campaign against the disease is directed by the Tuberculosis Institute. The measures it advocates and uses are BCG vaccination of the newborn, revaccination of school entrants and adolescents, mass radiography, hospitalization of newly discovered cases, and subsequently domiciliary treatment under a regime of antituberculosis drugs. All the services for out-patient care and supervision are also brought into operation.

In the control of many of the communicable diseases immunization procedures have been used extensively. In 1962 they included 788 167 primary smallpox vaccinations, and 873 736 revaccinations, 5 618 581 typhoid and paratyphoid inoculations, over two million immunizations against diphtheria, whooping-cough and tetanus. Protection against poliomyelitis was given to 643 650 children by injections with Salk vaccine, while more than six million received doses of Sabin oral vaccine, types I and II. A total of 518 055 infants under 15 days old were given BCG vaccine; at other ages nearly 1 100 000 individuals were vaccinated or revaccinated with BCG.

Chronic and Degenerative Diseases

Just as the Tuberculosis Institute takes an active part in the campaign against tuberculosis, the Institute for Rheumatology, the Central Dispensary for Cardio-vascular Disease and the Cancer Institute are called upon to advise as to the principles on which the campaigns against these several groups of diseases are to be conducted. They advise as to both diagnostic and therapeutic measures. In the case of cancer a comprehensive system of control is being elaborated along the lines of detection, treatment and prevention. There are now many cancer detection centres, and

particular attention is being paid to the diagnosis of cervical cancer in women. Specialized units for radiotherapy are being increased in number, as are the beds for the treatment of cancer patients and the laboratories for cytodiagnosis.

Great emphasis is being placed on the provision of out-patient facilities in the psychiatric field. The number of clinics increased from 157 in 1960 to 235 in 1964, and the number of consultations from 598 212 to 937 345 during the same period. Mention must be made of the efforts which are being made to help alcoholics. There are now 364 centres where they can receive advice. In addition, other facilities such as night sanatoria and centres where treatment by modern methods is available are being provided to an increasing extent. In the various campaigns against these social diseases the welfare services and welfare organizations are becoming more active every year.

Specialized Units

In 1964 there were 4913 maternal and child welfare centres at which prenatal care was given either by doctors or midwives to 693 100 pregnant women. Home visits were also paid to 133 300 pregnant women. A total of 536 100 births (95 per cent. of all confinements) took place under the organized obstetric services. In the same year 428 200 infants and 445 900 children aged between one and two years attended the centres, making altogether 4 149 900 attendances. Over half a million infants were visited in their homes by midwives or nurses. There were 5672 school health units which gave health supervision to 6 667 500 schoolchildren (95 per cent. of the school population).

At the 7658 permanent medico-dental clinics and 187 mobile dental units over 32 million treatments were given and 206 200 persons were provided with dentures. There were 249 psychiatric out-patient clinics, at which over 940 000 consultations were given.

The arrangements for health care in industry are very extensive. There were in all 2194 health-care units in factories and similar establishments, at which, apart from emergency and routine treatments, over 3 100 000 examinations—955 000 pre-employment medicals and 2 014 000 periodic checks—were carried out. These services are available to approximately 43 per cent. of the working population.

In addition to the foregoing there are a large number of specialized dispensaries which are attended by patients suffering from such conditions as tuberculosis, cancer, the rheumatic disorders, eye diseases and the venereal diseases.

Finally there were 426 sanitary and epidemiological stations. In 161 of these stations, public health

laboratories have been established which in 1964 carried out 6.7 million examinations. In addition, hospital clinical laboratories carried out over 23 millions investigations.

Major Public Health Problems

Despite the great improvement in the health situation in Poland that has been achieved during the decade 1955-1964, much still remains to be done in several of the branches of the country's health services. The rehabilitation services should be extended and enlarged in scope. There are further improvements to be made in the pharmaceutical services, for example in the distribution of drugs to the public, the raising of the quality of drugs and the lengthening of the period of their therapeutic efficiency, and particularly in regulating the production of the pharmaceutical industry in conformity with the requirements of the Ministry of Health and Welfare.

As to the protection of the health of the population, there are still a number of continuing problems and needs, most of which have already been mentioned. But they can be summarized briefly as follows:

- (a) reduction of infant mortality throughout the country, and levelling-off of the differences between the various voivodships;
- (b) control of tuberculosis;
- (c) control of communicable disease in general and of infectious hepatitis in particular;
- (d) control of venereal disease;
- (e) amelioration of environmental conditions, improvement in water supplies, prevention of atmospheric pollution and limitation and reduction of noise;
- (f) control of chronic and degenerative diseases—cancer, particularly in women, cardiovascular disease, rheumatism, mental and nervous disorders—and the application of the results of research to their prevention and treatment; and dental care;
- (g) reduction of perinatal mortality;
- (h) physical and mental development of children and adolescents;
- (i) care of children with physical and mental disabilities;
- (j) extension of the system of medical care on an ambulatory and domiciliary basis throughout the country, with emphasis on the needs of the rural areas.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Amongst the factors which directly influenced the national health during the decade are a small group of legislative enactments dealing respectively with tuberculosis, other communicable diseases, the provision of water supplies and their protection against pollution and the improvement of environmental sanitation. Other legislation, which is pending, deals with the mental health services and the reform of medical education. In other fields of government policy measures have been taken which will indirectly benefit the health of individuals and of the community. Amongst these are the family welfare legislation, and the extensive programme of primary school construction. With the additional schools so provided it will be possible to extend the period of primary education to eight years.

One other contributory cause of the improvement in the health situation has been the availability year by year of an increasing number of health services personnel. The growth in medical manpower has been particularly significant. In 1955 there were no more than 18 373 physicians in Poland, equal to one to 1500 population. The totals for 1957, 1960 and 1963 were respectively 22 405 (one to 1272), 28 703 (one to 1036), and 35 234 (one to 880).

National Health Planning

Planning for social and economic development in Poland is initiated by the Council of Ministers. This body issues directives as to the broad objectives of the plan, and the budgetary limitations. Associated with the Council is the permanent Planning Commission which communicates the directives to the ministries concerned. In the case of national health planning, the Ministry of Health and Welfare receives these instructions and transmits them to the planning unit within the Ministry, which proceeds to construct a national health plan, based on the known needs as regards health services, and built up by applying certain norms of provision to these needs. The norms are usually stated in terms of varying numbers of the population. The provisional plan is discussed with the People's Councils at the several administrative levels, and account is taken of their particular requirements and of such modifications as they may suggest. The plan as amended is returned to the Planning Commission for co-ordination with other sectoral plans. It is then transmitted to the Council of Ministers and, if approved by them, is returned through the Planning Commission to the Ministry for implementation.

This is the planning process in outline, but it requires some amplification. There are three forms of plan—the perspective or long-term, which covers a period of 20 years; the quinquennial, and the annual. In the case of the perspective health plan broad objectives are laid down which it is aimed to reach by the end of the 20-year period. They are in effect projections of the total numbers of doctors, hospitals, hospital beds, health centres, dispensaries, etc., and are based on data which have been collected mainly by research institutes. These perspective plans are built up of five-year plans which are considerably more detailed and prescribe the targets which should be reached year by year during the quinquennium. The targets also are more specific. For example, in the case of hospital beds, the allocation to general hospitals, mental hospitals, tuberculosis sanatoria, will be laid down. The annual plans are again more precise and give full budgetary details as to cost.

For the period 1966-1970 the following norms of provision have been adopted:

one general practitioner for every 3000-4000 inhabitants;

one paediatrician for 6000-8000 inhabitants, varying according to the local demographic situation;

one gynaecologist for 10 000-12 000 inhabitants.

Medical and Public Health Research

A large amount of medical and scientific research is carried out in Poland through a number of agencies. There are to begin with the ten academies of medicine and the 14 institutes of medical research, which derive their support from the Ministry of Health and Welfare. The institutes are each engaged on research in specific fields—haematology, tuberculosis, pharmacology, cancer, psychoneurology, maternal and child health, industrial health, etc.

The fields of research of interest to the committees and institutes of the Polish Academy of Sciences cover such subjects as virology, diseases of the cardiovascular system, psychology and psychiatry, the physiological problems raised by new industrial techniques, and new pharmacological preparations.

In the ten academies of medicine there are 474 professorial chairs and a total staff of 4808 scientific

workers, of whom 523 are research scientists. In the institutes of medical research and in the Central Medical Library there are 35 professors and 58 lecturers among the 1158 scientific workers employed. Between 1961 and 1964 the financial allocation of the Ministry of Health and Welfare for research amounted to a total of approximately 1810 million zlotys.

International Collaboration

In addition to discharging its obligations under the International Sanitary Regulations and participating actively in many aspects of the work of the World Health Organization, Poland is also involved with a number of adjacent and more distant countries in other forms of international collaboration. It is felt that the co-operation of governments and their constituent ministries in the scientific and cultural fields is one of the most fruitful methods of achieving good international relations. Arrangements for the reciprocal exchange of information regarding communicable disease have been made by agreement with the Ministers of Health of Bulgaria, Czechoslovakia, Denmark, Eastern Germany, Hungary, the Netherlands, Romania, Sweden and Yugoslavia.

With regard to the developing countries, between 1961 and 1964 Poland sent 63 doctors to give help in the operation of the health services of five countries. During the same period more than 1000 individual workers in the health field visited Poland as fellows, to attend seminars, or to take part in scientific research.

Government Health Expenditure

In 1963, total general government health expenditure on current account amounted to 18 900 million zlotys. This sum includes 3100 million zlotys paid out in cash benefits by social insurance agencies but not all expenditure on teaching and research or charges levied on persons not covered by one or more of the social insurance schemes. Expenditure on such services as sewage and refuse disposal are also excluded.

Expenditure on capital account amounted to 3500 million zlotys, of which 1500 million zlotys were for projects included in plans for the development and extension of health services.

PORTUGAL

Population and Other Statistics

At the last census, taken in December 1960, the resident population of Portugal was 8 889 392. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	8 932 000	9 008 400	9 074 400	9 143 300
Number of live births	217 516	220 200	212 152	217 136
Birth rate (per 1000 population)	24.4	24.4	23.4	23.7
Number of deaths	99 590	96 864	98 011	96 878
Death rate (per 1000 population)	11.1	10.8	10.8	10.6
Natural increase (per cent.)	1.33	1.36	1.26	1.31
Number of deaths, 1-4 years	6 800	5 305	4 735	4 662
Death rate, 1-4 years (per 1000 population at risk)	9.4	7.2	6.6	6.5
Number of infant deaths	19 308	17 300	15 510	14 974
Infant mortality rate (per 1000 live births)	88.8	78.6	73.1	69.0
Number of maternal deaths	258	257	186	183
Maternal mortality rate (per 1000 live births)	1.2	1.2	0.9	0.8

Of the 96 878 deaths recorded in 1964 the main causes were: vascular lesions affecting the central nervous system (14 064), senility without mention of psychosis, ill-defined and unknown causes (13 990), arteriosclerotic and degenerative heart diseases (10 434), malignant neoplasms (9907), pneumonia (7359), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (6117), accidents (4023, including 1244 in motor-vehicle accidents), tuberculosis, all forms (2912), cirrhosis of the liver (2675), bronchitis (2542), hypertension (2165).

In 1963 the communicable diseases most frequently notified were: tuberculosis, all forms, new cases (12 778), diphtheria (1951), whooping-cough (1506), typhoid and paratyphoid fevers (1331), scarlet fever (875), meningococcal infections (856), trachoma (342), infectious hepatitis (336), gonorrhoea (296), poliomyelitis (219).

Organization of the Public Health Services

In 1958, the Ministry of Health and Welfare replaced the former Under-Secretariat of State for Social Welfare, established in the Ministry of the Interior. The Ministry of Health and Welfare comprises the following main divisions: the Higher Council of Health and Welfare, the Co-ordinating Council, the Directorate-General of Health, the Directorate-General of Hospitals, the Directorate-General of Welfare, the Welfare Inspectorate. A planning section has also

been established. All activities relating to health, welfare and social affairs are co-ordinated by the Social Council, which is inter-ministerial. The Higher Council of Health and Welfare is an advisory body. The Directorate-General of Health comprises the following technical divisions: sanitation, prevention of infectious and social diseases, international quarantine, rural health and malaria control, food hygiene and bromatology, industrial and occupational health, medical and auxiliary practice, pharmaceutical and drug control and administrative services. The Directorate-General of Welfare comprises the co-ordinating institutes which function as its central technical services, the regional, subregional and local commissions and the establishments and services in the field. This Directorate-General has also administrative and technical control over private welfare establishments.

At the regional level, there are regional health authorities in the chief towns of the districts, bodies representing the national institutes under the Directorate-General of Welfare, hospitals and provincial social welfare committees. At the local level, the health organization is based on the zone medical officer and the communal medical officers.

Portugal has also a system of social insurance, through which personal medical care, pharmaceutical services and hospital treatment are provided for three million of the population.

Hospital Services

In 1963, the total number of hospitals and other health institutions providing in-patient care was 605, with 52 493 beds (equivalent to 5.8 beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	477
Tuberculosis hospitals	51
Infectious diseases hospitals	5
Maternity hospitals	29
Paediatric clinics	3
Psychiatric hospitals	23
Ophthalmological clinics	3
Cancer hospital	1
Orthopaedic hospitals	5
Heart hospitals	2
Physical therapy hospitals	2
Leprosarium	1
Thermal establishments	3

Out-patient services were provided at 265 hospital out-patient departments, 36 dispensaries and 134 medical aid posts, and by 54 mobile health units. During 1963, 2 637 000 attendances were recorded.

The voluntary and charitable associations, some of them receiving state subsidies, play a very important role in Portugal in providing medical care. The Ministry of Health is responsible for co-ordinating, supervising and directing the medical and social activities carried out by these voluntary agencies.

Medical and Allied Personnel

In 1963, 7541 physicians, including 382 stomatologists, were registered in Portugal. The doctor/population ratio was thus one to 1200. There were also:

Dentists	100
Dental technicians	527
Assistant dental technicians	331
Pharmacists	974
Pharmaceutical assistants	1 334
Fully qualified midwives	943
Fully qualified nurses	3 524
Veterinarians	360
Sanitary engineers	38*
Sanitary Inspectors	157*
Sanitary inspectors/health visitors	83*
Laboratory technicians	77*
X-ray technicians	118*

* In government service.

Communicable Disease Control and Immunization Services

Control of communicable diseases is carried out by the local health authorities and the communal medical officers and is effectively based on vaccination campaigns against smallpox, diphtheria, whooping-cough, tetanus and tuberculosis. Vaccination against smallpox, diphtheria and tetanus is compulsory. A poliomyelitis vaccination campaign covering children under five years of age has also been organized.

The leprosy control services were reorganized in 1947. They are based on a leprosy colony where medico-surgical treatment is provided. In 1964, 11 new cases were reported. Typhoid fever continues to be present in some rural areas; TAB vaccination and improvement of the water-supply system should result in a decrease of this disease in the areas most affected. The preparatory work for the consolidation phase of the malaria eradication programme started in 1959. The maintenance phase was expected to start in 1966. Tuberculosis mortality declined from 63.2 per 100 000 inhabitants in 1953 to 31.8 in 1964.

In 1963, the following immunization procedures were carried out:

Tetanus	800 531
Diphtheria	502 247
Smallpox	367 892
Whooping-cough	360 563
BCG	261 152
Poliomyelitis (Salk vaccine)	35 466
Typhoid and paratyphoid fevers	34 699
Cholera	3 110

Specialized Units

The protection of mothers and children is the responsibility of the Maternity Institute, which co-ordinates the arrangements for the medical care and social welfare of mothers and children. Maternal and child health work is, to a great extent, carried out by private associations which receive state assistance and which are placed under state control.

In 1963, 579 pre-natal and child health centres gave services to 58 691 pregnant women and 156 902 children up to five years of age. Domiciliary visits were paid to 61 200 pre-school children. A total of 109 529 deliveries (about 50 per cent. of all births) were attended by a doctor or qualified midwife. Four independent medical rehabilitation centres gave services to 7219 new patients and 2775 new patients attended 153 hospital rehabilitation departments.

In 1964, 231 school health service centres looked after 94 061 schoolchildren. Dental treatment was provided to 15 509 patients at eight dental health units. Ten out-patient clinics for psychiatric diseases gave services to nearly 13 000 new patients.

In 1964 other specialized units included 198 tuberculosis dispensaries, where 13 601 new patients were treated, 35 venereal disease clinics with 12 715 new patients, 30 trachoma clinics with 48 551 new patients and two leprosy clinics with 365 new patients, of whom, however, only 11 had leprosy. There were 42 public health laboratories which carried out 324 083 examinations.

Government Health Expenditure

In 1963, the total general government consumption expenditure was 12 248 million escudos, of which 819.3 million escudos (i.e., 6.7 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 90.3 escudos per head on these services. About five per cent. of the total government expenditure on health services is provided at the central level, the remainder being financed by intermediate and local authorities.

ROMANIA

Population and Other Statistics

At the last census, taken in February 1956, the population of Romania was 17 489 450. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	18 566 932	18 680 721	18 813 131	18 927 081
Number of live births	324 859	301 985	294 886	287 383
Birth rate (per 1000 population)	17.5	16.2	15.7	15.2
Number of deaths	161 936	172 429	155 767	152 476
Death rate (per 1000 population)	8.7	9.2	8.3	8.1
Natural increase (per cent)	0.88	0.70	0.74	0.71
Number of deaths, 1-4 years	4 541	3 526	3 157	2 971
Death rate, 1-4 years (per 1000 population at risk)	3.1	2.6	2.5	2.4
Number of infant deaths	23 190	18 196	16 270	13 975
Infant mortality rate (per 1000 live births)	71.4	60.3	55.2	48.6
Number of maternal deaths	377	322	251	230
Maternal mortality rate (per 1000 live births)	1.2	1.1	0.9	0.8

Of the 155 767 deaths recorded in 1963, the main causes were: arteriosclerotic and degenerative heart disease, chronic rheumatic heart disease and other diseases of the heart (32 446), malignant neoplasms (22 602), vascular lesions affecting the central nervous system (21 893), pneumonia and bronchopneumonia (12 119), hypertension (7152), tuberculosis, all forms (5401), infections of the newborn and other diseases peculiar to early infancy and immaturity (3552), bronchitis (3143), cirrhosis of the liver (3059), nephritis and nephrosis (2239).

During the same year, the communicable diseases most frequently notified were: influenza (200 044), measles (122 374), infectious hepatitis (63 257), whooping-cough (60 481), tuberculosis, all forms, new cases (39 332), bacillary dysentery (17 117), scarlet fever (13 941), gonorrhoea (6733), syphilis, new cases (5053), typhoid and paratyphoid fevers (1247).

Hospital Services

In 1963, Romania had 665 hospitals with a total bed capacity of 124 031 beds (equivalent to 6.6 beds per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	311
Industrial hospitals	80
Rural hospitals	105
Tuberculosis and chest hospitals . . .	90
Infectious diseases hospitals . . .	10
Maternity and gynaecology hospitals	14
	76 033
	5 299
	3 865
	21 179
	2 886
	3 125

Category and number	Number of beds
Paediatric clinics	23
Psychiatric hospitals	14
Chronic diseases hospital	1
Leprology, dermatology and venereology clinics	6
Accident clinic	1
Ophthalmological clinic	1
Cancer hospitals	2
Rheumatism clinics	2
Others	5
	4 887
	4 203
	80
	905
	120
	165
	285
	213
	786

The 2 656 363 patients admitted to these hospitals in 1963 received 39 078 567 days of in-patient care.

In addition to these hospitals there were also medical centres, balneological centres and rest homes, with a total of 87 924 beds, which provided simple forms of medical care. The grand total of 211 955 beds was equivalent to an overall bed/population ratio of 11.3 per 1000.

Out-patient care facilities were available at 413 polyclinics and 3841 district dispensaries, where altogether 83 997 231 consultations and treatments were recorded in 1963.

Medical and Allied Personnel

At the end of 1963, Romania had 25 900 physicians, including 1766 specialists in stomatology. Not included in this total figure are approximately 1000 retired physicians. The doctor/population ratio was one to 730. There were, in addition:

Medical assistants	9 695
Medical aides	4 393
Dentists	655
Dental assistants	415
Dental technicians	1 285
Pharmacists	4 786
Pharmaceutical assistants	1 851
Pharmaceutical technicians	696
Medical obstetric assistants	1 342
Medical obstetric aides	605
Midwives	5 460
Nurses	29 635
Nursing aides	45 254
Sanitarians	4 059
Physical therapists	809
Laboratory technicians	4 699
X-ray technicians	1 354
Other intermediate and auxiliary personnel	4 643

In 1962, there were 2903 veterinarians and 17 sanitary engineers.

Immunization Services

In 1963 the following immunization procedures were carried out:

Poliomyelitis	9 977 376
Tetanus	7 963 349
Typhoid and paratyphoid fevers	3 313 398
Diphtheria	2 546 765
BCG	1 468 439
Smallpox	636 921
Whooping-cough	311 188

Specialized Units

In 1963, obstetrical and gynaecological care was provided through 285 specialized services in polyclinics and 2043 maternity clinics. There were 313 149 pregnant women under medical supervision during the year and 3 384 003 obstetrical and gynaecological consultations were given in the industrial polyclinics and dispensaries. A doctor or qualified midwife attended 95 per cent. of all deliveries. Child welfare services were available at 214 polyclinics; 18 926 849 consultations and treatments were given to children in district dispensaries and 1 474 258 consultations in industrial polyclinics and dispensaries. In addition, 15 070 417 domiciliary visits were paid to children during the year. The school population was served

by 338 school health dispensaries. Dental health services were provided at 388 units in polyclinics and at 528 rural units where altogether 10 923 152 dental consultations and treatments were given. In the mental health field, 1 507 374 psychiatric consultations and treatments were given.

Medical care for workers was available through 91 industrial polyclinics, 623 industrial dispensaries staffed by a doctor and 1341 industrial health stations. A total of 17 674 921 consultations and treatments were given at these establishments. There were also 210 tuberculosis dispensaries, where 2 736 261 consultations and treatments were recorded, and 182 venereal and dermatological dispensaries, where 2 076 346 consultations and treatments were given.

Government Health Expenditure

In 1963, the general government expenditure on health services, excluding capital expenditures financed by central government agencies, was 4114 million lei. This is equivalent to an expenditure of 219 lei per head on these services.

SPAIN

Population and Other Statistics

At the last census, taken in 1960, the population of Spain was 30 903 137, including Ceuta and Melilla, Ifni, the Spanish Sahara and Equatorial Guinea. The population of the Spanish peninsular and the Balearic and Canary Islands was 30 430 698. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	30 558 896	30 816 907	31 077 104	31 339 497
Number of live births	651 558	655 829	668 472	694 625
Birth rate (per 1000 population)	21.3	21.3	21.5	22.2
Number of deaths	262 339	277 522	281 403	272 582
Death rate (per 1000 population)	8.6	9.0	9.1	8.7
Natural increase (per cent.) .	1.27	1.23	1.24	1.35
Number of deaths, 1-4 years	4 743	4 178	4 032	3 286
Death rate, 1-4 years (per 1000 population at risk) .	1.9	1.7	1.6	1.3
Number of infant deaths .	30 106	27 279	27 049	26 311
Infant mortality rate (per 1000 live births)	46.2	41.6	40.5	37.9
Number of maternal deaths .	479	351	396	...
Maternal mortality rate (per 1000 live births)	0.7	0.5	0.6	...

Of the 281 403 deaths recorded in 1963, the main causes were: heart diseases (40 267), malignant neoplasms (39 576), vascular lesions affecting the central nervous system (39 123), senility without mention of

psychosis, ill-defined and unknown causes (33 334), pneumonia (13 322), accidents (9935, including 2620 in motor-vehicle accidents), tuberculosis, all forms (6725), nephritis and nephrosis (5457), cirrhosis of the liver (5401), diabetes mellitus (3373).

The communicable diseases most frequently notified in 1964 were: influenza (548 201), measles (138 387), pulmonary tuberculosis, new cases (7794), typhoid and paratyphoid fevers (7497), scarlet fever (5472), brucellosis (3974), rheumatic fever (2464), bacillary dysentery (1730), diphtheria (1700), trachoma (638).

Organization of the Public Health Services

The national health administration, namely the Directorate-General of Health, is part of the Ministry of the Interior. There are four subdirectorates-general (health, preventive medicine and welfare, pharmacy and veterinary public health services), a general inspectorate of health centres and services, and a technical secretariat which also comprises a division for health surveys and planning. Three national boards have been established—one for tuberculosis control, one for mental health and one for rehabilitation services. Closely associated with the Directorate-General of Health are the following institutes: the National School of Public Health, the National Hospital for Infectious Diseases, the National Cancer

Institute, the National Institute for Leprosy and the National Leprosarium in Trillo and the Spanish Institute for Haematology and Haematherapy.

Hospital Services

In 1964, Spain had 1735 hospitals and establishments for in-patient care, providing 136 853 beds (equivalent to a bed/population ratio of approximately 4.4 per 1000), distributed as follows:

Category and number	Number of beds
General hospitals	39 203
Hospitals for surgery	26 263
Psychiatric hospitals	32 090
Tuberculosis hospitals	19 302
Preventoria, convalescent homes .	2 182
Maternity hospitals	6 105
Leprosaria	1 153
Paediatric hospitals	1 339
Other specialized hospitals	2 488
Homes for the chronically ill . . .	6 728

Out-patient facilities were provided in 447 hospital out-patient departments, 432 polyclinics, 171 health centres, 830 dispensaries, and 1868 medical aid posts, and by 26 mobile health teams.

Medical and Allied Personnel

In 1963, 37 743 doctors were practising in Spain; the doctor/population ratio was one to 820. Other health personnel included:

Dentists	2 916
Pharmacists	12 496
Fully qualified midwives	4 681
Fully qualified nurses	23 238
Assistant nurses	952
Veterinarians	7 253

Communicable Disease Control and Immunization Services

Although malaria has been eradicated from Spain, prophylactic measures are maintained in order to prevent the reintroduction of the disease. During 1963/64 a national poliomyelitis vaccination campaign was carried out. The number of poliomyelitis cases, which used to vary from 1500 to 2000 a year, dropped to 30. Trachoma is still endemic in some provinces in the southern part of the country. A control campaign has been started with a view to eradicating the disease.

During the year 1963/64, a national tuberculosis eradication plan was prepared, providing for tuberculin testing, BCG vaccination, chemotherapy, and the control of bovine tuberculosis. Radiological examinations are carried out by mobile teams, of which

there were 77 in 1965. More than four million radiological examinations were made in 1964.

The following immunization procedures were carried out in 1963:

Poliomyelitis (Sabin vaccine)	4 426 080
Smallpox	744 235
Typhoid and paratyphoid fevers	408 721
Diphtheria (simple and combined)	205 185
BCG	50 296
Tetanus (simple and combined)	21 861
Whooping-cough (simple and combined)	16 012
Yellow fever	6 279
Cholera	3 721

Specialized Units

The infant mortality rate has continued to decrease. Surveys have been undertaken to determine the most important causal factors and the geographical distribution; pilot projects are being organized in the provinces with the highest rates and a project of this kind has been initiated in the Province of Palencia. The problem of prematurity has also received considerable attention. It is estimated that there are annually 30 000 premature babies, mortality among whom is estimated at 50 per cent. There are about 1000 incubators in use, and it is proposed to organize a systematic attack on the problem in 12 provinces.

An interdepartmental commission for the welfare and education of the subnormal has been established. It works in close collaboration with the Directorate-General for Primary Education. Centres for diagnosis and rehabilitation were set up in 1964. In order to determine the importance of the problem of alcoholism, social surveys have been carried out in three regions with different socio-economic characteristics.

Environmental Sanitation

In view of the increasing tourism in Spain, a special service was provided in 1963 for the supply of safe water in those provinces where water-borne diseases are prevalent in endemic and sometimes epidemic form. As a result of these measures, the morbidity rate from typhoid and paratyphoid fevers has been reduced by 50 per cent. Much attention is also given to the handling of food. In 1962, a special atmospheric pollution service was established in the National School of Public Health.

Medical and Public Health Research

Public health research activities are carried out at the National School of Public Health in virology, rickettsiosis, immunology, etc.

SWEDEN

Population and Other Statistics

At the last census, taken in November 1960, the population of Sweden was 7 495 316. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 520 615	7 561 588	7 604 328	7 661 354
Number of live births	104 501	107 284	112 903	122 664
Birth rate (per 1000 population)	13.9	14.2	14.8	16.0
Number of deaths	73 555	76 791	76 460	76 661
Death rate (per 1000 population)	9.8	10.2	10.1	10.0
Natural increase (per cent.)	0.41	0.40	0.47	0.60
Number of deaths, 1-4 years	333	316	277	269
Death rate, 1-4 years (per 1000 population at risk)	0.8	0.8	0.7	0.6
Number of infant deaths	1 647	1 655	1 735	1 744
Infant mortality rate (per 1000 live births)	15.8	15.4	15.4	14.2
Number of maternal deaths	22	14	30	24
Maternal mortality rate (per 1000 live births)	0.21	0.13	0.27	0.20

Of the 76 661 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart diseases (23 497), malignant neoplasms (14 666), vascular lesions affecting the central nervous system (9262), pneumonia (3436), all accidents (3414, including 1340 in motor-vehicle accidents), hypertension (2275), suicide and self-inflicted injury (1514), diabetes mellitus (1229), senility without mention of psychosis, ill-defined and unknown causes (805), ulcer of the stomach and duodenum (643), congenital malformations (608), intestinal obstruction and hernia (605), birth injuries, post-natal asphyxia and atelectasis (595), nephritis and nephrosis (536).

The communicable diseases most frequently notified in 1963 were: gonorrhoea (21 137), scarlet fever (3580), tuberculosis, all forms, new cases (3533), typhoid and paratyphoid fevers (916), infectious hepatitis (708), syphilis, new cases (315), meningococcal infections (138), bacillary dysentery (58), smallpox (27).

Organization of the Public Health Services

All activities in the field of public health in Sweden are either operated or controlled by public authorities. In 1963, public health was transferred from the Ministry of the Interior to the Ministry for Social Affairs. The National Board of Health is the principal authority for governing, controlling and promoting health and medical services. The Board super-

vises the medical personnel, the hospitals and the pharmacies and has direct control of the state mental hospitals, the state pharmaceutical laboratory, the state institutions for forensic medicine, a unit for mass radiofluorography, etc. The National Board of Health is also concerned with the subsidies granted by the Government for special medical care (mental diseases, epidemic diseases, tuberculosis, chronic diseases, etc.).

At the local level the responsibility for public health and medical care rests with the local authorities, i.e., the 25 county councils and the four county boroughs. The National Institute of Public Health is an independent body outside the jurisdiction of the National Board of Health. It conducts inquiries into health matters submitted by public authorities, corporations and private individuals, but is also engaged in independent research in the field of general, industrial and food hygiene. The Central Board of Hospital Planning and Equipment is another independent body engaged in standardization of hospital buildings and equipment. The sickness insurance scheme is supervised by the National Social Insurance Board, which is under the Ministry for Social Affairs. Insurance is compulsory.

Hospital Services

A conspicuous feature of the Swedish hospital system is that most of the establishments are owned and operated by public authorities; 22.1 per cent. of the available bed capacity belongs to the State, 69.1 per cent. to counties or county boroughs, two per cent. to local authorities (small towns, parishes), 4.9 per cent. to private enterprises and 1.9 per cent. to sick funds, associations, etc.

In 1963 the total number of hospitals and other health institutions providing in-patient accommodation was 906, with 121 731 beds (equivalent to a bed/population ratio of 16.0 per 1000). These establishments admitted 1 069 342 patients. The 121 731 beds, of which 113 769 were in 648 publicly-maintained institutions, were distributed as follows:

Category and number	Number of beds
General hospitals	112
Rural hospitals	64
Private nursing homes	20
Tuberculosis hospitals	24
Infectious diseases hospitals	14
Maternity clinics	3
Maternity homes	7
Mental hospitals, mental nursing homes	197
	33 721

Category and number	Number of beds
Chronic diseases hospitals	276
Hospitals for rheumatic diseases and hospitals of the National Social Insurance Board	5
Orthopaedic units	4
Coast sanatoria	2
Hospitals and homes for epileptics	11
Hospitals and other institutions for mental defectives	167
	14 792
	801
	372
	436
	1 005
	14 275

Out-patient facilities were provided at all hospitals, at 12 independent polyclinics, 830 urban and rural health centres and about 700 dispensaries. In all, 1651 public health nurses made 1 825 650 home visits.

Medical and Allied Personnel

There were 7990 physicians in Sweden in 1963, equivalent to one per 950 inhabitants. Included in this figure are 50 doctors of medicine qualified in dentistry. Other health personnel included:

Dentists	5 550
Pharmacists	790
Bachelors of pharmacy	1 680
Fully qualified midwives	910
Fully qualified nurses	20 740
Fully qualified nurses with midwifery qualifications	870
Nursing auxiliaries in hospitals	37 200
Foreign nurses without Swedish licence	420
Physical therapists	2 050
X-ray technicians	200
Dental mechanics	2 300
Dental chairside assistants	6 300
Occupational therapists in hospitals	320
Social workers in hospitals	310

Communicable Disease Control and Immunization Services

In 1964 the tuberculosis morbidity was 5.7 per 1000 inhabitants and the mortality 0.05. The morbidity rate for infectious tuberculosis of the lungs was 0.3 per 1000. Since 1946 the mass radiofluorography unit of the National Board of Health has examined 7.3 million individuals. Pathological signs were found in 2.5 per cent.

A few cases of amoebic dysentery and malaria were diagnosed but they were all imported.

The following immunization services were carried out during 1963/64:

Smallpox	515 000
Typhoid and paratyphoid fevers	119 864
Diphtheria, whooping-cough and tetanus	104 572
Tetanus	63 219
Diphtheria and whooping-cough	19 620
Cholera	10 199
Yellow fever	5 800
Epidemic typhus	5 200
Whooping-cough	3 406
Diphtheria	2 365
Plague	1 000

Chronic and Degenerative Diseases

Since 1958, new cases of cancer have to be reported to the Cancer Registry of the National Board of Health. The notifiable neoplasms include leukaemia and malignant lymphoma, all intracranial tumours and all neoplasms with endocrine activity. The number of cases reported in 1961 was 20 670, corresponding to about 275 per 100 000 inhabitants. A programme of early detection of cancer is planned and is being developed. For this purpose training of cytologists has been organized. The National Board of Health has started a pilot project in the county of Värmland for the early detection of diseases through screening. This programme will be extended to the whole province.

Specialized Units

In 1963 the maternal and child welfare organization provided 1565 clinics which gave medical care to 101 961 pregnant women, 109 958 infants under one year of age and 355 856 children aged between one and seven years. Nurses made 440 000 home visits to infants under one year and 253 000 to children aged between one and seven. All births were attended by a doctor or qualified midwife. The school health services, which are available at all schools, supervised altogether 1 200 000 schoolchildren. There were 827 dental clinics which gave treatment to 1.36 million patients. Sweden also had eight independent medical rehabilitation centres, ten hospital rehabilitation departments, 57 psychiatric out-patient clinics at mental hospitals and other psychiatric clinics, 43 child psychiatric clinics, 32 independent central tuberculosis dispensaries and 26 hospital tuberculosis dispensaries. All industries have first-aid equipment and all large industries have their own doctors.

National Health Planning

The outstanding trend in the planning of medical and health care is to accelerate the integration of all services under one authority—the county council. Accordingly the district medical officers were placed under the county councils in 1964 and the state mental hospitals are to be similarly transferred in 1967. The Senior County Medical Officer will be located in the office of the County Governor and will be given increased duties in the overall field of public health.

Following a parliamentary recommendation, the country has been divided into seven hospital regions, which are to be independent as regards in-patient care. Regional hospitals are being specifically designated and equipped for highly specialized forms of medical care.

In some areas, group practice is organized both on a county council and on a private basis. Large group practices are developed in the big cities with financial support from the local authorities. To combat air and water pollution special committees are appointed to facilitate the collaboration between different governmental and non-governmental agencies. The Swedish government has granted 500 000 kronor for an antismoking campaign especially directed to the young generation.

International Collaboration

Sweden has collaborated with the Nordic Council, the Council of Europe and the World Health Organiza-

tion. Fellowships to Swedish medical personnel were granted by WHO and the Council of Europe.

Government Health Expenditure

In 1963, the total general government consumption expenditure amounted to 15 227 million kronor, of which 3018 million kronor (i.e., 19.8 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 397 kronor per head on these services, as compared with 319 kronor per head in 1960. A further sum of 460 million kronor, representing 15.0 per cent. of the total general government expenditure on capital account, was spent on the improvement and expansion of health facilities.

SWITZERLAND

Population and Other Statistics

At the last census, taken in December 1960, the population of Switzerland was 5 429 061. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	5 496 000	5 660 000	5 770 000	5 874 000
Number of live births . . .	99 238	104 322	109 993	112 890
Birth rate (per 1000 population)	18.1	18.4	19.1	19.2
Number of deaths	51 004	55 125	56 989	53 609
Death rate (per 1000 population)	9.3	9.7	9.9	9.1
Natural increase (per cent.) .	0.88	0.87	0.92	1.01
Number of deaths, 1-4 years	402	441	431	409
Number of infant deaths . .	2 086	2 211	2 252	2 142
Infant mortality rate (per 1000 live births)	21	21	20	19
Number of maternal deaths .	49	59	38	60
Maternal mortality rate (per 1000 live births)	0.5	0.6	0.3	0.5

Of the 53 609 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease (12 509), malignant neoplasms (10 854), vascular lesions affecting the central nervous system (6741), all accidents (3595, including 1374 in motor-vehicle accidents), hypertension (1419), diabetes mellitus (1078), pneumonia (971), cirrhosis of the liver (890), congenital malformations (682).

The communicable diseases most frequently notified in 1964 were: measles (10 985), influenza (3381), whooping-cough (2621), tuberculosis, all forms, notified cases (2424), scarlet fever (1854), infectious hepatitis (1060), typhoid and paratyphoid fevers (151), meningococcal infections (119), dysentery, all forms (82), diphtheria (30), poliomyelitis (6).

Organization of the Public Health Services

Switzerland is a Confederation in which the cantons have a large degree of autonomy. Certain public health questions are the responsibility of the cantons and, although a number of federal laws on health have been promulgated, their execution is often entrusted to the cantons and communes. However, the organization of the public health services shows a tendency towards centralization.

At the national level, the responsibilities of the Confederation are: prevention of the introduction of communicable diseases and control of such diseases; tuberculosis control; training in the medical and associated professions (physicians, dental surgeons, pharmacists, veterinarians); sickness and accident insurance; disablement insurance; occupational health; food hygiene; pharmacopoeia; narcotics; trade in poisons; protection against ionizing radiation; control of rheumatic diseases; measures against alcoholism; health statistics. Preliminary studies are under way with the aim of enabling the Confederation to legislate in the field of air pollution.

The cantons are responsible in particular for environmental sanitation, cleanliness of houses and other buildings, school health, mental health, hospitals and control of pharmaceutical preparations.

Each commune is legally bound to establish a local health authority.

Hospital Services

In 1960, the total number of hospitals and other health institutions providing in-patient accommodation was 430, with 67 722 beds (equivalent to a bed/population ratio of 12.5 beds per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	261
Tuberculosis hospitals	35
Psychiatric hospitals	55
Chronic diseases hospitals	54
Multipurpose institutions	24
Physical therapy centre	1
	37 291
	3 251
	18 588
	5 481
	3 029
	82

The 665 287 patients admitted to these institutions received 21 091 000 days of in-patient care in 1960.

There are 59 hospitals with one or more out-patient departments. It is difficult to give the precise number of independent polyclinics and polyclinics attached to hospitals. Almost all hospitals have out-patient departments which play the part of polyclinics, although they are not officially designated as such. There are also 170 tuberculosis dispensaries in the charge of a doctor, and 240 which are directed by welfare workers.

Medical and Allied Personnel and Training Facilities

In 1964, Switzerland had 8578 doctors, equivalent to one doctor for 685 inhabitants. Other health personnel included:

Dentists	2 312
Pharmacists	1 545
Fully qualified midwives	1 688
Fully qualified nurses	15 228
Nursing aides	1 003
Hospital aides	595
Veterinarians	811
Physical therapists	643
X-ray technicians	303

In January 1965 a new schedule for the medical curriculum was introduced which, *inter alia*, made preventive and social medicine a compulsory examination subject. (In 1962, the first Chair of Preventive and Social Medicine had been established at the University of Zurich.) The minimum length of medical studies has been fixed at six and a half years, including eight months practical training. Since 1962, in order to remedy the shortage of nursing personnel, the Government has been allocating subsidies to the nursing schools recognized by the Swiss Red Cross.

Communicable Disease Control and Immunization Services

Oral poliomyelitis vaccination has been continued during recent years. Up to the end of 1964, more than 80 per cent. of the children under 14 years and approximately 60 per cent. of the population had been vaccinated. The success of these preventive measures is shown in the reduction in the number of poliomyelitis cases, which fell from 152 in 1961 to six in 1964.

Preventive measures against tuberculosis have been reinforced. It is estimated that about one million persons are examined annually by radiography. BCG vaccination is given to between 150 000 and 250 000

persons annually, mainly by the school health services. The tuberculosis mortality is decreasing. Private organizations play an active part in the control and prevention of the disease.

International traffic having increased, the danger of importing smallpox became more real. A reference centre for virological and serological examination of all suspect cases was established at the Institute of Microbiology of the University of Zurich. A reference and epidemiological centre for salmonellosis has been created at the University of Berne.

Chronic and Degenerative Diseases

As the incidence of communicable diseases is decreasing, the health authorities are paying more attention to the many chronic and degenerative diseases which cause a high morbidity in Switzerland and are a heavy economic burden on the country. In 1962, the Government approved new legislation concerning the allocation of subsidies for the prevention and control of rheumatic diseases. Well-equipped cancer research centres have been organized in Zurich, Berne and Lausanne.

Specialized Units

In 1964, 842 centres were engaged in maternal and child welfare. Most pregnant women and newborn children receive medical and health care and advice either in these centres, or in the consulting rooms of private practitioners or from visiting nurses. All deliveries are attended by a doctor or qualified midwife. The communes are bound by law to see that all schoolchildren undergo regular medical examination. During 1964, approximately 67 000 new patients attended the two independent medical rehabilitation centres and the ten hospital rehabilitation departments. Medical care was given to about 14 000 new patients who attended the 33 centres for psychiatric disorders. Switzerland also had 29 public health laboratories. All industrial establishments are legally required to be affiliated to the Swiss Accident Insurance Fund. The big industrial plants tend more and more to employ a full-time doctor or nurse. It is estimated that between 400 and 500 industrial establishments employing about 270 000 persons have their own medical service.

Environmental Sanitation

All towns and the majority of the communes are connected with centralized water supply systems. In 1960, 1 580 390 flats were occupied, of which 1 518 000 (97 per cent.) were served with piped water. In July 1963, 121 water purification stations serving

1 247 000 inhabitants were in use: 46 stations serving a population of 1 751 000 were under construction, and 49 stations for 1 087 000 persons were planned.

Major Public Health Problems

The increasing prevalence of chronic diseases has become the most important public health problem in Switzerland. Rheumatic diseases cause an annual estimated economic loss of about 400 million Swiss francs. Cancer, particularly lung cancer, has been steadily increasing over the past 30 years. Noise and the water and air pollution caused by new industries and growing road traffic, create other serious problems. The lack of a sufficient number of nursing personnel in hospitals and medical care institutions is a constant concern for the health authorities.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review was a period of great economic prosperity which has resulted in inflationary tendencies and a great shortage of personnel in all sectors. The labour force of foreign workers increased from 95 668 in 1955 to 793 351 at the end of 1964. One-third of the total working population in Switzerland are foreigners. This situation has serious repercussions in the economic, social and health fields. The immigration of foreign workers has also accentuated the shortage of housing facilities. Since 1963, the Federal Government has taken various measures to control inflation, to restrict credit facilities, to control the building sector and to reduce the number of foreign workers.

The gross social product increased from 23 400 million francs in 1955 to an estimated 55 350 million in 1964. The regional distribution is uneven. The industrialized and highly populated cantons of Zurich, Berne and Basle provided about three-fifths of the national income. New industries have been established in previously agricultural cantons.

Population increase, economic prosperity and heavier traffic, *inter alia*, are responsible for the

increasing environmental health problems. In 1955, 544 331 motor vehicles were registered, and 1 388 576 were registered in 1964. The number of fatal traffic accidents rose during the same period from 1021 to 1374 a year.

Increased food, alcohol and tobacco consumption, lack of physical exercise, nervous tension, etc., cause a growing number of cardiovascular diseases; lung cancer has also greatly increased. Although no statistics are available on the subject, it is estimated that diabetes has increased during the last 20 years. The federal invalidity insurance was introduced in January 1960. The law provides for the complete or partial repayment of rehabilitation costs and payment of pensions to persons whose working capacity is impaired.

Medical and Public Health Research

Research activities are carried out in clinics and university institutes. The great industrial companies, especially the chemical industries, are also very active in conducting research. Medical research is not directly financed by the Federal Government but by the Swiss national fund for the encouragement of scientific research. In 1964, nearly six million francs were allocated to medical research by this fund. There are also private foundations which encourage medical research.

International Collaboration

Switzerland collaborates in health matters with the World Health Organization, the Council of Europe and the International Children's Centre.

Government Health Expenditure

In 1963 the total expenditure of the Confederation, the cantons and the communes amounted to 9932 million Swiss francs, of which 833 million francs (i.e., 8.4 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 146 francs per head on these services, as compared with 96.5 francs per head in 1959.

TURKEY

Population and Other Statistics

At the last census, taken in 1960, the recorded population of Turkey was 27 754 820. Population estimates for the period under review are as follows:

1961	28 602 000
1962	29 418 000
1963	30 256 000
1964	31 118 000

In 1963, the number of deaths recorded in the registration districts was 96 838. Among the main causes were: rheumatic fever, chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (20 945), pneumonia (15 134), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy

and immaturity (11 328), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (8465), senility without mention of psychosis, ill-defined and unknown causes (7146), malignant neoplasms (5726), vascular lesions affecting the central nervous system (4493), tuberculosis, all forms (4430).

In the same year, for the whole country the most frequently notified communicable diseases were: trachoma (140 624), tuberculosis, all forms, all cases (62 260), measles (18 597), influenza (14 052), whooping-cough (8489), typhoid and paratyphoid fevers (6103), malaria, new cases (4365), infectious hepatitis (4354), scarlet fever (1720), syphilis, new cases (1075), gonorrhoea (1072), poliomyelitis (954), leprosy (613), meningococcal infections (471).

Organization of the Public Health Services

The Ministry of Health and Welfare is the responsible authority for all health matters. Other ministries, state enterprises, workers' insurance funds, local administrations and the private sector participate in the provision of curative health services and play a complementary role in relation to the services of the Ministry of Health and Welfare. Hospitals attached to the Ministry of National Defence meet the needs of the army. The Minister of Health and Welfare is assisted by an Under-Secretary of State and three Deputy Under-Secretaries of State. The various departments of the Ministry are: nationalization of health services, malaria eradication, health affairs, social services, maternal and child health, personnel, curative institutions, tuberculosis control, professional education, pharmacy and pharmaceuticals, population planning, health education and medical statistics. At the provincial level, the Governor is responsible for the administration of the health service. He is advised by a director of health and welfare. In provinces where the health services have been nationalized, the health administration now comprises a series of specialized departments which are in charge of the various services. Social insurance for workers comes under the Workers' Insurance Institution, which is attached to the Ministry of Labour.

Hospital Services

At the end of 1963, the total number of hospitals and other health institutions providing in-patient accommodation was 638, with 53 413 beds (equivalent to a bed/population ratio of 1.7 beds per 1000). Of these beds, 38 248 were provided in 495 state-maintained institutions. The 53 413 beds were distributed as follows:

Category and number	Number of beds
General hospitals	238
Medical centres (without doctor)	301
Tuberculosis hospitals	51
Maternity hospitals	33
Paediatric hospitals	3
Psychiatric hospitals	4
Eye clinics	6
Cancer hospital	1
Leprosarium	1

In 1963 there were 1 044 695 admissions to these establishments.

Out-patient services were available in 1964 at 331 hospital out-patient departments, 287 health centres, 244 dispensaries and 3572 medical aid posts and from 160 mobile health units. The latter units provided 100 BCG teams, ten X-ray teams and 40 treatment teams for tuberculosis control purposes.

Medical and Allied Personnel and Training Facilities

At the end of 1964, there were 9664 doctors practising in Turkey — one for every 3200 inhabitants. Of these doctors, 6962 were employed by the Government. Other members of the health professions included:

Dentists	1 742
Pharmacists	1 744
Fully qualified midwives	1 356
Village midwives	2 825
Fully qualified nurses	2 383
Assistant nurses	2 206
Sanitarians	4 601
Village sanitarians	1 409

A new medical school was opened in 1964, bringing the number of medical schools to four. In the 1964/65 academic year there were altogether 580 medical students.

Communicable Disease Control and Immunization Services

Owing to shortage of personnel for malaria surveillance services, eradication activities had to be reduced. The number of malaria cases, which was 1 180 000 in 1946, decreased to 3092 in 1960, but increased again to 5081 in 1964.

The most important problem in Turkey is the control of tuberculosis. At present 2.5 to three per cent. of the total population suffer from tuberculosis. Mass BCG vaccination campaigns were started in 1959 and 44 million tuberculin tests and BCG vaccinations had been carried out by the end of the period under review. Ten mobile X-ray screening teams and 127 tuberculosis control dispensaries provide regular screening and treatment services. Trachoma is endemic in the eastern and south-eastern provinces of Turkey, and it is estimated that there are 1.5 to two

million cases of trachoma in the country. As a result of very active control measures the incidence of the disease is decreasing, especially in areas where health services are nationalized. The estimated number of leprosy cases in Turkey is 10 000. Control measures have been intensified, and screening is being carried out in the eastern provinces, where leprosy is frequently seen. As a result of proved curative methods and control activities, syphilis is now under control.

The following immunization procedures were carried out in 1964:

Poliomyelitis	2 904 030
Typhoid and paratyphoid fevers	2 325 712
Smallpox	2 046 609
BCG	1 518 182
Diphtheria	1 071 720
Whooping-cough	339 632
Epidemic typhus	31 178

Chronic and Degenerative Diseases

Heart disease, mental disorders, cancer and rheumatism are the degenerative diseases with the highest mortality in the country, particularly in urban areas. Goitre and diabetes are also widespread.

Specialized Units

In 1964 the maternal and child health organization was based on 39 health centres, 45 health units, 580 health posts, 90 maternity units and 87 child health centres as well as on maternity and paediatric hospitals. A total of 55 400 deliveries were institutional. Health services were provided to 2 116 800 schoolchildren (60 per cent. of the total school population). Two hundred dental service units treated one million patients and 456 new patients attended the 17 hospital rehabilitation departments. Seven independent psychiatric out-patient clinics and three out-patient departments attached to the mental hospitals gave consultations and treatment to 23 105 patients. According to law, a health unit must be provided in industrial establishments employing more than 50 workers. Four public health laboratories carried out 95 740 examinations.

Environmental Sanitation

In the nine communities with a population of 100 000 or more, all the inhabitants were served with piped water to their dwellings. In 139 communities with a population of 10 000 to 100 000, 90 per cent. of the inhabitants were served with piped water to their dwellings and ten per cent. had to rely on public fountains. In 442 communities with a population of 2000 to 10 000, 39 per cent. were served with piped

water to their dwellings, 39 per cent. depended on public fountains, 20 per cent. on community or private wells and two per cent. on other sources. In 35 471 communities of less than 2000 inhabitants, less than one per cent. had piped water in their dwellings, 30 per cent. had to rely on public fountains, 23 per cent. depended on community or private wells, and 46 per cent. on other sources.

Major Public Health Problems

The most important health problems in Turkey are unsatisfactory environmental sanitation, especially in rural areas; the inadequacy of health education, particularly in villages where the illiteracy rate is over 50 per cent.; nutritional deficiencies among children, and the shortage and unbalanced distribution of health personnel. Most of the health personnel live in the most populous provinces; in the eastern provinces the doctor/population ratio is one to 20 000, whereas in Istanbul it is one to 550.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Following a law promulgated in 1961, the nationalization of the health services in Turkey was begun in 1963 in one province which had been selected as a pilot area. It will be carried out over a period of 15 years. At the end of 1964, six provinces had nationalized health services. Under this system, the health services are administered by the Ministry of Health and Welfare on a decentralized basis. A health centre with a doctor, a nurse, a health officer and two or three village midwives is established in each rural area to cover a population of some 7000. Under nationalization, the health services are placed under the management of the State. For the time being, the State finances the project, but efforts are being made to establish a health insurance scheme. A law for family planning was approved by Parliament in 1965. Family planning projects will be initiated in pilot areas.

One of the most important developments during the decade under review is that Turkey has entered the era of planned development. The period 1963-1977 has been divided into three development stages, each of five years. This development has also affected the health services of the country. The number of medical facilities has increased, especially in cities. Particular attention has been given to the health of workers. Great efforts have been made in the educational field; three new universities have been established and the number of lycées and secondary schools has been increased. The percentage of

literate villagers has increased and community development has been emphasized.

National Health Planning

The first five-year national plan for economic and social development was initiated in 1963. This plan contains a health sector covering all institutions which provide health services through their organizational arrangements. The overall development plans are prepared by the Prime Minister's State Planning Organization. Specific sectors of the plan are prepared by specialized committees. The specialized health committee includes members from the medical schools and the health institutions. The overall development plan, containing sections from the various specialized committees, is approved by the Higher Planning Board, discussed in the Council of Ministers and then submitted to the Turkish Grand National Assembly. After approval by the Assembly, it is sent to the executive departments concerned. The five-year plans are applied by annual programmes. Co-ordination of the various sectors of the plan is first achieved in the specialized committees. The responsibility for co-ordination and evaluation rests with the State Planning Organization.

Specific programmes in the health plan are concerned with health units, treatment institutions, tuberculosis control, public health institutions, social and communicable diseases, maternal and child health, school health, health education, medical statistics and social services.

Medical and Public Health Research

Special units in the medical schools carry out research projects. A proposal has been submitted to the Turkish Grand National Assembly with a view to making research and education in public health an attribute of the School of Public Health.

International Collaboration

Turkey is participating in the health activities of such international organizations as UNICEF, the United Nations Technical Assistance Board, WHO, the Council of Europe and the Central Treaty Organization. It also co-operates with the United States Agency for International Development, the Co-operative for American Relief Everywhere, the United States Population Council, and the United States Peace Corps, and has bilateral arrangements with several governments.

Government Health Expenditure

In the fiscal year 1963/64 total general government consumption expenditure was 10 610 million Turkish liras, of which 860 million liras (i.e., 8.1 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 28.0 liras per head on these services, as compared with 18.5 liras per head in 1959/60. A further sum of 138 million liras was spent on capital account for the improvement and expansion of health facilities.

UNION OF SOVIET SOCIALIST REPUBLICS

Population and Other Statistics

At the last census, taken on 15 January 1959, the population of the USSR was 208 826 650. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population . . .	218 000 000	221 465 000	224 764 000	227 687 000
Birth rate (per 1000 population) . . .	23.8	22.4	21.2	19.6
Death rate (per 1000 population) . . .	7.2	7.5	7.2	6.9
Natural increase (per cent.)	1.66	1.49	1.40	1.27
Infant mortality rate (per 1000 live births)	32	32	31	29

The estimated population on 1 January 1965 was 229 100 000. At that date 53 per cent. of the population were living in the towns, and 47 per cent. in the rural areas.

Organization of the Public Health Services

The USSR consists of 15 Union Republics, each inhabited by a preponderating nationality, which gives its name to the Republic. Within the Union Republics there are 20 Autonomous Republics, representative of smaller nationalities, and eight Autonomous Regions. The constituent parts of this complex of republics is divided into 112 *krays* and *oblasts*, which in their turn are subdivided into 2638 *rayons*. The individual constitutional unit at each of these organizational levels has a Soviet of Workers' Deputies, whose responsibilities and supervisory and executive functions vary with its position in the pattern of government. The highest legislative body is the Supreme Soviet of the USSR, which is elected by the vote of the whole USSR on the basis of one voting Deputy per 300 000 population. It appoints the highest executive and administrative body, the Council of Ministers. This pattern, i.e., Supreme Soviet and

Council of Ministers, is repeated in the governmental structures of the Union Republics and Autonomous Republics. In the more local areas of the *oblasts* and *rayons*, the Soviet of Workers' Deputies, acting through its Executive Committee, is the directing and controlling body subject to the higher authority of the Republic, and ultimately of the USSR.

The Constitution of the USSR provides for the protection and constant improvement of the health of the whole population, and these objectives are repeated in the constitutions of the Union Republics and Autonomous Republics. The health services of the USSR have been created on the principle that all forms of medical care should be free and readily accessible. In the operation of this principle emphasis is placed on preventive medicine and prophylactic measures. The health services of the USSR are directed by central and local health authorities which form part of the corresponding administrative machinery at the several levels of government. The central health authorities consist of the USSR Ministry of Health, and the ministries of health of each of the Union Republics and Autonomous Republics.

The functions and responsibilities of the USSR Ministry of Health cover the whole field of the public health services and the provision of medical care. They also include the co-ordination of medical research and the practical application of its achievements, medical and allied education, the determination of policy with regard to the pharmaceutical and medical supply industries and the establishment of norms of provision in relation to the national health plan. The Ministry of Health is responsible to the Council of Ministers for the general direction and supervision of all these services and related activities.

The ministries of health of the republics are responsible in their turn to their respective councils of ministers, and to the USSR Ministry of Health, for the provision and control of health services in their territories, using the local health authorities as their operating agents. (These health services can be grouped under four main heads which will be discussed in detail below).

In the *krajs* and *oblasts* the health services are directed by *kraj* and *oblast* health departments, and in towns by the town health department, subject to the supervision and control of the local Soviets. In the rural *rayons*, the various services are based on the *rayon* hospital which in these circumstances has a section for sanitation and epidemiology. The services are directed by the *rayon* physician, who is also the chief physician of the *rayon* hospital.

The various health authorities are in close contact with the trade unions, the Red Cross and Red Crescent Societies of the USSR, scientific and medical associations, voluntary assistance councils, etc.

Content and Method of Provision of the Health Services

The health services functioning in the USSR are described under the following four heads—Medical Care, Sanitation and Epidemiological Services, Health Education, and Voluntary Health Work.

(1) *Medical Care*

All medical care is provided through an extensive system of hospitals, out-patient departments, polyclinics, health posts and other medical service installations with their appropriate staffs. The clinic facilities are organized on the basis of therapeutic districts, each containing a population of 3000, and paediatric districts, each with a child population of 800 to 1000. These provide both immediate and follow-up medical care for their respective clients and patients. Particular attention is paid to the protection of the health of mothers and children. There are special privileges for expectant and nursing mothers as regards leave with pay, breaks during working hours for breast feeding, etc. At the advisory clinics for children, immunization procedures are carried out, milk products and dietary mixtures are made available, and facilities are provided for the admission of delicate children to forest schools, etc.

(2) *Sanitation and Epidemiological Services*

These comprise a wide range of services covering both environmental improvement, and the epidemiology and control of communicable diseases. They are the responsibility of a special USSR Deputy Minister of Health, but the services are operated in the usual way by the health authorities of the republics, *krajs*, *oblasts* and *rayons*. The services are concerned with prevention of environmental pollution, the improvement of working conditions, the prevention and control of communicable and occupational diseases, and inspection for the maintenance of hygienic standards. The staff includes sanitary engineers, epidemiologists, microbiologists, physicists and biologists.

(3) *Health Education*

The main task of the state-maintained health education services is to give the general public better information about health matters and to bring to notice subjects of local interest such as regional pathology and epidemiology and the local housing situation. The information so conveyed is discussed by the general public, trade unions and active voluntary workers. The Alliance of the Red Cross and Red Crescent Societies of the USSR provides an active and numerous body of health education workers.

(4) Voluntary Health Work

Public participation in the organization of the health services is recognized policy in the USSR. In recent years the work of the public health committees appointed by the local Soviets has greatly increased, and the place of active voluntary workers in the operations of the services has been recognized. For example, the role of the voluntary sanitary inspector is well established.

Hospital Services

In 1964, there were 26 400 hospital establishments of all types in the USSR, with a total of 2 133 000 beds. This is equivalent to 9.4 beds per 1000 population, as against 6.5 beds per 1000 in 1955.

The distribution of hospital beds in 1963 can be given in greater detail.¹ There were then 2 043 900 beds, and their allocation to the various clinical fields and specialities was as follows:

General medicine	416 700
General surgery	270 600
Gynaecology	109 400
Ophthalmology	33 700
Ear, nose and throat	26 600
Cancer	30 600
Tuberculosis (adults and children)	225 100
Communicable diseases	174 700
Obstetrics	188 500
Paediatrics	211 900
Psychiatry	196 000
Neurology	39 900
Dermatology and venereal disease	33 600
Others	86 600

Out-patient services were provided in 36 900 establishments, including out-patient departments of hospitals, polyclinics and health posts, all of which were medically staffed.

Medical and Allied Personnel and Training Facilities

In 1964, there were in the USSR 523 000 doctors in all branches of medicine including dentistry. This was equivalent to a doctor/population ratio of one to 435. The comparable ratio in 1955 was one to 588.

In 1963,¹ in addition to doctors, there were 684 100 fully qualified nurses, and 231 600 midwifery personnel. There were also 285 000 field assistants to the doctors concerned with hygiene and epidemiology, and 58 200 disinfectors. Technical staff included 58 300 laboratory personnel, 18 700 workers in X-ray departments, and 4200 dental technicians.

Doctors are trained in four separate departments within a faculty or institute of medicine—curative medicine; paediatrics; hygiene, sanitation and epi-

demiology; and stomatology or dentistry. They all have an identical two-year period of pre-clinical instruction. Thereafter they proceed to four years of special training in their respective fields (three years for stomatology).

The training of all doctors is based on national syllabuses for the four departments. Medical education is free and is given at medical institutes under the jurisdiction of the Ministry of Health. In 1964, there were 76 medical institutes, five medical faculties in state universities, and a pharmaceutical institute. Each year 25 000 doctors graduate, and there are approximately 200 000 students in all departments of the faculties and institutes of medicine.

Communicable Disease Control

Morbidity due to the major communicable diseases has been materially reduced during the past 15 years, though the date of the commencement of the decline varies from one disease to another. Malaria has been eradicated, and trachoma has been almost completely eliminated. Tuberculosis morbidity is one-third of what it was in 1950, and the mortality from the disease is now no more than one-fifth. Even greater declines are to be recorded for diphtheria, and poliomyelitis. Though a considerable reduction has occurred in the incidence of whooping-cough and the acute bowel infections, the improvement has not been so marked as with other diseases.

These results are due to the application of recent scientific discoveries, particularly in the fields of bacteriology and virology. Immunization with modern antigens is a feature of the work of the advisory child clinics and polyclinics.

Chronic and Degenerative Diseases

In the field of the chronic and degenerative diseases special attention has been paid to cancer. A special system of cancer control establishments has been created. They are situated at republic, *kraj* and *oblast* centres and the larger ones have special hospitals attached. Altogether there are 267 of these establishments. There are also 2391 cancer control units and departments in the general and other hospitals. For the purpose of early diagnosis of cancer, screening investigations of elderly and middle-aged persons have been undertaken on a very extensive scale. No fewer than 49 200 000 made use of these diagnostic facilities in 1964.

Specialized Units

Mention has already been made of the interest in maternal and child care, and this has been made evi-

¹ Figures extracted from *Narodnoe hozjajstvo SSSR* (USSR statistical yearbook), Moscow, 1963.

dent by special legislation. This legislation includes the laws governing the employment of expectant mothers, and their periods of leave with pay, which in themselves are an example of prenatal care. Some indication of the increasing importance attaching to the care of the expectant and parturient mother is seen in the increase of hospital beds provided. These numbered 172 000 in 1955 and 230 000 in 1964.

There is also an extensive system of advisory clinics for mothers and young children. In the case of children an attempt is made to give them supervisory medical care in these clinics from birth to the age of 15. They also undergo the routine immunizing procedures there. There were 13 600 maternal and child health advisory clinics in 1955. The comparable total for 1964 was 19 000.

The maintenance of a large number of permanent kindergarten, crèches and combined crèche-kindergarten is an especial feature of child care in the USSR. In 1953, these facilities were provided for no more than 2 500 000 children. In 1964 they were available to 7 000 000.

In parallel with the ordinary medical establishments there is a special network of medical care arrangements for the industrial workers. Workshop districts have been designated which comprise from 1000 to 2000 industrial and office workers. In these workshop districts the usual medical facilities are available, together with health posts specially provided for the industrial groups. In addition there are night sanatoria where required. The whole system of general and industrial care, which includes hospitals, polyclinics, health posts and night sanatoria, is co-ordinated in the interest of the industrial worker by specialized medico-sanitary units, which may be provided with in-patient accommodation. The number of these medico-sanitary units increased from 929 in 1955 to 1175 in 1964. The whole system was staffed in 1964 by 7096 doctors and 22 901 feldshers.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The outstanding feature of the decade was the all-round improvement in the working and living conditions of the population. This was manifest in the rise in the standard of living, in the higher cultural level, and in the improved health of the community. Some of the more notable changes and advances include the increase in industrial and office workers by 34 per cent., the rise in the national income by 46 per cent., the reduction in the length of the working day to approximately seven hours, the building of ten million homes in the rural areas, and the increase in the number of students receiving higher education from 2.2 million

in 1958/59 to 3.6 million in 1964/65. This great expansion of industrial activity, together with the increase in the number of industrial workers and the growth of the population, has necessitated a strengthening of all the health services. The strengthened health service with its increased facilities for the practice of both preventive and curative medicine has been of itself one of the great achievements of the decade. Between 1955 and 1964 the national death rate fell from 8.2 to 6.9 per 1000 population; the infant mortality rate was halved, falling from 60 per 1000 live births to 29. Finally, the expectation of life at birth was increased from 63 years to 65 for men, and from 69 to 73 for women.

National Health Planning

The first plan for the economic development of the USSR was prepared in 1920 by the State Planning Commission (GOSPLAN). It was concerned with the construction of a system of electrical power plants. In 1927 GOSPLAN undertook the preparation of the first five-year plan (1928-1933), in which the development of heavy industry was stressed. Since then, except for a period during the Second World War, there has been a succession of five-year plans with a variety of objectives. Following certain changes in planning methods and the allocation of greater powers to GOSPLAN, a seven-year plan was adopted for the period 1959-1965. In October 1961 it was decided that the period 1961-1980 should be regarded as appropriate for a twenty-year plan, in which the objectives would be more long-term in character. They include a six-hour day for a six-day week, or 35 hours for a five-day week by 1970, and free housing, water, gas, public transport and school meals by 1980.

All these plans, whatever their duration in years, are adjusted annually in the light of the most recent information available.

Plans for the development of the health services are designed for the same periods as the national plans for economic development, and are included in the same document. They are drawn up by the same planning authorities, which ensure co-ordination with the plans of the other sectors—capital investment, labour, agriculture, education, etc.

Planning in the USSR, like the administration of the health services, is organized on the basis of leadership from the centre, combined with the maximum development of initiative and action at the periphery, or rather at the levels of the separate organizational tiers. Draft plans are prepared in the localities, reviewed by the republics and submitted to GOSPLAN. After approval by the Supreme Soviet of the USSR, the plans are given their final form by the governments of the

republics and the local Soviets. In each section of the plans there is a statement of the authority responsible for its implementation.

The periods for the operation of the health plans and the procedures for their preparation and implementation are the same as those for the overall development plans. The annual review of a five-year plan or a seven-year longer-term plan is in effect the preparation of a one-year plan, more operational in form, and more itemized as regards detail.

The health plan for the period 1959-1965 includes amongst its objectives a considerable increase in hospital beds, an extension of the system of medico-sanitary units in the industrial field, an increase in the size of *rayon* hospitals to 100-200 beds, an increase in the number of doctors and allied staff, the elimination of pollution of water, soil and air, a larger output of the pharmaceutical and related industries, and the further expansion of medical research.

Medical and Public Health Research

Research in medical sciences is under the supervision and direction of the USSR Ministry of Health, and of the Academy of the Medical Sciences. Together with the ministries of health of the republics, they are responsible for the 290 institutes and 43 000 workers who are carrying out research in the various branches of medicine and in the public health field. The institutions concerned with higher medical education also undertake research. The variety of research projects is great, covering, amongst other subjects, the major communicable and chronic and degenerative diseases, with special attention to cancer, the causes of loss of working capacity in industry, and the promotion of health through preventive medicine. In addition there is a considerable interest in research concerned with the operation of the medical services both in urban and rural areas, the establishment of norms of provision for use in the planning of services,

and the organization of medical services in virgin territories.

The task of co-ordinating, supervising and summarizing these research activities has been assigned to a special council for the co-ordination of research work and the practical application of the achievements of research. The council is attached to the USSR Ministry of Health, and is assisted in its work by the scientific medical councils of the republics and by the major research institutes.

International Collaboration

In addition to its participation in the activities of the World Health Organization, the USSR during the period 1961-1964 has given extensive assistance to developing countries along two main lines. Developing countries have been assisted by the construction of hospitals, polyclinics and factories for the preparation of antibiotics, pharmaceuticals, and medical equipment. They have also received supplies of drugs, vaccines, etc. Assistance was also given by the secondment of specialist personnel from the USSR, and in training national staff either in their home country or in the USSR. A number of research fellows and research trainees have also come from developing countries to work in the medical and research institutes of the USSR.

Government Health Expenditure

Expenditure in the USSR on the national health services proper increased from 4800 million roubles in 1960 to 5074 million roubles in 1963.¹ The latter figure represents an expenditure of 23 roubles per head on these services.

¹ Figures extracted from *The Statesman's Year-Book, 1965-66.*

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Each of the three component parts of the United Kingdom—England and Wales, Scotland, and Northern Ireland—has its own ministry or department of health and publishes its own vital statistics. The description of the health situation in the United Kingdom which follows is largely based on England and Wales, but mention will be made of any significant variations in Scotland and Northern Ireland.

Population and Other Statistics

The enumerated populations of the several parts of the United Kingdom, as determined at the last census taken on 23 April 1961, were as follows:

England and Wales	46 104 548
Scotland	5 179 344
Northern Ireland	1 425 042
Total	52 708 934

Population and some other vital statistics for England and Wales for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Home population	46 205 200	46 708 700	47 027 700	47 401 300
Number of live births	811 281	838 736	854 055	875 972
Birth rate (per 1000 population)	17.6	18.0	18.2	18.5
Number of deaths	551 752	557 636	572 868	534 737
Death rate (per 1000 population)	11.9	11.9	12.2	11.3
Natural increase (per cent.)	0.57	0.61	0.60	0.72
Number of deaths, 1-4 years	2 662	2 550	2 780	2 552
Death rate, 1-4 years (per 1000 population at risk)	0.93	0.86	0.91	0.81
Number of infant deaths	17 393	18 187	18 042	17 445
Infant mortality rate (per 1000 live births)	21.4	21.7	21.1	19.9
Number of maternal deaths	274	299	243	227
Maternal mortality rate (per 1000 live births)	0.34	0.36	0.28	0.26

The comparable data for Scotland and Northern Ireland for the year 1964 are as follows:

	Scotland	Northern Ireland
Home population	5 206 400	1 458 000
Number of live births	104 355	34 345
Birth rate (per 1000 population)	20.0	23.6
Number of deaths	61 039	15 354
Death rate (per 1000 population)	11.7	10.5
Natural increase (per cent.)	0.83	1.31
Number of deaths, 1-4 years	347	84
Death rate, 1-4 years (per 1000 population at risk)	0.9	0.69
Number of infant deaths	2 508	904
Infant mortality rate (per 1000 live births)	24.0	26.3
Number of maternal deaths	24	6
Maternal mortality rate (per 1000 live births)	0.2	0.17

Of the 534 737 deaths in England and Wales recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease and other diseases of the heart (159 128), malignant neoplasms (104 698), vascular lesions affecting the central nervous system (73 965), pneumonia (29 509), bronchitis (28 740), accidents (18 702, including 7271 in motor-vehicle accidents), hypertension (13 195), chronic rheumatic heart disease (6171), suicide and self-inflicted injury (5566). In Northern Ireland the identity and order of the five leading causes of death were the same as in England and Wales. In Scotland the first three causes were the same, but bronchitis came fourth and accidents, including motor-vehicle accidents, fifth.

The communicable diseases most frequently notified in England and Wales in 1964 were: measles (306 721), gonorrhoea (37 665), whooping-cough (31 594), dysentery, all forms (20 198), scarlet fever (20 127), tuberculosis (17 599), syphilis, new cases (3775).

Organization of the Public Health Services

England and Wales

For England and Wales the central health authority is the Ministry of Health. The Minister has the duty under the National Health Service Act, 1946, "to promote the establishment in England and Wales of a comprehensive health service designed to secure improvement in the physical and mental health of the people of England and Wales and the prevention, diagnosis and treatment of illness". He is responsible to Parliament for ensuring that health services of all kinds are available to all who need them, and is advised by the Central Health Services Council and certain standing advisory committees dealing with special subjects. The National Health Service is available to all residents in the United Kingdom, and covers a comprehensive range of hospital, specialist, practitioner (medical, dental, ophthalmic), pharmaceutical, appliance and local authority services. The general basis of the service is that it is free. It is organized in three main divisions:

- (1) hospital and specialist services—for these the Minister has direct responsibility exercised in the main through regional hospital boards;
- (2) general medical, dental, pharmaceutical and supplementary ophthalmic services, including family doctors, dentists, chemists and opticians. The Minister has indirect responsibility for these and exercises general and supervisory powers through executive councils;
- (3) local health authority services for the prevention of illness and for after-care. The Minister's responsibility is indirect, and his supervisory powers are exercised through the local health authorities.

A fuller description of each of these main divisions is given below:

(1) Hospital and Specialist Services

The hospital service, of which the consultant and specialist service forms a part, comprises all kinds of hospitals, both general and special. In the main this part of the service is organized regionally on behalf of the Minister of Health by 15 regional hospital boards. Each hospital region is associated with a university having a teaching hospital or a medical school. Day-to-day administration is carried out on behalf of the boards by 364 hospitals management committees. The only hospitals outside the hospital boards' responsibility are the teaching hospitals for all forms of medical and dental education. These are

administered by 26 boards of governors in London and ten in the provinces.

(2) *General Medical, Dental, Pharmaceutical and Supplementary Ophthalmic Services*

These services are exercised by 134 executive councils whose members serve in a voluntary capacity. Executive councils, which are statutory bodies, cover every county council or county borough area.

All doctors are entitled to take part in the general medical service and most general practitioners (about 20 000) do so. They can also have private fee-paying patients. As health service doctors they are paid mainly on a capitation basis, but may also receive other allowances.

Doctors may prescribe for their patients all drugs and medicines required for their treatment and also certain surgical appliances. The items so prescribed are free of cost to the patient. These prescriptions are dispensed through 12 650 pharmacies, 120 drug stores and 2400 appliance suppliers.

Most dentists are under contract to provide general dental services; they are paid on an item-of-service basis for each complete course of treatment. The patient pays statutory charges towards the cost of conservation treatment and the supply of dentures.

The supplementary ophthalmic services comprise sight-testing and provision of spectacles. Ophthalmic medical practitioners and opticians are paid fees on an item-of-service basis and the patient pays charges towards the cost of the services provided.

(3) *Local Health Authority Services*

These services are the responsibility of the 174 major local authorities in England and Wales—county councils, county borough councils, London borough councils and the City of London authorities—and of 30 other authorities exercising delegated health functions. They work through health committees. The services provided are as follows: care of mothers and young children; domiciliary midwifery service; health visiting; home nursing; vaccination and immunization; prevention of illness, care and after-care; domestic help; ambulance services; health centres.

All the services so far described are provided under the National Health Service Acts, and are the direct or indirect responsibility of the Minister of Health. There is, however, a large range of health services of which some are under the broad supervision of the Minister of Health, and others are the responsibility of other government departments — Ministry of Housing and Local Government, Department of Education and Science, Ministry of Agriculture, Fisheries and Food, Ministry of Labour, Home

Office, Medical Research Council, etc. Where these services have a local application, they are the responsibility of the major and in some cases of the minor local authorities.

Included in these services are the following:

The environmental health service—covering the control of communicable disease, port health control, housing conditions, water supplies, sanitation and sewerage, etc.—the school health services, the occupational health services, the food and drugs administration, research, and a public health laboratory service.

Northern Ireland and Scotland

The pattern of the organization of the health services in Scotland and Northern Ireland is on much the same line as in England and Wales. There are, however, certain differences with regard to the organization of portions of the National Health Service. The most notable of these are as follows:

The Secretary of State for Scotland exercises in Scotland the functions for which the Minister of Health is responsible in England and Wales. The country is divided, for hospital purposes, into five regions, each under the control of a regional hospital board. Four of the regions are centred in the university cities of Edinburgh, Glasgow, Dundee and Aberdeen, and the teaching hospitals in these cities are part of the regional hospital board system. The fifth regional board is based in Inverness and serves the Highlands. The laboratory services in Scotland are run as part of the hospital and specialist services. There is no separate public health laboratory service as in England and Wales.

In Northern Ireland all hospitals are administered by a single autonomous body, the Northern Ireland Hospitals Authority, which is also responsible for the teaching hospitals. All general practitioners are in contract with a single authority known as the Northern Ireland General Health Services Board. As with the hospitals, 100 per cent. of the cost of these services is defrayed by the Government. The laboratory services are run as part of the hospitals and specialist services. There is no separate public health laboratory service as in England and Wales.

Hospital Services

At the end of 1964 there were 472 039 hospital beds in England and Wales, which is equivalent to 9.9 beds per 1000 population. In Scotland there were 77 135 institutional beds, including 13 351 beds in convalescent and old people's homes. Exclusive of these 13 351 beds there were 12.3 beds per 1000 population. Northern Ireland had 17 185 institutional

beds including 154 in convalescent homes. The hospital bed/population ratio was 11.8 per 1000.

The distribution of the 472 039 hospital beds in England and Wales amongst the various specialties was as follows:

General medicine	34 131
General surgery	34 211
Gynaecology	10 141
Ophthalmology	4 527
Ear, nose and throat	6 965
Geriatrics	26 393
Rehabilitation	1 179
Neurology	1 304
Rheumatology	878
Tuberculosis	16 184
Infectious diseases	5 887
Obstetrics	21 175
Paediatrics	6 532
Psychiatry	145 711
Mental deficiency	61 807
Chronic sick	32 308
Venereal diseases	211
Cardiology	618
Physical medicine	452
Dermatology	2 302
Traumatic and orthopaedic surgery	18 506
Radiotherapy	2 042
Urology	1 492
Plastic surgery	1 740
Thoracic surgery	2 396
Others and unclassified	32 947

Altogether in 1964 there were 4 724 661 discharges from and deaths in these various institutions.

Medical and Allied Personnel

In 1964 there were approximately 57 000 medical doctors in England and Wales, of whom 47 000 were in some contractual relationship with the National Health Service. The 57 000 doctors gave a doctor/population ratio of one to 830. Doctors in Scotland and Northern Ireland totalled 6268 and 1771 respectively. In both countries the doctor/population ratio was practically the same as in England and Wales.

Other health personnel in England and Wales included:

Dentists	11 300
Fully qualified midwives with state certificate	17 138
Pupil midwives	4 820
Fully qualified state-registered and state-enrolled nurses	114 857
Assistant nurses and nursing auxiliaries	61 435
Student and pupil nurses	64 415
Veterinarians	4 475
Sanitary inspectors	4 750
Physical therapists	4 009
Laboratory technicians	2 778
X-ray technicians	3 865
Other scientific personnel	3 523
Other health auxiliaries	5 017

Part-time workers are shown as whole-time equivalents.

Communicable Disease Control and Immunization Services

With the exception of the venereal diseases, the situation regarding communicable diseases has been generally satisfactory. Routine vaccination has controlled poliomyelitis. The incidence and mortality of whooping-cough remains low but immunization does not as yet show any prospect of eliminating the disease. Measles remains at the same level of incidence and mortality as previously. Tuberculosis, however, continues to decline. There was an outbreak of smallpox in 1962 subsequent to the arrival of five cases from Pakistan within a short space of time. Northern Ireland has achieved the total eradication of brucellosis.

Immunization procedures carried out in England and Wales in 1964 included:

Poliomyelitis (various procedures)	630 953
BCG	471 408
Smallpox vaccination and revaccination	434 861
Diphtheria (complete primary vaccination course)	265 019
Whooping-cough (complete primary vaccination course)	260 149

Specialized Units

In 1964 maternal and child care in England and Wales was based on 6411 centres which were attended by 290 647 pregnant women, 653 521 infants under one year of age and 1 203 600 children aged between one and five years. Health visitors made a total of 3 680 454 domiciliary visits to children in these two age-groups. National Health Service facilities were made use of in connexion with 861 224 births, 599 317 of which took place in hospital. All these deliveries were attended by a doctor or qualified midwife. School health services were available under 148 administrative authorities; 93.6 per cent. of the school population had access to these services and 7 133 057 children received some form of health care during the year. There were 6918 industrial services staffed by medical or nursing personnel. Under the Factories Acts 875 846 statutory health examinations were carried out. The National Public Health Laboratory Service carried out a total of 2 721 000 examinations in its 75 laboratories.

Major Public Health Problems

The public health problems of the United Kingdom do not differ from those of any other European country except as regards the problems arising from the national pattern of medical care. The National Health Service of the United Kingdom has to meet, as do similar services in other countries, the problem of the

rapid increase in cost. There exists in particular a very considerable problem in hospital replacement and development. The evolution of the general practitioner service is in a transition phase because its past tradition of independence is giving way to reorganization on group practice lines to meet present conditions.

Improvement of environmental conditions, in particular housing conditions, is a major preoccupation of local authorities, some of which have also the question of atmospheric pollution to deal with.

Other problems, somewhat more particularized, are met with in Scotland and Northern Ireland. The problem of alcoholism gives cause for concern in Scotland. While there is no reliable estimate of the incidence of alcoholism, the number of admissions to mental hospitals for the treatment of alcoholism and alcoholic psychosis has risen from 730 in 1956 to 2700 in 1964, representing 7 per cent. and almost 14 per cent. respectively of the total admissions to such hospitals; and in 1964 one in four of the male patients admitted to Scottish mental hospitals was an alcoholic. These percentages are probably between four and five times higher than the corresponding figures in England and Wales. The particular problems of Northern Ireland arise from the increasing incidence of cysticercosis and infectious hepatitis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Broadly speaking there have been no major changes in these fields in the United Kingdom. The period has been one of consolidation, particularly with regard to the communal health and the national health services.

There has been a steady increase in the population from an estimated total of 50 968 000 for the whole United Kingdom in 1955, to an estimated total of 54 066 000 in 1964. The rate of population growth was greatest in England and Wales and least in Scotland. During the period approximately 600 000 immigrants were admitted from Commonwealth and other countries.

The gross national product of the United Kingdom rose from £19 000 million to £32 800 million over the decade.

One of the most important legislative acts in England and Wales was the passing of the Mental Health Act in 1959. Acts on very similar lines came into operation in Northern Ireland in 1961 and in Scotland in 1962. The purpose of these Acts was identical, namely to accelerate the development of a comprehensive mental health service. In addition to introducing certain changes in the nomenclature of the mental disorders and of mental subnormality, the

Acts modified the provisions for compulsory detention in mental hospitals and further facilitated the change to voluntary treatment which was already in progress. The legislation also took account of the shift of emphasis from institutional treatment and detention to community care and out-patient treatment. The local authorities were already empowered to provide a limited range of mental health services, and these powers have been extended under the recent Acts to include the expansion of existing visiting and domiciliary services, the establishment of training centres for the mentally subnormal and day centres, social clubs and residential centres for patients suffering from or recovering from mental disorders.

National Health Planning

In recent years the United Kingdom has developed measures designed to ensure that over a period of years public expenditure is adjusted in accordance with the national resources likely to be available. Planning procedures were first applied in the field of capital expenditure by the public authorities, and subsequently extended to their current expenditure. Under these two heads estimates were made both of resources and of expenditure over a stated period. The expenditure having been adjusted to the resources was then distributed between the various sectors—agriculture, transport, education, health, etc. Each year this planning process is reviewed and projections are made covering an additional year. The operative machinery is an interdepartmental committee of officials representing the various government departments concerned.

In 1961 a similar procedure was applied within the health sector for England and Wales in relation to capital expenditure on the hospital service, and a ten-year programme was published in January 1962. This programme is revised annually and carried forward one year. A parallel process was then applied to local health authority health and welfare capital expenditure and staff, and a programme for ten years was issued in 1963.

Similar action was also taken in Scotland, commencing in 1959, but the ten-year programme was divided into two five-year terms ending in 1970. A later revision of the programme carries it to 1974. The hospital authorities have also produced long-term estimates of current expenditure. Commencing in 1961, estimates have been made for the next financial year, and two years beyond. A five-year sequence is the objective. In the capital investment field priority is being given to hospital building, both for new installations and for renovation of old plant. With regard to current expenditure, priority is being given

to the development of the domiciliary and community care services, with special attention to maternal and child health and the school health services.

In effect, the plan for the health services in the United Kingdom is to be found in the National Health Service legislation of 1946, 1947 and 1948. The further programmes now described can be regarded as later stages in the implementation of that plan.

In addition to these large scale programming activities, special campaigns have been undertaken throughout the United Kingdom both to bring home to the public the dangers inherent in smoking, particularly cigarette smoking, and in health education generally.

Medical and Public Health Research

Medical research in the United Kingdom is carried out through the agency of three major organizations—the universities, the Medical Research Council and the National Health Service. All three derive their financial support in whole or in part from government funds. Contributions are also made from voluntary services and the pharmaceutical and allied industries spend considerable sums on research.

The main purpose of the Medical Research Council is to promote research in all the aspects of health and disease. It also regards its functions as including an obligation to assist the balanced development throughout the United Kingdom of research in the fields of the medical and biological sciences in partnership with the other parties concerned. The Council's arrangements for research fall under four main headings: (1) the work of its staff in the National Institute for Medical Research, and the Council's research units located in other institutions; (2) research groups on long-term projects in university departments; (3) short-term research grants to independent investigators and (4) research fellowships and studentships. The advance in these fields during the period under review has been considerable. But apart from these indications of progress there were several noteworthy developments in the period 1955-1964. Three major advisory boards have been established to assist the Council in the planning and operation of the programme. They are the Clinical Research Board, the Tropical Medicine Research Board and the Biological Research Board. In addition, the Council in 1960 decided to create a clinical research centre in which a variety of clinical and related disciplines could be brought together in order to undertake the collaborative type of research which is now so essential.

The Medical Research Council operates throughout the United Kingdom. In the universities and National Health Service hospitals of Scotland and Northern Ireland considerable research is carried out, some of it sponsored by the Medical Research Council. Scotland also has a further body, the Advisory Committee on Medical Research, which advises the Secretary of State on his functions in relation to research. There is an additional source of research revenue in the form of the Scottish Hospitals Endowment Research Trust. Research grants from the Medical Research Council are available in Northern Ireland, and in addition the Northern Ireland Hospitals Authority awards research fellowships which are grant-aided.

Because of the wide range of research activities in the United Kingdom it is not possible to give any account of the work carried out or in progress. As regards governmental expenditure on research, there has been a very great increase since 1955. In the financial year 1954/55 the estimated expenditure by governments on medical research in the United Kingdom was £5.5 million. This amount is estimated to have increased to £18.5 million in 1963/64.

International Collaboration

The United Kingdom participates actively in the work of WHO, both in relation to the World Health Assembly and to the Regional Committee for Europe. It is well represented on the expert advisory panels and expert committees of the Organization. In addition the United Kingdom is represented on the Council of Europe Committee of Experts on Public Health and on the Council of Europe (Partial Agreement) Public Health Committee.

There is a considerable interchange of fellowship under the aegis of both the World Health Organization and the Council of Europe.

Government Health Expenditure

In the 1963/64 fiscal year the total general government current expenditure, on goods and services only, for the United Kingdom of Great Britain and Northern Ireland amounted to £5250 million of which £995 million (i.e., 19 per cent.) were allocated to financing the National Health Service. This was equivalent to an expenditure of £18.4 per head on these services. A further sum of £82 million was spent on capital account for the improvement and expansion of health facilities.

YUGOSLAVIA

Population and Other Statistics

At the last census, taken in March 1961, the population of Yugoslavia was 18 549 291. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	18 607 000	18 837 000	19 065 000	19 279 000
Number of live births	422 180	413 093	407 406	401 016
Birth rate (per 1000 population)	22.7	21.9	21.4	20.8
Number of deaths	167 447	186 843	169 744	181 591
Death rate (per 1000 population)	9.0	9.9	8.9	9.4
Natural increase (per cent.)	1.37	1.20	1.25	1.14
Number of deaths, 1-4 years	6 710	7 181	6 676	6 899
Death rate, 1-4 years (per 1000 population at risk)	4.4	4.8	4.5	4.7
Number of infant deaths	34 631	34 762	31 572	31 092
Infant mortality rate (per 1000 live births)	82.0	84.2	77.5	77.5
Number of maternal deaths	577	660	560	513
Maternal mortality rate (per 1000 live births)	1.4	1.6	1.4	1.3

The communicable diseases most frequently notified in 1965 were: measles (71 577), dysentery, all forms (44 323), infectious hepatitis (36 252), scarlet fever (10 053), whooping-cough (7805), typhoid and paratyphoid fevers (4416), meningococcal infections (1241), diphtheria (648), typhus (67).

In 1963, 20 092 cases of gonorrhoea and 6761 of syphilis were notified.

Hospital Services

In 1964, Yugoslavia had 254 hospitals, providing 94 807 beds (equivalent to a bed/population ratio of 4.8 per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	142
Tuberculosis hospitals	48
Infectious diseases hospital	1
Hospitals for gynaecology and obstetrics	4
General children's hospitals	9
Psychiatric hospitals	18
Hospitals for allergic diseases	3
Eye clinics	3
Hospitals for rehabilitation	10
Accident hospitals	2
Orthopaedic hospitals	12
Dermatological clinics	2
	63 859
	12 387
	318
	452
	1 551
	9 769
	364
	358
	2 157
	218
	3 199
	175

A total of 1 532 153 patients were admitted to these institutions during the year and received

33 106 000 days of in-patient care. In addition there were also a number of medical centres with a total bed capacity of 12 555 beds.

Out-patient facilities were available at 3489 polyclinics and health stations, which also include first aid posts and mobile health units. These out-patient units recorded 59 346 000 attendances in 1964.

Medical and Allied Personnel

In 1964 Yugoslavia had 16 828 physicians, of whom 1551 were doctors of medicine qualified in dentistry. The doctor/population ratio was one to 1150. Other health personnel included:

Dentists	1 632
Pharmacists	3 330
Pharmaceutical technicians	1 656
Fully qualified midwives	4 298
Fully qualified nurses	14 848
Assistant nurses	25 568
Physical therapists	603
Laboratory technicians	2 550
X-ray technicians	656
Dental technicians	2 353
Sanitary technicians	1 473
Radiotherapy technicians	51

Immunization Services

The following immunization procedures were carried out in 1964:

BCG	1 904 615
Poliomyelitis (Sabin vaccine)	1 829 577
Smallpox	858 532
Diphtheria, whooping-cough and tetanus	775 962
Diphtheria and tetanus	526 345
Tetanus	175 348

Specialized Units

In 1963, maternal and child health services were based on 585 pre-natal centres and 584 child health units; these were attended by 345 761 pregnant women, 896 570 infants under one year of age and 1 915 838 children aged between one and five years. A total of 223 028 deliveries (53.9 per cent. of all deliveries) were attended by a doctor or qualified midwife. There were 364 school health units which supervised the health of 4 553 467 schoolchildren. In the same year 1788 dental clinics recorded 13 003 000 examinations; 7459 patients attended eight independent medical rehabilitation centres, and 4463 patients attended 16 hospital rehabilitation

departments. There were 26 psychiatric out-patient clinics and 295 other specialized units. The 65 public health laboratories carried out 5 606 000 examinations.

Government Health Expenditure

In 1964, the general government budget involved an estimated expenditure of 1492 thousand million dinars, of which 248 thousand million dinars (i.e.,

16 per cent.) were allocated for the provision of health services. This was equivalent to an expenditure of 12 860 dinars per head on these services, as compared with 10 020 dinars per head in 1962. A further sum of 16.6 thousand million dinars was spent on capital account for the expansion and improvement of health facilities. The figures given above do not include health expenditure financed by enterprises and private households; in 1964 such expenditure amounted to 71 thousand million dinars.

EASTERN MEDITERRANEAN REGION

CYPRUS

Population and Other Statistics

Population and some other vital statistics for the period 1961-1964, estimated on the basis of the 1960 census owing to incompleteness of reported data, are given in the following table:

	1961	1962	1963	1964
Mean population	577 000	580 000	589 000	587 000
Number of live births	14 934	14 500*	14 500*	14 200*
Birth rate (per 1000 population)	25.9	25.0	24.6	24.2
Number of deaths	3 254	3 400*	3 600*	3 900*
Death rate (per 1000 population)	5.6	5.9	6.1	6.6
Natural increase (per cent.)	2.03	1.91	1.85	1.76
Number of deaths, 1-4 years	91	60*	80*	50*
Death rate, 1-4 years (per 1000 population at risk)	1.5	1.0	1.3	0.8
Number of infant deaths	445	430*	420*	400*
Infant mortality rate (per 1000 live births)	29.8	29.7	29.0	28.2
Maternal mortality rate (per 1000 live births) **	0.82	0.82	0.18	0.45

* Approximate figures.

** The maternal mortality rate has been calculated on the basis of the data received from government hospitals only.

The following were among the main causes of the 1719 deaths occurring in 1963 to which causes have been assigned: senility without mention of psychosis, ill-defined and unknown causes; arteriosclerotic and degenerative heart disease; malignant neoplasms; vascular lesions affecting the central nervous system; pneumonia.

Among the communicable diseases reported in 1964 were: scarlet fever (317), measles (213), chickenpox (174), tuberculosis (89), dysentery (31), typhoid fever (9), diphtheria (9), whooping-cough (9), poliomyelitis (3), leprosy (3).

Organization of the Public Health Services

The overall responsibility for the organization of the public health services rests with the Minister of Health. The executive authority responsible for the implementation of the policies laid down by the Minister is the Director of the Department of Medical Services. The Minister is assisted by the Director-General of the Ministry of Health while the Director of the Department of Medical Services has two assistant directors, one responsible for the curative ser-

vices and the other for the preventive services. The welfare services do not come under the jurisdiction of the Ministry of Health, nor does the special department for water development.

Administratively, Cyprus is divided into six districts; a district medical officer is responsible for both the curative and the preventive services in each district. These district medical officers come under the direct jurisdiction of the Director of the Department of Medical Services. Thus there are no independent regional or provincial health services. The municipal authorities, which are the only independent local authorities, are responsible for the cleanliness of the towns.

There are no other government departments to which health functions have been assigned. Full co-operation is maintained with the departments for education, welfare and water development.

Hospital Services

In 1962 there were 26 government hospital establishments with 1628 beds (2.8 per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	6 761
Rural hospitals	17 110
Tuberculosis sanatorium	1 115
Infectious diseases hospital	1 12
Mental hospital	1 630

There were also private hospitals with a total bed capacity equal to that of the government general hospitals. The hospital near the international airport of Nicosia for the treatment of dangerous infectious diseases is not in use for the time being. There is also a settlement for leprosy patients. Detention is not compulsory, but chronic patients live in this settlement of their own accord at government expense.

Out-patient care was available in 1963 in six hospital out-patient departments, 16 health centres and three dispensaries, which together recorded 777 349 attendances.

Medical and Allied Personnel and Training Facilities

In 1963, Cyprus had 426 doctors, of whom 106 were in government service and 320 in private practice.

There was thus one doctor for 1380 inhabitants.

There were also:

Dentists	161
Pharmacists	219
Fully qualified midwives	471
Fully qualified nurses	229
Nurses with midwifery qualifications	50*
Assistant nurses	325
Student nurses	324*
Nursing aides	70*
Veterinarians	18
Sanitary inspectors	73
Physical therapists	4
Laboratory technicians	44
X-ray technicians	22

* In government service.

Cyprus has no medical school, but there is a school of nursing for the training of junior nursing staff, including midwives and health visitors. The local training of pharmacists has ceased as from 1962, as the only registrable qualification in pharmacy is now a degree or diploma from a university.

Communicable Disease Control and Immunization Services

Cyprus is free from all quarantinable infectious diseases. Malaria was eradicated in 1950. To prevent the re-establishment of transmission, an anti-malaria maintenance service was instituted. The disturbances in Cyprus have adversely affected the work of this service and breeding of anopheles was reported during 1964 in various places. Trachoma has been eliminated through an improved standard of personal hygiene which, in addition to improved environmental sanitation, also contributed to the decline in enteric infections. Although the incidence is not known, hydatid disease is a prevailing endemic condition in Cyprus. The difficulty of its control lies in the fact that it is a complex problem involving social, educational, administrative, legislative and financial commitments which go far beyond the responsibilities of the health authorities. Leprosy, with only three cases reported during 1964, is a very minor problem. The tuberculosis morbidity rate is about 20 per 100 000 population. A tuberculin testing survey among schoolchildren carried out in 1963 with the assistance of WHO and UNICEF showed that the prevalence of infection ranges from one per cent. at the age of six years to 4.5 per cent. at the age of 12. Improved nutrition and housing coupled with effective chemotherapy have helped to reduce the incidence of the disease.

Vaccinations, particularly against the diseases affecting children, are carried out as a routine preventive measure. In 1962, the following immunizations were recorded:

Smallpox	397 696
Diphtheria, whooping-cough and tetanus	109 951
Poliomyelitis (third dose)	16 246
Typhoid and paratyphoid fevers	12 945
BCG	5 050

Specialized Units

In 1963, 85 maternal and child health centres provided medical care for 8824 pregnant women and 7154 infants under one year of age. There were 29 719 attendances by pregnant women and 55 407 by children. All deliveries were attended by a doctor or qualified midwife. In 20 dental health units 26 301 patients were treated; 1532 new patients attended the hospital rehabilitation department and 2300 new patients received consultative services at the psychiatric out-patient clinic. The public health laboratory carried out 70 550 examinations. The school health service, which is the responsibility of the Education Department, was still in abeyance.

Major Public Health Problems

The shortage of specialist medical officers and properly trained nurses continues to be a public health problem, although the situation is gradually improving. In the field of communicable diseases, hydatid disease is still causing concern. Its prevalence among livestock and stray dogs is known to be high and it is believed that the disease is also prevalent in human beings. As regards environmental sanitation, the lack of central sewerage plants in the main towns is a serious problem. It has a direct bearing not only on public health but also on the industrial development of the country, as the disposal of industrial effluents causes various nuisances. The lack of proper slaughter-houses in the small villages is another contributing factor favouring the dissemination of echinococcosis.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In 1960 Cyprus became an independent State and Member of the United Nations. By virtue of the Constitution, a Ministry of Health was created which took over all policy concerned with health.

The period 1955-1964 witnessed a marked improvement in all spheres of social life, including the health of the population. In the field of environmental hygiene, only 57 per cent. of the villages were provided with piped domestic water supply in 1955, whereas in 1964 89 per cent. of the rural population were served with piped safe water. Infectious diseases directly or indirectly related to sanitation showed a very significant reduction. The improvement of

medical care services resulted in a 93 per cent. rise in the number of in-patients in government hospitals during the period, while the increase in the number of beds was only 56 per cent. As a result of the emergency which lasted from 1955 to 1959 and the political unrest which started at the end of 1963, several health projects, including the plan for hospital construction, have had to be either postponed or curtailed. The incomplete collection and registration of vital statistics are other consequences of these events.

National Health Planning

The Ministry of Health, working in association with the Planning Commission for economic and social development, which is a special government agency, initiated in 1961 a five-year development plan whose major objectives are: (a) to ensure a wide and more efficient utilization of medical and paramedical personnel and to make available all types and levels of health services to all citizens through the decentralization of the curative services at the specialist level; (b) to improve and expand the rural health services, both curative and preventive, and bring them close to the homes of the village population; (c) to increase the bed capacity in general hospitals; (d) to advance the plan for the education and training of professional

and paramedical personnel so as to ensure the staffing of all the general hospitals.

The Planning Commission is co-ordinating the development programmes of the various government departments with the overall development programme of the central Government, which it was originally hoped to implement between 1962 and 1966. Periodic evaluations of the progress of the development programmes are made by the Planning Commission and the Council of Ministers.

International Collaboration

Close collaboration is maintained with international organizations, mainly with UNICEF, WHO and the Council of Europe. Technical assistance is rendered by these agencies in the form of fellowships and expert advisers.

Government Health Expenditure

In 1963, total general government expenditure amounted to £ 22.9 million, of which over £ 1 million were devoted to the provision of health services. A further sum of £ 80 991 was spent on capital projects included in special plans for the development and expansion of health services.

FEDERATION OF SOUTH ARABIA¹

Population and Other Statistics

At the last census, taken in February 1955, the population of Aden was 138 441. Population estimates and some other vital statistics for Aden for the years 1963 and 1964 are given in the following table:

	1963	1964
Mean population	225 000	230 000
Number of live births	8 470	7 842
Birth rate (per 1000 population)	37.6	34.1
Number of deaths	2 060	2 074
Death rate (per 1000 population)	9.2	9.0
Natural increase (per cent.)	2.84	2.51
Number of infant deaths	733	728
Infant mortality rate (per 1000 live births)	88.5	92.8

Of the 2074 deaths recorded in 1964 in Aden, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (729), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (512), accidents (111, including 44 in motor-vehicle

accidents), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (101), pneumonia (78), tuberculosis, all forms (64).

The communicable diseases most frequently notified in Aden in 1964 were: influenza (6056), dysentery, all forms (2983), enteric fever (121).

Organization of the Public Health Services

Public health in the Federation of South Arabia, which comprises Aden and a number of states of the Protectorate, comes under a Minister of Health whose permanent secretary is also the Director of the Federal Health Service. All curative and preventive health services are directly organized and supervised by the Ministry of Health. All aid from the United Kingdom of Great Britain and Northern Ireland and from international agencies is channelled through this office. Environmental hygiene is the responsibility of the local authorities with technical guidance and independent appraisal services provided by the Ministry of Health. There are two health administrative regions in the Federation: Aden (urban) and other states (rural). The Director of the Federal Health

¹ Together with non-federated states of the Protectorates.

Service is assisted by a deputy. The Ministry comprises three administrative divisions: budget and finance, general administration and personnel management. There are also six technical divisions: curative and port health services (Aden); curative and preventive services, rural areas (other states); nursing services and personnel training; environmental hygiene; school health services; endemic diseases control.

Two non-federated Eastern Protectorate states (Qu'aiti and Kathiri) have independent health services and each is headed by a senior medical officer. The Director of the Federal Health Service is adviser to these services and has an assistant adviser stationed in the region.

The federal regular army has an independent medical service and its medical officers in rural areas help the health assistants in treating civilian cases while the Federal Health Service provides a medical officer and drugs to the Federal Guards' health services. In the Eastern Protectorate a medical officer belonging to the Assistant Health Adviser's Office runs the Hadrami Bedouin Legion Medical Service, while state forces are looked after by the respective state health services.

Recent Developments 1961-1964

Until 1961 there were five health services administrations in the country: Aden Medical Department, the Federal Health Service, Qu'aiti Health Service, Kathiri Health Service and the Protectorate Health Adviser, who represented the United Kingdom Government. In 1963, when Aden joined the Federation, the Aden Medical Department, the Federal Health Service and the Health Adviser's Office were merged under the Federal Ministry of Health. Under this reorganization the health services were redivided in three echelons: the central hospital, the district hospitals and the rural health units. Training of indigenous staff for paramedical duties has also been organized centrally, while previously it was organized at the periphery.

Hospital Services

In 1963, the Federation of South Arabia had altogether 13 hospitals and establishments for in-patient care, providing 1008 beds (equivalent to a bed/population ratio of 1.4 per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	6
Medical centres (without doctor)	2
Infectious diseases hospitals	2
Maternity clinic	1
Psychiatric clinic	1
Old people's home	1
	820
	14
	18
	80
	20
	56

There were 15 999 admissions during the year.

Out-patient facilities were provided in 1964 at ten hospital out-patient departments, four dispensaries (Aden) and 55 medical aid posts.

Medical and Allied Personnel

At the end of 1963, the Federation of South Arabia had 99 practising civilian physicians, including assistant medical officers, of whom 67 were in government service and 32 in private practice. The doctor/population ratio was 1 to 7500. Other civilian health personnel included:

Dentists	6
Dental mechanics	4
Pharmacists	16
Dispensers	15
Fully qualified midwives	3
Assistant and auxiliary midwives	4
Fully qualified nurses	32
Fully qualified nurses with midwifery qualifications	70
Assistant nurses	24
Nursing orderlies, sick attendants and health trainees	568
Veterinarian	1
Sanitary inspectors	25
Physical therapists	2
Laboratory technicians	21
X-ray technicians	30

Communicable Disease Control and Immunization Services

Malaria control by residual spraying of dwellings used to be an integrated rural health activity. Following a survey in 1962, antimalaria work has been reorganized and a centralized malaria service projected to assess the activities and then start pre-eradication work.

There are approximately seven cases of tuberculosis per 1000 population. Organized tuberculosis control programmes, which include case registration, treatment and BCG vaccination, exist only in Aden and in the vicinity of the district hospitals. A centralized tuberculosis control service for the whole country was projected for 1965-1966. Bilharziasis is confined to a small number of foci. No specific control programme exists. Trachoma is the major cause of blindness in Aden. Since October 1963 a mobile eye clinic which was initiated by the Royal Commonwealth Society for the Blind has been operating in the area.

The following immunizations were carried out in 1963:

Smallpox	39 773
Yellow fever	4 640
Cholera	3 527
BCG	2 758
Diphtheria, whooping-cough and tetanus	546
Typhoid and paratyphoid fevers	333

Specialized Units

In 1964, 67 centres were engaged in maternal and child care. In Aden 4117 deliveries (over 50 per cent. of all births for the state) were attended by a doctor or qualified midwife. The total school population was under medical supervision. Other specialized units included two dental service units, a psychiatric outpatient clinic and a mobile eye clinic. The public health laboratory carried out 142 070 examinations.

Environmental Sanitation

In 1964, of the total population of Aden, 210 000 inhabitants were served with piped water to their dwellings and the remainder had water from public fountains. In the other federated states, with a population of approximately 500 000, there are only a few areas where water is in very short supply. All other areas have good well water and several of the towns have piped water supplies. The situation is steadily improving as the states are installing pumps and boreholes.

Major Public Health Problems

The major public health problems are, in order of priority: control of communicable diseases (malaria, tuberculosis, trachoma and diarrhoeal diseases); training of medical and paramedical personnel; maternal and child health; health education of the public. The health services are still very elementary and until recently activity has been limited to the treatment of minor ailments.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The creation of the Federation in 1959 by the major states of the Western Protectorate has been the most significant development affecting the health services. Prior to the establishment of the Federation, three states of the Western Protectorate had their own independent health services with advisory supervision and development aid from the Office of the Health Adviser for the Protectorates. The health services

in the other eight states of the Western Protectorate were directly administered by the Health Adviser and were generally financed by the United Kingdom Government with minor contributions from some states. After the Federation had been established, a unified Federal Health Service under a Minister of Health was instituted. The accession of Aden to the Federation in January 1963 was another important step towards a unified health service and the major health resources of Aden were made freely available to the whole Federation under the unified Ministry of Health.

The move of the British High Command for the Middle-East Defence to Aden resulted in an increase in the European population and a heavy demand for housing. This caused a boom in the constructional and related trades which in turn attracted a large amount of immigrant labour. The creation of the Federation has brought about an expansion of governmental activity. This, together with increased job opportunities arising from the existence of the armed forces base and the greater trading activities, has resulted in a movement of population to the city of Aden. Communication facilities between Aden, the Protectorate and Yemen have also developed rapidly. Thanks to land reclamation and irrigation development, the area of agricultural land has steadily increased. Irrigation depends mainly on floodwater from Yemen and projects have been initiated with a view to obtaining greater floodwater utilization. All this has helped to raise the economic standard of the rural population. The decade under review has been marked by a noteworthy development of schools and the introduction of education for women in the rural areas.

Government Health Expenditure

In the 1964/65 fiscal year the general government expenditure on health services was 2 053 000 pounds sterling¹ on current account and £ 82 465 on capital account. Thus expenditure on health services by the Federation of South Arabia proper was approximately £ 3 per head.

¹ The official currency in the Federation of South Arabia is the East African shilling (20 EA shillings = £1).

FRENCH SOMALILAND

Population and Other Statistics

At the last census, taken in 1959, the population of French Somaliland was 67 196, and in 1964 the population was estimated to be approximately 80 000.

Mortality statistics are incomplete. Among the main causes of death recorded in 1964 were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (94),

arteriosclerotic and degenerative heart disease and other diseases of the heart (34), pneumonia (33), tuberculosis, all forms (31), anaemias (24), all accidents (15, including 11 in motor-vehicle accidents), cirrhosis of the liver (10).

The communicable diseases most frequently notified in 1964 were: influenza (3964), measles (1271), dysentery, all forms (693), whooping-cough (364), typhoid and paratyphoid fevers (75), malaria, new cases (58), poliomyelitis (28), leprosy (23).

Organization of the Public Health Services

The Ministry of Health was created in 1957 within the Government Council of the Territory. The two main divisions in the Ministry are the Directorate of Public Health and the Service for Public Hygiene and Epidemiology. The Directorate of Public Health is responsible for the technical organization, administration and medical supply, both of the health establishments in urban and rural areas and of the establishments for preventive medicine, and also for the control of endemic diseases. The Service for Public Hygiene and Epidemiology is concerned with the detection and prevention of infectious diseases and the application of public health measures.

Hospital Services

In 1964 in-patient facilities were available at six hospitals which had a total bed capacity of 789 beds (equivalent to 9.9 beds per 1000 population) distributed as follows: 636 beds in one general hospital, 67 in four rural hospitals and 86 in one tuberculosis hospital. A total of 11 185 patients were admitted during the year and received 209 879 days of hospital care. In addition to these hospitals there is also a military hospital with 150 beds which was opened in 1962 and which looks after military personnel and their families.

Out-patient facilities were provided at one hospital out-patient department, one polyclinic, eight dispensaries and four rural medical aid posts, and by two mobile health teams. During 1964, 354 732 consultations were given.

Medical and Allied Personnel and Training Facilities

French Somaliland had 32 doctors in 1964, of whom three were in private practice. The doctor/population ratio was thus one to 2500. Other health personnel included:

Dentists	2
Dental mechanics	2
Pharmacists	4
Fully qualified midwives	4
Other midwives	7
Fully qualified nurses	37
Veterinarian	1
Laboratory technicians	3
X-ray technicians	2
Other scientific personnel	163

A training centre for nursing personnel was opened in 1962 and in 1964 it had 35 students.

Communicable Disease Control and Immunization Services

Tuberculosis is the most serious communicable disease occurring in French Somaliland. Thirty per cent. of six-year-old children have a positive tuberculosis reaction; 7000 tuberculosis patients are registered at the antituberculosis centre; the morbidity prevalence is 76 per cent. among male adults; 65 per cent. of all detected cases are between 15 and 50 years of age. The control of this disease is made difficult because of the mobility of the population and the nomadic life of a great number of tuberculosis patients. Control measures have been intensified along the following lines. A central antituberculosis service which co-ordinates preventive action, case-finding and curative measures has been established. A mass campaign, including BCG vaccination, radiography and health education has been organized, and hospital facilities have been extended.

A small focus of trachoma exists in the suburbs of Djibouti. Of 2000 persons examined in this area in 1964, 55.8 per cent. had trachoma. Cases of poliomyelitis and smallpox occur periodically. The prevalence of venereal diseases is stationary and does not constitute a health problem.

The following immunization procedures were carried out in 1964:

Smallpox	9 717
BCG	3 683
Yellow fever	3 189
Cholera	2 675
Typhoid and paratyphoid fevers, diphtheria and whooping-cough	900
Tetanus	204
Poliomyelitis	176

Specialized Units

In 1964, maternal and child welfare services were based on one pre-natal centre and five child health dispensaries, which were attended by 1236 pregnant women and 1233 children under three years of age. Domiciliary visits were paid to 3089 pregnant women and to 13 606 children under three years. The whole

school population of 5926 children was under medical supervision, which was given at five school health centres. There was one dental health unit which treated 500 patients. The psychiatric clinic was attended by 63 new out-patients. The two public health laboratories carried out 39 763 examinations.

Major Public Health Problems

The most important health problem is the high incidence of tuberculosis. Nutritional deficiencies in children at the weaning age and in adults, particularly in nomads, are also among the major causes of concern. Anaemias, due mainly to lack of folic acid and to vitamin B₁₂ deficiency, are very frequent and constitute a serious health problem.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In application of the law of 1956, a territorial assembly was elected and an executive council of ministers was created to form the Government. In 1958 French Somaliland opted for the status of an overseas territory of the French Republic. The economic development of Djibouti, which has progressed considerably during the decade, is mainly based on the activities of the free port, on the international airport and on the goods traffic of the Franco-Ethiopian railway. This expansion has resulted in increasing urbanization, and over half the total population

of the territory now lives in the capital. An intensive building programme has been started as a result of urban migration. The provision of water has been greatly improved in recent years following new drillings near Djibouti. A great effort has been made in the field of education. The number of schools in the territory rose from 17 with 2364 students in 1960 to 26 with 5926 students in 1964. In the latter year the lycée of Djibouti became a state lycée.

National Health Planning

A five-year public health plan for the territory will be implemented within the framework of the fifth French plan. The plan for the territory was prepared by the Ministry of Health and submitted for approval to the Territorial Planning Commission. It is financed from metropolitan funds, and aims at the expansion of the hospital and rural dispensary network.

Government Health Expenditure

In 1964 the total government expenditure on current account amounted to 1734 million Djibouti francs, of which 305 million (i.e., 17.6 per cent.) were devoted to the provision of health services. This was equivalent to an expenditure of 3800 francs per head on these services, as compared with 3750 francs in 1962. A further sum of 17 million Djibouti francs was spent on capital account for the improvement and expansion of health facilities.

IRAN

Population and Other Statistics

At the last census, taken in November 1956, the population of Iran was 18 954 704. Population estimates and some other vital statistics for the period 1961-1964, the latter based only on reported data, are given in the following table:

	1961	1962	1963	1964
Mean population	20 678 000	21 227 000	22 182 000	22 860 000
Number of live births	882 116	906 703	837 254	904 347
Birth rate (per 1000 population)	42.7	44.4	37.7	39.6
Number of deaths	167 325	158 096	190 002	...
Death rate (per 1000 population)	8.1	7.4	8.6	...
Natural Increase (per cent.) .	3.46	3.70	2.91	...
Number of deaths, 1-4 years *	2 919	2 146	2 817	3 994
Death rate, 1-4 years (per 1000 population at risk) * .	1.7	1.2	1.6	2.2
Number of infant deaths *. .	8 612	8 942	9 468	9 058
Infant mortality rate (per 1000 live births) *	92.0	91.7	106.6	97.7

* In Teheran city only.

The communicable diseases most frequently reported in 1964 were: measles (96 188), trachoma (93 689), whooping-cough (37 972), typhoid and paratyphoid fevers (29 715), tuberculosis of the respiratory system, new cases (26 075), gonorrhoea (11 415), diphtheria (5130), scarlet fever (3458), syphilis, new cases (1490), meningococcal infections (599), poliomyelitis (583), leprosy (479), rabies in man (455).

Organization of the Public Health Services

The Ministry of Health is legally responsible for and supervises all health organizations in the country and their activities. Since 1964, the central organization of the Ministry of Health has comprised the High Imperial Health Council, which advises the Minister on general health policies; the independent organizations directly under the Minister, namely the Pasteur Institute, the Institute of Public Health Research, the Food and Nutrition Institute and the Pharmaceutical

Establishment, and the four health divisions, each under an under-secretary of state who is directly responsible to the Minister of Health. The four divisions are for planning and programmes, executive and technical affairs, administrative affairs, and parliamentary affairs. At the level of each of the 13 provinces into which Iran is divided administratively there is a provincial general director who is the responsible authority. At the city level, there is a local urban health council which is in charge of all health activities.

Hospital Services

In 1962, Iran had 348 hospitals and establishments for in-patient care, providing 24 126 beds (equivalent to a bed/population ratio of 1.1 per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	326
Tuberculosis hospitals	7
Psychiatric hospitals	13
Leprosaria	2
	17 326
	3 080
	2 920
	800

Out-patient facilities were available at 400 hospital out-patient departments and 800 dispensaries, where 110 000 attendances were made during 1964.

Medical and Allied Personnel and Training Facilities

In 1964, Iran had 7090 doctors, equivalent to one doctor per 3200 inhabitants. Other health personnel included:

Medical assistants	304
Dentists	1 291
Pharmacists	2 275
Pharmaceutical assistants	500
Fully qualified midwives	1 357
Assistant midwives	399
Fully qualified nurses	1 797
Assistant nurses	979
Nursing aides	5 427
Veterinarians	641
Assistant veterinarians	434
Sanitary engineers	69
Sanitary inspectors	432
Laboratory technicians	164
Radiographers	54
Social workers	190

There are seven medical schools in Iran with an annual output of 600 graduates. There are eight nursing schools from which 260 nurses graduate annually, 18 schools for nurse aides with 350 graduates a year, and two nurse-midwifery schools. A post-graduate school for sanitary engineering has been started in the Medical Faculty of Teheran University. A school for social workers was established in 1958.

Communicable Disease Control and Immunization Services

Malaria is one of the major public health problems in Iran. In 1957 a malaria eradication programme, assisted by UNICEF and WHO, was started. By 1964, of the 15.7 million inhabitants at risk, 7.3 million were in areas in the consolidation phase and 3.9 million in areas in the attack phase. In the northern zone, maintenance operations are now envisaged. In the southern zone, where resistance of *Anopheles stephensi* to DDT and dieldrin has been encountered, a reorientation of the programme will be necessary. Insufficient geographical reconnaissance, and tribal movements are additional factors that have made the eradication of the disease more difficult.

Tuberculosis is widespread. The number of cases registered at the tuberculosis control centres in Iran increased from 7811 in 1961 to 10 162 in 1964. Since 1959, 13 tuberculosis control centres have been set up. In addition, case-finding is being conducted by a mobile laboratory and radiographic unit. There are also 50 two-person teams operating under the supervision of the tuberculosis control centres. Since 1964 tuberculin tests have been carried out in all elementary schools. The existing tuberculosis centres will ultimately be integrated into the general out-patient clinics and health centres.

Bilharziasis is endemic in certain regions of Iran and threatens to become a major health problem as new irrigation projects develop. Trachoma is the principal cause of blindness. The disease is prevalent mainly in the area of the Caspian, the central plateau and the southern region. A trachoma control project was started in 1964. It is based on treatment of the infected individual, health education and environmental sanitation. Venereal diseases are also prevalent. Special consideration is being given to the problem of endemic treponematoses. Case-finding is done by compulsory examinations and blood tests and an intensive education campaign is being carried out. Although poliomyelitis virus has been prevalent in Iran for many years the disease has never reached epidemic proportions. However, the majority of persons have been infected in early life, and mass vaccination has therefore not been considered necessary.

The following immunization procedures were carried out in 1964:

Smallpox	6 022 984
Tetanus (simple or combined with diphtheria and whooping-cough)	1 795 050
Diphtheria (simple or combined with tetanus and whooping-cough)	1 794 515
BCG	462 670
Typhoid and paratyphoid fevers	345 566
Cholera	36 815

Specialized Units

In 1964, there were 38 pre-natal and 44 child health centres engaged in maternal and child health care. They were attended by 83 609 pregnant women, 18 484 infants under one year and 128 531 children aged between one and five years. A total of 20 714 deliveries were attended by a doctor or qualified midwife. There were 82 school health units which supervised the health of 683 500 schoolchildren (37 per cent. of the total school population). The 310 dental service units treated 1 862 100 patients. There were three independent medical rehabilitation centres and a hospital rehabilitation department. The 22 psychiatric out-patient clinics were attended by 5258 new patients. Other specialized units included 16 tuberculosis control centres, 20 trachoma control services, 30 eye clinics, 12 mobile leprosy teams, and 17 centres and five mobile teams for venereal disease control. By 1964, 35 sea, air and land quarantine posts had been established in the country.

Major Public Health Problems

The major health problems in Iran can be divided into the following categories:

- ecological and social—low protein intake, unbalanced diet and inadequate food hygiene;
- environmental—poor sanitary conditions, particularly in the rural areas, with a resulting high prevalence of enteric infections and parasitoses and other infectious diseases;
- organizational—inadequate coverage with health facilities, unequal distribution of medical personnel with a concentration of doctors in the main cities, shortage of medical auxiliaries;
- administrative—poor reporting system of statistical data.

There are also some regional problems of great importance, such as the difficult progress of malaria eradication in the southern part of Iran, urinary bilharziasis in Khuzistan, and hookworm disease in the Caspian area.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In order to make available to the inhabitants in the provinces, cities and villages a more comprehensive health service, the Health Corps was organized, and subsequently a considerable proportion of the Ministry of Health activities have been carried out through this channel. The Health Corps consists of mobile teams

each made up of four army conscripts, a physician and three assistants. This service has proved extremely useful.

One of the most important events in the social and economic development of the country has been the land reform, which transferred the ownership of the cultivated lands to the villagers themselves, consequently bringing about an improvement in their economic and financial status. The Literacy Corps has played an important part in the social and cultural development of the country. High-school graduates, due for military service, are drafted to the "Army of knowledge" and are dispatched to the rural areas to teach the inhabitants of the villages and their children and give them some knowledge of reading, writing, etc.

Formerly all activities were carried out from headquarters, but with the decentralization and delegation of responsibility to the general directors of the provinces, the necessary authority has also been given to the urban health officers to carry out their duties independently. A local urban health council has been formed in each city with the health officer as executive officer of the council. The General Department of Sanitary Engineering of the Ministry of Health has made great progress in improving general environmental sanitation in the rural areas, by providing safe drinking-water, sanitary pit-prives and bath-houses. In the urban areas, too, general conditions have been greatly improved, with stringent control of drinking-water supplies, sewage and garbage disposal, food production, distribution and sales.

National Health Planning

Increased attention has been given to planning and evaluation in Iran in recent years. A new under-secretary for planning was appointed in the Ministry of Health and two new general departments—the General Department for Planning and Programmes, and the General Department for Statistics and Evaluation—have been established. The co-ordination of the health plan with other development plans is undertaken by the Plan Organization. There is a committee in each ministry, composed of staff members of the Plan Organization and of the ministry concerned. The third five-year health plan was prepared by such a committee and was submitted to the Plan Organization for inclusion in the third national development plan, which was launched in 1962. The Ministry of Health, together with the agencies concerned, has commenced the preparation of a twenty-five-year health plan for Iran.

The prime objective of the third health plan is to provide an integrated health service. To achieve this objective, a major reorganization will take place. The

Ministry of Health will gradually transfer its executive functions in medical care and concentrate on planning and co-ordination. One of the most important activities of the Ministry of Health during the third plan will be to improve health statistics. Great emphasis will be placed on the training of nurses, nurse aides and medical technicians. Hospital construction will be closely geared to the availability of personnel. The environmental health service will be strengthened substantially in order to provide a safe environment, particularly in rural areas. First priority will go to the provision of safe water. School health programmes, health education and maternal and child health services will be improved and receive more attention. Certain targets have been established for general hospital and tuberculosis beds, out-patient departments, health centres, etc. The most important policy change in the new plan is the co-ordination of health activities. A national research council will also be organized.

Medical and Public Health Research

Medical and public health research in Iran is undertaken in the universities, hospitals, departments of the Ministry of Health and at the five government-sponsored scientific research institutes: the Pasteur Institute, the Razi Institute, the Cancer Institute, the Institute for Food and Nutrition and the Institute of Public Health Research. Co-ordination of research is assured by the Health Planning Committee of the Ministry of Health, the Plan Organization, and the Scientific Research Council and its committees on medical and public health research. The Iranian

National Oil Company supports extensive research programmes in its medical and public health services. During the period 1961-1964 the majority of the research programmes carried out were "research for immediate action", feasibility studies and applied research. However, several basic research projects were also carried out. Funds spent on medical research by the scientific research institutes are mostly provided by the Plan Organization.

International Collaboration

UNICEF and WHO have assisted Iran in many of the country's health programmes. Under the Central Treaty Organization assistance has been received from the United States of America and the United Kingdom in the health field. The Co-operative for American Relief Everywhere also provides help by donating milk, flour and cooking oil.

Government Health Expenditure

In the 1963/64 fiscal year the total public expenditure on capital and current account amounted to 176 662 million rials, of which 9566 million rials (i.e., 5.4 per cent.) were devoted to health services. Current expenditure on health services, which accounted for 7493 million rials, was equivalent to 333 rials per head. Capital expenditure for the improvement and expansion of health facilities amounted to 2073 million rials; of this sum 769 million rials were spent on projects included in health development plans.

IRAQ

Population and Other Statistics

Mean population estimates for the years 1961-1963 are as follows:

1961	6 754 400
1962	6 862 800
1963	6 974 300

Of the 26 609 deaths recorded in 1963, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (10 782), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (2224), all accidents (1932, including 358 in motor-vehicle accidents), infections of the newborn and other diseases peculiar to early infancy and immaturity (1915),

tuberculosis, all forms (1137), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1048), pneumonia (1019), malignant neoplasms (682), homicide and operations of war (551), anaemias (443), hypertension (307), nephritis and nephrosis (294).

The communicable diseases most frequently notified in 1964 were: measles (59 481), tuberculosis, all forms, new cases (14 701), malaria, new cases (8399), whooping-cough (8368), dysentery, all forms (8277), typhoid and paratyphoid fevers (1840), gonorrhoea (1473), diphtheria (1304), meningococcal infections (403), poliomyelitis (226), syphilis, new cases (220), infectious hepatitis (205).

In 1963, there were 11 142 cases of bilharziasis and, in 1962, 193 588 cases of trachoma.

Organization of the Public Health Services

The Ministry of Health is responsible for the public health services, both curative and preventive. These services are rendered free of charge to the public at all levels. The Ministry of Health is also the authority for the supervision, co-ordination and enforcement of health laws and regulations. The staff of the Ministry of Health comprises, under the Minister, the Directors-General of Health, Preventive Medicine, Medical Supply, Rural Health Services, and Medical Services. There are also the Inspector-General of Health and the Secretariat. The army, police, railway and port medical services have their own administrative and financial organization but they follow the general pattern of, and co-operate fully with, the Ministry of Health. Private medical practice, a few small private hospitals and clinics, voluntary philanthropic institutions and local government health services are subject to the supervision of the Ministry of Health.

The financial sources of the health budget are: the regular government budget, the health portion of the development budget, the local government budgets, the budgets of the special departmental health services (e.g., for industrial health), voluntary contributions, rural health contributions and other sources such as a lottery.

Hospital Services

In 1963 Iraq had 131 hospitals and medical care establishments providing altogether 14 421 beds—equivalent to 2.1 beds per 1 000 population—distributed as follows:

Category and number	Number of beds
General hospitals	87
Tuberculosis hospitals	10
Infectious diseases hospitals	5
Maternity hospitals	5
Paediatric hospitals	13
Psychiatric hospitals	2
Children's and welfare hospitals	4
Ophthalmological hospitals	4
Leprosarium	1
	7 891
	2 440
	328
	305
	780
	2 077
	108
	167
	325

Out-patient facilities were available in 1964 in 152 hospital out-patient departments, 25 polyclinics and 811 dispensaries and from 41 mobile health units. During 1964, 18 229 732 attendances were recorded.

Medical and Allied Personnel and Training Facilities

In 1963 there were 1 436 doctors, of whom 992 were employed by the Government. The doctor/population ratio was thus one to 4 900. There were also:

Dentists	231
Dental practitioners	145
Pharmacists	528
Assistant pharmacists	174
Fully qualified and trained midwives	650
Fully qualified and trained nurses	1 041
Sanitary inspectors	167
Laboratory assistants	229
X-ray technicians	181
Health officials	970
Dressers	1 442

The shortage of medical and paramedical personnel, and the immediate need to staff the new projects which are being initiated under the national health plan, make it clear that the highest priority must be given to education and training. There are already two medical colleges in Iraq—one in Baghdad and one in Mosul; a third school is planned in Basrah. There are also a dental college and two colleges of pharmacy. Other training facilities include schools for the training of nurses, sanitarians, assistant medical officers, laboratory and X-ray technicians and other para-medical personnel.

Communicable Disease Control

Malaria eradication has been in progress for several years. Smallpox has not occurred for many years. Tuberculosis, bilharziasis, ancylostomiasis, trachoma and intestinal parasitosis are some of the major communicable diseases. Plans for the control of a number of them have been formulated and eradication campaigns against others are already well under way.

Chronic and Degenerative Diseases

A cancer institute was being completed in 1965, with a cancer research laboratory, 150 beds and modern diagnostic and therapeutic equipment, including a cobalt unit, and a linear accelerator.

Specialized Units

In 1963, maternal and child health services were based on 57 pre-natal centres and 68 child health units; they provided services to 17 635 pregnant women, 54 148 infants under one year of age and 34 741 children aged between one and five years. Domiciliary care was given to 5433 pregnant women, 15 275 infants under one year of age and 11 119 pre-school children. A total of 70 746 deliveries (about 50 per cent. of all births) were attended by a doctor or a qualified midwife. There were 22 school health units which looked after 713 973 schoolchildren. Of the total school population, 65 per cent. had access to the school health services. There were 37 dental health units which treated 834 079 patients and an independent medical rehabilitation centre where 2768 new patients were treated. Other specialized

units included 15 tuberculosis dispensaries, four venereal disease clinics and 14 trachoma posts.

Environmental Sanitation

Of the total population of Iraq in 1963, 4 514 700 were supplied with piped water to their dwellings, 32 000 had to rely for water on public fountains, 450 700 used community or private wells and 2 018 000 were supplied from other sources. In the same year, 146 000 inhabitants were provided with sewerage and sewage treatment facilities and 4 514 700 had individual installations. Four more sewerage and sewage treatment plants were nearing completion; they would serve between 54 000 and 69 000 persons.

Major Public Health Problems

Although the main endemic diseases, such as malaria, bilharziasis, tuberculosis, trachoma and intestinal parasitic diseases, continue to be the major public health problems, their incidence is decreasing, thanks to better sanitation and hygiene, education, the higher standard of living and the eradication and control projects. On the other hand, chronic and degenerative diseases and health problems due to industrialization are on the increase. A very important problem is the shortage of medical and particularly of paramedical personnel. Nurses, technicians, health educators and sanitarians are urgently needed. A great deal of effort and funds are being devoted to the training of these categories of personnel.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The period 1955-1964 was characterized by the increasing industrialization of the country, the nationalization of major industrial concerns, the construction of transport facilities and the provision of electricity and irrigation systems for the whole country. Free education was extended to all levels. The gradual rise in the *per caput* income resulting in a rise in the standard of living has helped to improve health conditions, nutritional standards and housing.

National Health Planning

The National Planning Board is composed of a number of ministers and other full-time members under the chairmanship of the Prime Minister. It is the supreme body for overall national planning. The plans are usually prepared for five-year periods. The Ministry of Planning is in charge of the execution, follow-up and co-ordination of the plans. In many cases it delegates its authority for the execution of some of the plans to the ministries immediately

concerned. The various ministries and institutions prepare their five-year plans and send them to the Ministry of Planning for study and co-ordination with the plans of other ministries. After approval by the Ministry of Planning, the plans are sent to the National Planning Board for allocation of funds and final decision. The budget of the Planning Board is financed from the oil revenue.

The five-year national health plan which covers the period 1965-1969 aims at the expansion of free curative and preventive services and the provision of the necessary medical and paramedical personnel; 26 670 000 Iraqi dinars have been allocated for this plan, which includes projects for the completion of the Medical City in Baghdad, the teaching hospital in Basrah and the leprosy colony in Amarah. Further projects concern the construction of five hospitals with 220 beds each, eight hospitals with 50 to 100 beds each, three tuberculosis hospitals, one paramedical training institute, one serum and vaccine institute, five frontier quarantine stations, a public health laboratory in Baghdad, 171 primary rural health centres, and 700 secondary health centres. A mobile clinic will be attached to each secondary health centre. The Ministry of Health closely co-operates with the Ministry of Municipal and Village Affairs in the planning and construction of drinking-water schemes, slaughter-houses and drainage systems. It also collaborates with the Ministry of Housing in the execution of its five-year plan for the construction of low-cost housing for the low income groups.

Medical and Public Health Research

During the period under review a research council has been established to stimulate, assist and co-ordinate research in general. It is an autonomous body with its own budget and personnel. In the field of public health the various projects have provided opportunities for operational research.

International Collaboration

FAO, IAEA, ILO, UNICEF and WHO are the main international organizations with whom the Ministry of Health is collaborating. There is also collaboration with the neighbouring countries in the control and eradication of communicable diseases, such as malaria. Inter-country meetings are held twice a year.

Government Health Expenditure

In the fiscal year 1964/65 the total general government expenditure was 145 million Iraqi dinars, of which 8 million dinars (i.e., 5.5 per cent.) were devoted to the provision of health services.

ISRAEL

Population and Other Statistics

At the last census, taken in May 1961, the population of Israel was 2 183 332. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	2 189 900	2 288 200	2 379 700	2 477 500
Number of live births	54 869	56 356	59 491	63 549
Birth rate (per 1000 population)	25.1	24.6	25.0	25.7
Number of deaths	12 663	13 701	14 425	15 491
Death rate (per 1000 population)	5.8	6.0	6.1	6.3
Natural increase (per cent.) .	1.93	1.86	1.89	1.94
Number of deaths, 1-4 years .	388	344	331	341
Death rate, 1-4 years (per 1000 population at risk)	1.6	1.6	1.4	1.4
Number of infant deaths .	1 598	1 840	1 636	1 790
Infant mortality rate (per 1000 live births)	29.1	32.6	27.5	28.2
Number of maternal deaths * .	29	18	23	8
Maternal mortality rate (per 1000 live births) *	0.68	0.39	0.50	0.17

* Among the Jewish population only.

In 1964, the total number of deaths was 15 491, of which 13 708 were in the Jewish population. The main causes of death among the Jewish population were: arteriosclerotic and degenerative heart diseases (3645), malignant neoplasms (2346), vascular lesions affecting the central nervous system (1697), accidents (608, including 284 in transport accidents), senility without mention of psychosis, ill-defined and unknown causes (410), pneumonia (402), infections of the newborn and other diseases peculiar to early infancy and immaturity (348), congenital malformations (302), birth injuries, post-natal asphyxia and atelectasis (266), hypertension (243), chronic rheumatic heart diseases (222), nephritis and nephrosis (134), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (98).

In 1964 the communicable diseases most frequently notified were: measles (7415 cases in children under five years of age), bacillary dysentery (2801), infectious hepatitis (1720), tuberculosis, all forms, new cases (992), scarlet fever (598), whooping-cough (490 cases in children under five years of age), gonorrhoea (382), typhoid and paratyphoid fevers (359), syphilis, new cases (324). There were also 83 cases of murine typhus.

Organization of the Public Health Services

In Israel, curative health services are provided by voluntary health insurance agencies to over three-

quarters of the population. The Government provides services in all areas which are not otherwise covered. Preventive services, both personal and communal, are largely a government responsibility. Thus the Government is the principal public health agency, while the voluntary health insurance funds, particularly the one affiliated with the General Federation of Labour, are mainly responsible for the provision of medical care. However, about 40 per cent. of all hospital beds are government-owned.

The Ministry of Health, which is the responsible government body in health matters, operates through three main divisions: (a) the Division of Curative Services, which is responsible for government-owned hospitals and health centres, for the supervision and licensing of all non-government hospitals and for the allocation of grants-in-aid to all non-profit hospitals according to bed strength; (b) the Regional Services Administration, which deals with public health proper, operating through 14 public health offices in the field; (c) the Division of Mental Health.

Certain health areas are under the jurisdiction of ministries other than the Ministry of Health. Co-ordination is ensured at all levels through an inter-departmental committee composed of the directors-general of the social service ministries (health, labour, education, welfare and social insurance).

The country is divided into six districts, which are sub-divided into 14 sub-districts. District health officers are charged with the responsibility for the health services in their respective districts. A number of municipalities maintain some health services.

Hospital Services

In 1964, Israel had 130 hospitals with a total bed capacity of 17 612 beds—equivalent to 7.11 beds per 1000 population. Included in these total figures are the following establishments:

Category and number	Number of beds
General government hospitals . . . 11	3 014
General municipal hospitals 2	992
Private non-profit general hospitals 14	3 485
Private profit general hospitals . . 5	298
Rural hospitals 3	56
Tuberculosis hospital 1	434
Maternity hospitals 4	171
Paediatric hospitals 2	57
Psychiatric hospitals 40	5 745
Chronic diseases hospitals 30	1 746
General surgical hospital 1	25
Mental deficiency hospitals 17	1 589

In 1964 altogether 311 886 admissions were recorded.

Out-patient medical services are provided mainly at the polyclinics of the voluntary health agencies. There are about 1000 such units.

Medical and Allied Personnel and Training Facilities

In 1964, there were 5928 doctors—equivalent to one doctor per 418 inhabitants. Other health personnel included in 1963:

Dental surgeons	1 191
Dental practitioners	558
Pharmacists	1 369
Fully qualified midwives	25
Assistant midwives	325
Fully qualified nurses	2 500
Assistant nurses	3 875
Auxiliary nurses	715
Veterinarians	198
Sanitary engineers	50
Sanitary inspectors	500
Physical therapists	186
Laboratory technicians	508
X-ray technicians	337

In addition to the medical school at the Hebrew University in Jerusalem, a medical school was opened at the university in Tel Aviv in 1964, taking students for the clinical years as a beginning.

Communicable Disease Control and Immunization Services

The malaria eradication programme has been making steady progress. The number of cases dropped from 74 in 1960 to 20 (all of them imported) in 1964.

The tuberculosis mortality is about four per 100 000; 75 per cent. of the deaths were in patients over 50 years of age and almost 40 per cent. in patients aged 70 and over. Since the administration of Sabin live vaccine has been introduced as a routine procedure the number of poliomyelitis cases has dropped to an insignificant level. Venereal diseases are limited in their prevalence but there is a definite increase in the incidence among the young.

In 1963, the following immunization procedures were carried out:

Tetanus	170 462
Diphtheria	104 453
Smallpox	71 583
Whooping-cough	65 974
BCG	40 910

It is estimated by the Ministry of Health that in 1963 95 per cent. of newborn infants received at least two doses of the three types of live poliovirus vaccine before their first birthday.

Chronic and Degenerative Diseases

Chronic and degenerative diseases have become increasingly important, as can be seen from the list of main causes of death. The Ministry of Health, in co-operation with the Israel Cancer Association, has been promoting the establishment of cancer detection clinics. In the field of rehabilitation, effective co-ordination has been organized between chronic wards in regional hospitals and public health officers and nurses in the field for the assessment and conservation of the rehabilitation potential of discharged patients.

Specialized Units

In 1964, 624 maternal and child health centres provided services for 43 000 pregnant women, 50 132 infants under one year (90 per cent.) and 136 836 children aged between one and five years (75 per cent.). There were 78 132 domiciliary visits to pregnant women, 163 865 to children under one year and 191 390 to pre-school children. A doctor or qualified midwife attended 95 per cent. of all deliveries. There were 1186 school health units which supervised 87.8 per cent. of the children in elementary schools, 65.6 of the students in high schools and 35.6 of the students in vocational schools.

About 95 per cent. of all employees are covered by the voluntary health insurance (over 75 per cent. by the workers' sickness insurance fund of the General Federation of Labour) for medical and health services, with the industry participating in the cost. A limited number of industrial establishments have staffed first aid posts; the majority have first aid workers trained by the insurance fund of the General Federation of Labour. In the case of industrial accidents, 100 per cent. state coverage of medical costs is provided by the National Insurance Law.

Other specialized units include 20 out-patient clinics for psychiatric diseases, 18 regional chest clinics and four public health laboratories.

Environmental Sanitation

In 1964, in 78 urban communities, 94 per cent. of the population were provided with piped water to their dwellings and six per cent. had to depend on other sources. In 815 rural communities, 84 per cent. of the inhabitants had piped water to their dwellings, two per cent. had to depend on public fountains and fourteen per cent. on other sources. Seventy-eight urban and 655 rural communities had sewerage systems while 65 urban and 600 rural communities had sewage treatment facilities.

Major Public Health Problems

The major public health problem in Israel is administrative and is related to the national organization and streamlining of health services and medical care, and to the effort of reducing and eliminating duplication of services and the waste of funds and professional manpower. Connected with this central problem is the shortage of hospital beds and the shortage of doctors in outlying areas because of maldistribution.

The health problems proper are those encountered in the more industrialized countries, namely cardiovascular and degenerative diseases, malignant neoplasms and accidents. Air pollution is also causing concern in some of the larger cities.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade under review, immigration remained the dominating feature in the development of the country. The industrial evolution, economic prosperity and the growing interest taken by the health authorities in housing problems have all contributed to a remarkable improvement in the standard of housing. Growing industrialization, urbanization and particularly motorization have created problems of air pollution in some of the urban centres.

National Health Planning

Israel has so far neither a statutory health planning authority nor a comprehensive health plan, but there

has been a great deal of planning of specific programmes. These include a scheme for national health insurance prepared by an interdepartmental committee and the planning of hospital facilities by an *ad hoc* committee. In the latter case the objective is to maintain for a decade a rate of 3.0 to 3.2 beds per 1000 population in general hospitals. The beds are to be distributed between regional and central hospitals. A special hospital planning unit has been established within the Ministry of Health.

International Collaboration

Bilateral programmes in the field of technical assistance to developing countries included programmes in Israel and assignment of experts for service in the foreign countries. During the period 1960-1964, 270 trainees studied in Israel and over 200 Israeli experts served in African countries.

Government Health Expenditure

In the fiscal year 1961/62 the total general government consumption expenditure was I£ 1091 million of which I£ 91.1 million (i.e., 8.4 per cent.) were devoted to provision of health services. This was equivalent to an expenditure of I£ 41.2 per head on these services. A further sum of I£ 3.6 million was spent on capital account by government agencies for the improvement and expansion of health facilities.

JORDAN

Population and Other Statistics

At the last census, taken in November 1961, the total population of Jordan was 1 706 226. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	1 706 000	1 727 000	1 827 000	1 898 000
Number of live births	70 775	86 397	84 544	86 327
Birth rate (per 1000 population)	41.5	50.0	46.3	45.5
Number of deaths	12 348	12 133	11 697	11 380
Death rate (per 1000 population)	7.2	7.0	6.4	6.0
Natural increase (per cent.)	3.43	4.30	3.99	3.95
Number of infant deaths	4 274	4 280	4 189	4 175
Infant mortality rate (per 1000 live births)	60.4	49.5	49.5	48.4
Number of maternal deaths	77	79	66	72
Maternal mortality rate (per 1000 live births)	1.1	0.9	0.8	0.8

Of the 11 380 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (2281), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1824), pneumonia (1329), infections of the newborn and other diseases peculiar to early infancy and immaturity (1317), arteriosclerotic and degenerative heart diseases and other diseases of the heart (1147), bronchitis (926), all accidents (482, including 24 in motor-vehicle accidents), measles (377), vascular lesions affecting the central nervous system (230), malignant neoplasms (203), tuberculosis, all forms (135), nephritis and nephrosis (79).

Hospital Services

In 1965, Jordan had 59 hospitals, of which 28 were provided by the government services. The total of

3483 beds (1.78 beds per 1000 population) was distributed as follows:

Category and number	Number of beds
General hospitals	29
Tuberculosis hospitals	4
Maternity hospitals	12
Infectious diseases hospitals	2
Paediatric hospitals	4
Psychiatric hospital	1
Ophthalmological clinics	2
Gynaecological hospital	1
Hospital for ear, nose and throat diseases	1
Leprosarium	1
General surgical hospitals	2
	1 972
	306
	225
	99
	177
	400
	102
	18
	31
	30
	123

Out-patient care was provided in 1965 at seventeen hospital out-patient departments, where 109 087 new patients attended, and at 228 general clinics.

Medical and Allied Personnel

At the end of 1965, 417 doctors, including 176 doctors in government service, were practising in Jordan. The doctor/population ratio was one to 4700. Other health personnel included:

Dentists	62
Pharmacists	193
Fully qualified midwives	280
Fully qualified nurses	272

Immunization Services

The following immunization procedures were carried out in 1965:

Smallpox	117 947
Poliomyelitis	94 515
Cholera	51 356
Diphtheria, whooping-cough and tetanus	30 648
Typhoid and paratyphoid fevers	25 596

Specialized Units

In 1965, 82 735 pregnant women, 67 739 infants under one year of age and 71 720 children aged between one and six years attended the 38 maternal and child health centres.

There is a mental health clinic at the government mental hospital in Bethlehem, where 370 new patients were seen in 1965. Jordan also has 14 public health laboratories and 15 X-ray centres.

Environmental Sanitation

At the end of 1964, the population of Jordan lived in 1132 communities, of which 51 were provided with piped water systems. Of the total population, 885 000 inhabitants were provided with piped water to their dwellings, 229 800 had to rely on public fountains and the rest on other sources. With regard to sewage disposal, 13 communities with 115 000 inhabitants were provided with sewerage systems and nine communities with 65 900 inhabitants had sewerage and sewage treatment facilities.

Government Health Expenditure

In the 1964/65 fiscal year the total Ministry of Health expenditure on current account was 1 408 776 Jordan dinars. This was equivalent to an expenditure of 0.73 dinars per head.

KUWAIT

Population and Other Statistics

The last census, taken on 25 April 1965, showed a population of 467 339. Population estimates and other vital statistics for the period 1961-1964 are given in the following table.

	1961	1962	1963	1964
Mean population	322 000	353 000	388 000	426 000
Number of live births	12 942	15 204	17 722	19 357
Birth rate (per 1000 population) . . .	40.2	43.1	45.7	45.4
Number of deaths	2 504	2 180	2 139	2 611
Death rate (per 1000 population) . . .	7.8	6.2	5.5	6.1
Natural increase (per cent.)	3.24	3.69	4.02	4.93
Number of infant deaths	434	482	739	987
Infant mortality rate (per 1000 live births)	33.5	31.7	41.7	51.0
Number of maternal deaths *	6	2	6	2

* These figures refer only to one maternity hospital.

Of the 2611 deaths recorded in 1964, the main causes were: chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (694), infections of the newborn and other diseases peculiar to early infancy and immaturity (303), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (239), pneumonia (238), accidents (232, including 178 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (219), tuberculosis, all forms (115), vascular lesions affecting the central nervous system (86), malignant neoplasms (85), congenital malformations (43).

In 1962, among the communicable diseases most frequently notified were the following: measles (1017), dysentery (543), typhoid and paratyphoid fevers (180),

whooping-cough (146), diphtheria (105), infectious hepatitis (46), influenza (44), poliomyelitis (39), malaria, new cases (24), leprosy (13).

Organization of the Public Health Services

The Ministry of Public Health, which is responsible for all health matters, is divided into a technical and an administrative branch. Each of these branches is headed by an assistant under-secretary. The technical branch has two divisions, each headed by a director, for curative and preventive health services respectively. There are no local or provincial health organizations in the country.

Hospital Services

In 1963, Kuwait had 12 government hospitals and four private profit-making general hospitals. The government hospitals provided 2982 beds (7.69 per 1000 population) and admitted 37 627 patients during 1963. These government hospitals comprised:

Category and number	Number of beds
General hospitals	2
Tuberculosis hospitals	4
Infectious diseases hospitals	2
Maternity hospital	1
Psychiatric hospitals	2
Eye and ear clinic	1
	1 202
	924
	132
	266
	266
	192

Out-patient care facilities were provided at 16 hospital out-patient departments, 11 polyclinics and 25 dispensaries, where altogether more than 2.5 million attendances were recorded during 1964. In addition to these establishments there was also a mobile health unit, providing general medical care.

Medical and Allied Personnel and Training Facilities

In 1963, Kuwait had 449 doctors, of whom 390 were in government service. There was thus one doctor to 860 of the population. Other health personnel included:

Pharmacists	56
Fully qualified nurses	245
Nurses with midwifery qualifications	419
Assistant nurses	1 126
Veterinarians	29
Sanitary engineers	20
Sanitary Inspectors	25
Laboratory technicians	92
X-ray technicians	60

Training facilities in Kuwait include the school of assistant sanitarians established in 1957, the school of assistant nurses opened in 1958, the nursing college

opened in 1962 and the school for assistant pharmacists established in 1963. Doctors, all of whom have foreign medical qualifications, are encouraged by scholarships and fellowships to take higher qualifications abroad.

Communicable Disease Control and Immunization Services

The communicable diseases most prevalent in Kuwait are tuberculosis and trachoma. Tuberculosis presents a particularly serious health problem, as many tuberculosis cases from neighbouring countries are encouraged to immigrate because of the medical treatment which is provided free to all inhabitants of Kuwait. These immigrants, mostly old and advanced cases, constitute a serious source of infection. Tuberculosis is also spreading among the foreign labourers, who, while waiting for employment, live under overcrowded and very insanitary conditions. As they suffer from malnutrition and have no means of livelihood they are particularly prone to tuberculosis. The infection rate is also very high among the bedouin living in the rural areas. The health authorities have started a control project with the assistance of WHO.

Following the trachoma survey carried out in 1961 with a view to establishing a pilot control project, examination and treatment of schoolchildren and kindergarten children have been initiated.

Venereal diseases are also common in Kuwait. Patients are examined and treated at the family planning centre. Malaria, influenza and bilharziasis do not present any serious health problems. It is, however, anticipated that malaria may become a health hazard when Kuwait draws water from Shatt al Arab.

Immunization services provided in 1963 by the preventive section of the Ministry of Public Health included:

Smallpox	159 128
Poliomyelitis (live vaccine given in three doses)	110 000
Poliomyelitis (killed vaccine)	1 011
Diphtheria and whooping-cough	28 836
Cholera	21 562
Tetanus	3 284
Typhoid and paratyphoid fevers	1 394
Yellow fever	741

Chronic and Degenerative Diseases

Cardiovascular diseases and cancer are important causes of morbidity and mortality. In 1963, the Ministry of Public Health established a radiotherapy centre for the treatment of cancer. The centre is provided with two units for deep X-ray treatment and another unit for superficial X-ray treatment, as well as equipment for radium and cobalt therapy.

Specialized Units

In 1964, ten maternal and child health units provided care for 22 340 pregnant women and 34 510 pre-school children. Of the total number of 19 357 deliveries, 8.9 per cent. were attended by a doctor and 80.5 per cent. by a midwife. Services were provided to 132 872 schoolchildren by 162 school health units, including five specialized clinics. Twenty-seven dental health units treated 198 233 patients. There were four physical medicine departments attended by 4776 new patients and an independent medical rehabilitation centre attended by 866 new patients. Other health care units included a psychiatric unit, a tuberculosis out-patient clinic, a leprosy clinic and a trachoma clinic.

Major Public Health Problems

The great number of transient inhabitants and the uncontrolled movements of the population constitute a considerable health hazard and put a heavy burden on the health services of the country. Furthermore the free medical services available in the country attract a large number of sick people from the neighbouring countries. The shortage of medical and nursing personnel is another major health problem.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade was marked by a considerable effort in the field of education with the establishment of new schools and an active campaign against illiteracy conducted by the Ministry of Social Affairs and Labour Welfare in collaboration with the Ministry of Education. The Government also provided a number of facilities for students in teacher-training schools and technical colleges. The students are given free lodging, food and clothing and a monthly stipend. In 1955, the Ministry of Education established its central kitchen to provide proper nutrition to all school-children.

The economic changes which took place during the decade have greatly affected the social life and the health situation in Kuwait. The Ministry of Social Affairs and Labour Welfare, which was established in 1954, has made comprehensive provisions for public assistance in various forms. This ministry was also able to obtain the passing of a minimum wage law for government workers, regulations safe-

guarding the interests of workers employed in the private sector and a public assistance law.

The Kuwait Municipality introduced a new town planning scheme under which the old and dilapidated houses of the capital were demolished and replaced by economic and sanitary homes for the low income group. New settlements were also created outside the town perimeter. The tremendous increase in population and the lack of water resources in Kuwait caused the Government to build water distillation plants which can produce 16 million gallons of water a day. The introduction of television has enabled weekly health education programmes to be undertaken.

National Health Planning

Until 1962 planning in Kuwait was on a project basis and unco-ordinated. In that year a Planning Board was established for the purpose of drawing up a long-term development plan. The Planning Board includes members from the Ministries of Public Works, Education, Public Health, Social Affairs and Labour Welfare, Finance and Industry and Commerce. In each Ministry there is a planning committee responsible for planning within the Ministry. The Planning Board formulates the national plan for a five-year term.

In 1962, the Ministry of Public Health introduced a comprehensive registration scheme in which curative and preventive health services are co-ordinated in such a way as to ensure their accessibility to every inhabitant.

International Collaboration

Kuwait is seeking to co-ordinate its efforts with those of the neighbouring countries for the control of tuberculosis. An inter-country meeting took place in 1965 to discuss tuberculosis problems and the immigration of infected persons from Iran, Iraq and Saudi Arabia.

Government Health Expenditure

In the 1963/64 fiscal year the total general government expenditure amounted to 179.8 million Kuwait dinars, of which 10.2 million dinars (i.e., 5.7 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 25 dinars per head on these services. (On 1 April 1961 the Kuwait dinar replaced the Indian external rupee.)

PAKISTAN

At the last census, taken in February 1961, the population of Pakistan was 93 831 982. Population estimates for the years 1962-1964 are as follows:

1962	96 648 000
1963	98 683 000
1964	100 762 000

Organization of the Public Health Services

The Governments of the two provinces of Pakistan—East Pakistan and West Pakistan, are responsible for the provision of medical and health facilities. The central Government lays down main policies on health matters and is responsible for co-ordination at national and international levels and for planning. The Director-General of Health, who has also the status of Joint Secretary in the Ministry of Health, is in charge of the central administration.

West Pakistan is divided into six administrative units, each of which is headed by a Director of Health Services. Each of these units is divided into districts which are in the charge of the district health officer. He is responsible for the preventive work in his district. The medical superintendent/civil surgeon is responsible for curative work. The local bodies maintain the health services in towns.

The Director of Health Services is responsible for health work in East Pakistan. This province is divided into four administrative units, each under a deputy director of health services. These units are divided into subunits.

The medical and health services in rural areas, in which live about 80 per cent. of the country's population, are limited. A scheme of rural health centres has been set up in collaboration with UNICEF and WHO. These centres provide comprehensive and integrated medical and public health services to the rural communities. A primary rural health centre with three subcentres covers a population of about 50 000 and provides maternal and child health, school health and tuberculosis control services, environmental services and medical relief.

Hospital Services

In 1963 Pakistan had 493 hospitals, providing 25 633 beds. Of the 493 hospitals, 421 were in West Pakistan. There were also 110 medical centres in East Pakistan with 440 beds, and 834 in West Pakistan (in 1961) with 2536 beds. There were thus at least 28 609 beds in 1963, giving a bed/population ratio of 0.3 per 1000. During the year, 503 680 in-patients

were admitted to the hospitals, excluding the medical centres. The beds in hospitals were distributed as follows:

Category and number	Number of beds
General hospitals	393
Rural hospitals	53
Tuberculosis hospitals	23
Maternity hospitals	7
Infectious diseases hospitals	5
Psychiatric hospitals	4
Leprosaria	5
Eye hospitals	3

In 1963 out-patient facilities were available in West Pakistan in 366 hospital out-patient departments, 53 health centres, 1355 dispensaries and 54 mobile health units. East Pakistan had 60 hospital out-patient departments and 263 dispensaries.

Medical and Allied Personnel and Training Facilities

In 1964, 15 668 doctors were working in East and West Pakistan. The doctor/population ratio was one to 6430. Other health personnel included:

Dentists	250
Fully qualified midwives	1 305
Fully qualified nurses	3 962
Fully qualified nurses with midwifery qualifications	1 613

There are 12 medical colleges in Pakistan—six in each province. The average annual output of graduates is 1000. West Pakistan has 23 and East Pakistan seven nurse training schools. The average annual output of these schools is about 210. Lahore, Peshawar, Karachi, Hyderabad, Quetta and Dacca have health visitor training institutes. Pakistan also has a post-graduate public health institute.

Communicable Disease Control and Immunization Services

Malaria is one of the country's major public health problems. A malaria eradication programme was prepared in 1961 with the assistance of the United States Agency for International Development and WHO. During the period 1961-1964 there were in West Pakistan areas with a population of 17.2 million in the attack phase and areas with a population of 11.1 million in the preparatory phase. In East Pakistan areas with 9.8 million inhabitants were in the attack phase and areas with 8.9 million inhabitants in the preparatory phase. The Malaria Training Centre in Lahore and the Malaria Institute of Pakistan

in Dacca provide training for health personnel for the eradication campaign.

As regards tuberculosis, a country-wide BCG vaccination campaign has been in operation since 1949. Sixteen mobile BCG teams are working in East Pakistan and 17 in West Pakistan. Up to 1963, 47 million people had been tuberculin-tested and 19 million had been given BCG vaccine. Two tuberculosis pilot projects have been set up, one in Rawalpindi and the other in Dacca.

A trachoma survey was started in West Pakistan in 1961. More than 75 000 people have been examined and the trachoma prevalence rate is estimated at 62 per cent.

Smallpox is endemic in the country. A pilot project was started in 1960 in the districts of Comilla and Faridpur in East Pakistan. After the successful completion of this project, a two-year eradication programme was launched in East Pakistan in 1961 with the assistance of WHO. The incidence of the disease has been considerably reduced in this province. An eradication project for West Pakistan was under consideration in 1964.

Cholera is endemic in East Pakistan. A cholera research laboratory of the South-East Asia Treaty Organization was established in Dacca in 1961 in order to study the epidemiological factors causing the disease and ways and means for its ultimate control and prevention.

The following immunization procedures were carried out in 1963:

Cholera	54 294 549
Smallpox	36 466 731
BCG	1 686 551
Typhoid and paratyphoid fevers	204 264

Specialized Units

In 1964, West Pakistan had 657 maternal and child health centres which were attended by approximately

250 000 pregnant women, 237 834 infants under one year and 533 484 children between one and five years of age. There were also 25 school health units, 34 dental health units, two hospital rehabilitation departments, three psychiatric out-patient clinics, 15 tuberculosis clinics and five leprosy clinics. Four public health laboratories carried out 37 635 examinations.

In 1963, East Pakistan had 56 maternal and child health centres which were attended by 67 420 pregnant women, 62 509 infants under one year and 84 060 children between one and five years of age. Domiciliary care was given to 2807 infants and 1354 pre-school children. There were 22 school health services which supervised the health of 32 861 schoolchildren. Other specialized units included a psychiatric out-patient clinic, 11 tuberculosis clinics and four leprosy clinics. The public health laboratory carried out 7472 examinations.

National Health Planning

Planning in the field of health is initiated by the respective provincial health departments. The planning and development departments of the provincial governments are responsible for co-ordination at the provincial level. The Planning Commission is the co-ordinating body at the central level. The second five-year plan, which covered the period 1960-1965, provided an allocation of 375 million rupees for the health sector of the whole country.

Government Health Expenditure

In the 1963/64 fiscal year the total health expenditure by the central and provincial Governments amounted to 134 million rupees. This was equivalent to an expenditure of 1.35 rupees per head on these services.

SAUDI ARABIA

In 1963 the estimated population of Saudi Arabia was 6 600 000.

Organization of the Public Health Services

In Saudi Arabia, the overall responsibility for health rests with the Minister of Public Health who is a member of the cabinet and represents the Ministry of Public Health in the Council of Ministers. He is assisted by a Deputy Minister of Public Health and a Director-General of Health. The main depart-

ments of the Ministry include those for preventive, and social medicine, international health, personnel, hospital administration, planning, health legislation, vital and health statistics, health education, education and training and malaria eradication.

For administrative purposes the country is divided into ten health districts, each one headed by a director of health.

Other ministries responsible for health matters in their respective fields are the Ministries of Education, the Interior, Agriculture, Labour and Social Affairs.

Hospital Services

In 1965, Saudi Arabia had 67 hospitals with a bed capacity of 5552, including 908 beds for tuberculosis patients, 250 for mental cases, 284 for maternity cases, 120 for leprosy patients and 250 for eye diseases.

Out-patient facilities were provided in 1965 at the hospital out-patient departments, at 157 dispensaries, 239 health centres and 36 mobile health units.

A central public health laboratory comprising a blood bank was set up in 1964 with the assistance of WHO.

Medical treatment, including drugs, is provided free of charge in all government hospitals and institutions.

Medical and Allied Personnel and Training Facilities

In 1964, Saudi Arabia had 510 doctors. Other health personnel included:

Pharmacists and pharmaceutical assistants	177
Male nurses	540
Female nurses and midwives	447
X-ray technicians	48
Laboratory technicians	82

From its establishment in 1959 to 1965, the Health Institute in Riyad had trained 80 sanitarians and 63 auxiliaries in laboratory and X-ray techniques, pharmacy, anaesthesia and other specialities. A course for nursing auxiliaries was added in 1963 and a course for assistant health statisticians in 1964. Similar health institutes were established by the Government in Jeddah in 1962 and at Al-Hafouf in the Eastern Province in 1964. A fourth was being planned at Taif. The annual intake of trainees at the three existing institutes was 175 by 1965; it was planned to increase it in the next five years. Altogether 16 female nurses graduated during the period under consideration at the two nursing schools in Riyad and Jeddah. Another 16 were under training in 1965.

Communicable Disease Control and Immunization Services

Because the holy cities of Mecca and Medina attract annually about 300 000 to 350 000 pilgrims from all over the world, the Government of Saudi Arabia faces a heavy task in providing safety from communicable diseases. The Government provides environmental sanitation facilities, quarantine services at seaports and airports and at the points of entry by land routes, and health education and medical treatment. As a result of these efforts no case of quarantinable disease occurred during the period under review.

Although no smallpox cases were reported during the period under review, it has been found necessary to maintain a high level of immunity among the local population in order to avoid possible importation of the disease by pilgrims. A nation-wide vaccination campaign was initiated in December 1964 with a view to covering the whole population in three years.

A significant decline in malaria morbidity was achieved, mainly as a result of the eradication activities assisted by WHO. The consolidation phase was reached in the northern area of the country. The areas of Mecca, Medina and Jeddah were free of malaria.

A WHO-assisted tuberculosis control and training project was established in Riyad. The Government plans to increase by 1970 the number of chest clinics in different parts of the country. Mobile chest clinics carried out case-finding and prevention and treatment in rural areas. BCG vaccination commenced in the Riyad area.

A trachoma survey and treatment project was under consideration by the Ministry of Public Health. Sporadic cases of bilharziasis were reported from certain parts of the country, particularly from the southern areas. A survey of this disease was under consideration.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review was marked by a considerable development in the field of education. The number of primary and secondary schools increased from 479 in 1954/55 to 1150 in 1964/65. During the same period the student enrolment rose from 56 566 to 191 830. Considerable progress has been made in the education of girls. The number of girl students in primary and secondary schools was 41 812 in 1964/65 as compared with 5200 in 1959/60. Simultaneously with the development of general education, technical education in the fields of agriculture, commerce, industry and engineering is expanding rapidly. The enrolment at the University, which has faculties for arts, commerce, science and pharmacy, rose from 11 in 1957/58 to 1080 in 1963/64.

Road construction progressed rapidly. Television and radio broadcasting facilities were usefully employed for health education purposes. The Government encouraged the settlement of nomads.

There was also a considerable development and expansion of the available health services.

National Health Planning

The central planning organization of the Government is responsible for preparing a socio-economic

development plan for the country. The health component of this plan is being prepared by the Ministry of Public Health through its permanent higher committee for national health planning. Considerable

progress has already been achieved in assessing the health problems of the country, the existing health facilities, the resources available and the present and future needs.

SOMALIA

Population and Other Statistics

Somalia has a population of about 2.5 million. The difficulties encountered in enumerating a population, 70 per cent. of which are nomads, have proved unsurmountable. The birth rate is estimated to be 41.1 per thousand population, the crude death rate 24.5 per thousand and the infant mortality 158 per thousand live births. The population does not increase by more than 1 to 1.5 per cent. per annum.

Major causes of death recorded in 1963 were malaria, tetanus, tuberculosis, heart diseases and the diarrhoeal diseases.

Organization of the Public Health Services

The organization and administration of the country's health services is the responsibility of the Ministry of Health and Labour. The Ministry has four main departments: general technical services, integrated medicine, epidemiology and communicable diseases, and environmental sanitation.

At the levels of the eight regions into which the country is divided and of the districts, the directors of medical services are responsible for the administration of medical institutions and public health services in their respective areas. The regional directors advise the regional governors on all matters related to health. Technically and administratively the regional directors are responsible to the Ministry of Health and Labour. Municipal health services complement those provided by the Government. They exist in almost all regional capitals and in the principal towns of the districts. They are concerned with vaccination, general sanitation, disposal of refuse, water supply and inspection of public places.

Hospital Services

Medical facilities were nearly doubled between 1955 and 1964, when there were 19 general hospitals, two tuberculosis hospitals and two mental hospitals. In addition there were two general hospitals and a leprosy hospital run by missionary organizations. The total bed capacity in 1964 was 4329. Out-patient services were provided in 189 infirmaries and mobile clinics, 21 general hospitals, five maternal and child clinics and three missionary hospitals.

Training Facilities

There are no training facilities for doctors or dentists in Somalia. Facilities for the training of auxiliary health personnel exist in the UNICEF/WHO-assisted health personnel training project in Mogadishu. By 1964, 269 persons had been trained or were in training as health superintendents, midwives, public health nurses, sanitarians, assistant pharmacists, X-ray technicians and laboratory technicians.

Communicable Disease Control

Pulmonary tuberculosis, with an estimated total of 100 000 cases, of which a third are open cases, constitutes a serious problem in both urban and rural areas. A WHO-assisted tuberculosis control project has been in operation since 1960 with the object of finding a low-cost method of controlling the disease. Simple and effective methods of prevention and control are being tested in certain areas with a view to extending such methods to the whole country and to integrating them into the programme of basic health services. By 1964, 142 330 persons had been vaccinated with BCG, 70 642 were receiving treatment at home and 1611 had been hospitalized.

The number of malaria cases varies with the rainfall between 100 000 and 200 000 annually. The last epidemic was recorded in 1960. A WHO-assisted malaria pre-eradication programme is in operation. Spraying operations are being conducted in three pilot areas with a total population of about 175 000.

The average number of leprosy cases diagnosed each year is about 60. They are mainly from the Benadir region. Bilharziasis occurs and has been noted particularly in the southern region. Ancylostomiasis and ascariasis are also prevalent. Smallpox has an extremely low incidence.

Major Public Health Problems

Tuberculosis, malaria, helminthic infestation, lack of maternal and child health services, and inadequate water supply and environmental sanitation are the main health problems. A serious shortage of doctors, nurses and auxiliary personnel is a matter of concern, since the increase in the number of hospitals and other

medical institutions is not matched by a proportionate increase in the number of necessary health personnel.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade under review, a number of public corporations were created, such as the Somali Insurance Fund which covers employed personnel against disease, disability, unemployment and death, and the National Assistance and Charity Organization, which helps the destitute and juvenile delinquents. Other developments were concerned with the expansion of agriculture, livestock, fisheries and handicraft. With the assistance of the United Nations Development Programme surveys are being conducted on water and mineral resources. An autonomous national housing agency has been established to plan and build low-cost houses. Piped water supplies for Mogadishu and Kismayu are being planned. Deep water ports at Kismayu and Berbera are nearing completion. Several additional schools have been opened.

National Health Planning

The first five-year development plan (1963-1967) was approved by the National Assembly. Most of

the programmes were intended to increase the *per caput* income, improve technical skills, provide opportunities for employment and bring about a modest improvement in the existing living conditions. The allocation to the health sector during this development plan period is 43 million Somali shillings and represents 3 per cent. of the total budget.

A health plan has also been prepared which aims primarily at strengthening education and training facilities in and outside the country, improving the organization of health services, integrating preventive and curative activities and investigating related health problems.

Medical and Public Health Research

During 1965 a medico-biological research foundation was established with government assistance and voluntary effort. The income comes mainly from voluntary sources. The research activities include the entomology of ticks and sand-flies.

Government Health Expenditure

The Government's expenditure on health services in 1964 was 18.7 million Somali shillings. The total budget of the country was 187.9 million Somali shillings.

SUDAN

Population and Other Statistics

At the last census, taken on 17 January 1956, the recorded population of Sudan was 10 262 536. The mean population estimates for the period 1961-1964 were:

1961	12 109 000
1962	12 470 000
1963	12 831 000
1964	13 180 000

No other vital statistics are available, as the registrations of births and deaths do not exceed ten and five per cent. respectively.

Information on the main causes of deaths is very incomplete. The following were the most frequently reported in 1964: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (798), pneumonia (406), tuberculosis, all forms (361), malaria (304), dysentery, all forms (223), typhoid and paratyphoid fevers and other salmonella infections (158), deliveries and complications of pregnancy, childbirth and the puerperium (155).

Among the communicable diseases most frequently notified, during 1962/63 unless otherwise stated, were: malaria, new cases (694 010), trachoma (294 595), dysentery, all forms (278 164), syphilis, new cases (124 785), gonorrhoea (117 528), measles (60 251), bilharziasis (57 218 in 1961/62), yaws, new cases (34 823 in 1961/62), whooping-cough (25 690), tuberculosis, all forms, new cases (14 061 in 1961/62), leprosy (2095).

Organization of the Public Health Services

The overall responsibility for the health services in the Sudan rests with the Minister of Health. The Under-Secretary of Health is in charge of the administration and organization of these services. He is assisted by two deputies, one for preventive medicine and the other for curative medicine. Both deputies have assistants. The assistant for rural health and country development, endemic diseases and international health and the chief public health inspector for environmental hygiene work under the Deputy for Preventive Medicine.

A provincial medical officer of health is in charge of all the health services in each of the nine provinces. He is also a member of the Provincial Executive Council. The provincial authority is responsible for environmental sanitation, health centres, dispensaries, dressing stations and child welfare centres. The staff working in these establishments are seconded from the Ministry of Health, which is responsible for technical supervision through the provincial medical officer of health, who is assisted by an assistant medical officer of health, a provincial public health inspector, a provincial medical assistant and a superintendent nursing officer. Co-ordination between the Ministry of Health and the provincial governments is secured by delegation of certain of the powers of both authorities to the provincial medical officer of health. The provincial government maintains the health units and the Ministry of Health contributes to the cost by paying a 20 per cent. grant.

The provincial hospitals, until recently run by the provincial medical officers of health, are now administered by management boards. The chairman of the board is the provincial medical officer of health, and its secretary or executive officer is the senior medical officer. Medical inspectors are in charge of district hospitals; the dispensaries are run by medical assistants and the dressing stations by male nurses.

Hospital Services

In mid-1963 there were 597 hospital establishments with 12 956 beds (one bed per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals *	67
Rural hospital	1
Medical centres	527
Maternity hospital	1
Eye clinic	1
	9 900
	425
	2 475
	38
	118

* Including one private non-profit-making hospital with 70 beds.

During the fiscal year 1962/63, 231 397 hospital admissions were recorded.

In mid-1964, out-patient services were available at 69 hospital out-patient departments, two health centres, 529 dispensaries, 609 dressing stations and 140 mobile health units.

Medical and Allied Personnel and Training Facilities

In 1963, Sudan had 435 physicians (311 in government service and 124 in private practice), equivalent to one for every 29 500 inhabitants. Other health personnel included:

Medical assistants	602
Dentists	38
Pharmacists	63
Dispensers	28
District midwives	1 012
Fully qualified nurses	294
Nurses with midwifery qualifications	284
Nursing auxiliaries	4 017
Public health inspectors and overseers	184
Sanitary overseers	201
Laboratory and X-ray technicians	68

Since 1962, the most important developments in training facilities have been the creation of a school for intermediate nursing and a school for anaesthetic assistants, and an increase in the number of midwives' schools. The intake of the school for intermediate nursing is 30 a year.

Communicable Disease Control and Immunization Services

Although eradication programmes, a higher standard of living and improved conditions have contributed to the decline of most communicable diseases, malaria, tuberculosis, dysenteries, gastro-enteritis, respiratory diseases, bilharziasis and trachoma are still prevalent. Bilharziasis is among the most important causes of morbidity in the country. The problem has been aggravated by the rapid development of agricultural schemes, particularly in the Gezira irrigated area, where the incidence is high. Strict control measures are applied, including snail control (using copper sulfate, and mechanical barriers in canals), surveillance, treatment of cases and health education.

Diarrhoeal diseases are very common. Gastro-enteritis is still the commonest cause of morbidity and mortality among infants. Improved health conditions, health education programmes, the establishment of child welfare centres and domiciliary care have already reduced the disease's prevalence.

The tuberculosis control demonstration centre in Wad Medani continues to function. BCG vaccination is now integrated into the work the general health services and is becoming popular and accepted.

A malaria pre-eradication project with particular emphasis on the development of basic health services started with the assistance of WHO in 1963. Trachoma is common in some parts of the country, especially in the Northern Province, where an eradication project has been initiated under WHO auspices. A smallpox eradication campaign was started in 1963. By 1964, 75 per cent. of the population had been vaccinated.

Specialized Units

In 1964 the 56 maternal and child health centres were attended by 247 144 pregnant women, 221 280

infants under one year of age and 20 068 children aged between one and five years. Domiciliary visits were paid to 3232 pregnant women, 15 485 infants and 966 children aged between one and five. About 50 000 deliveries were attended by a doctor or qualified midwife. The total school population of 570 000 children was under medical supervision.

Eight dental health units treated 142 132 persons. The hospital rehabilitation department dealt with 46 908 patients and 25 603 persons attended the mental health out-patient clinic. A central research laboratory is situated in the Ministry of Health. Other specialized units included three tuberculosis clinics and a trachoma clinic.

Environmental Sanitation

Of the total population in 1963 only 850 000 lived in communities with over 10 000 inhabitants; 11 980 000 lived in areas with less than 10 000 inhabitants. All communities had some form of piped water systems but only 407 000 inhabitants had piped water supplies to their dwellings, and 12 423 000 had to depend on public fountains or community wells. Only the population of Khartoum has sewerage and sewage treatment facilities. All other towns have either septic tanks, "aqua privies", bucket or pit latrines.

Major Public Health Problems

The major public health problems are related to the incidence of communicable diseases. The control of epidemics causes difficulties in view of the size of the country, the long frontiers and the nomadic habits of a large section of the population. Moreover, thousands of pilgrims pass through the country on their way to Saudi Arabia. Rural water supply is another important problem which is aggravated by the size of the country and the existence of a large desert area. Many districts experience acute water shortage and in several regions the water supply is not safe. The Rural Water Supply and Soil Conservation Board of the Department of Land Use is establishing a national water policy with the help of WHO consultants.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade Sudan became an independent State, and a Member of the United Nations and specialized agencies. The ten years under review have been marked by growing industrialization, with the establishment of 238 new industries, and a marked trend towards economic self-sufficiency. Rural and community water supply has received increasing atten-

tion. Artesian wells have been drilled and many towns provided with piped and safe water supply. Agricultural and animal husbandry schemes have been started in order to improve poultry and dairy products, tannery activities and farming. Expansion of educational facilities was equally impressive, as 2177 schools of different grades were opened.

During the last three years of the decade, an improvement in the standard of living and a consequent fall in the infant mortality rate were noted.

National Health Planning

A national health development plan was prepared in 1961 as part of a comprehensive development plan, covering an initial period of seven years, which was later extended for three more years. The broad lines of the health plan were prepared in the Ministry of Health before being submitted to the Department of Economic Planning in the Ministry of Finance, which is the co-ordinating planning body. After the final approval of the plan by the Council of Ministers, its execution was left to the Ministry of Health. The plan aims at increasing health services by 300 per cent. and at providing one hospital for 50 000 to 100 000 inhabitants, one health centre for 20 000, one dispensary for 15 000, one dressing station for 5000 and 1.5 hospital beds for 1000 population. With regard to health personnel, the plan foresees one doctor for 50 hospital beds, one medical assistant for 15 000 to 20 000 inhabitants, one midwife for 57 000, one sanitarian for 50 000, one sanitary overseer for 20 000 and one health visitor for 20 000.

The development of health centres, which started well, had to be interrupted, together with other programmes, for financial reasons. Training programmes continued successfully. The medical research institute and the cancer institute neared completion and specialists and technicians for these services were under training. The programme for environmental sanitation was also given high priority.

Medical and Public Health Research

Research work carried out during the period 1961-1964 covered such fields as the phlebotomiae of Sudan, hepatitis, onchocerciasis, leishmaniasis and kala-azar.

International Collaboration

During the period under review, Sudan continued to receive assistance from the specialized agencies in relations with the United Nations, as well as assistance on a bilateral basis. Sudan is col-

laborating with the United Arab Republic in malaria eradication.

Government Health Expenditure

In the 1963/64 fiscal year, the total general government consumption expenditure amounted to 54.3 mil-

lion Sudanese pounds, of which the share allocated to health services was 8.3 per cent. This was equivalent to an expenditure of 0.35 pounds per head. A further sum of almost two million pounds was spent on capital account by the Ministry of Health and the bulk of this expenditure was related to plans for the development and expansion of health services.

SYRIA

Population and Other Statistics

At the last census, taken in September 1960, the population of Syria was 4 565 121. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table.

	1961	1962	1963	1964
Mean population	4 930 278	5 066 713	5 250 914	5 398 636
Number of live births	124 605	125 529	137 341	158 354
Birth rate (per 1000 population)	25.3	24.8	26.2	29.3
Number of deaths	24 401	22 879	22 818	23 468
Death rate (per 1000 population)	4.9	4.5	4.3	4.3
Natural increase (per cent.)	2.04	2.03	2.19	2.50
Number of deaths, 1-4 years	5 789	4 843	4 882	4 970
Number of infant deaths	3 277	4 120	4 308	4 020
Infant mortality rate (per 1000 live births)	26.3	32.8	31.4	25.4
Number of maternal deaths	40	45	44	60
Maternal mortality rate (per 1000 live births)	0.3	0.4	0.3	0.4

Of the 23 468 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (12 910), arteriosclerotic and degenerative heart disease (1620), infections of the newborn (1022), pneumonia (1017), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (978), accidents (872, including 97 in motor-vehicle accidents), malignant neoplasms (581), vascular lesions affecting the central nervous system (362), bronchitis (329), nephritis and nephrosis (238), measles (122).

In the same year, the communicable diseases most frequently notified were: whooping-cough (686), chickenpox (404), malaria, new cases (298), measles (298), diphtheria (235), dysentery, all forms (102), poliomyelitis (65), typhoid and paratyphoid fevers (63).

Hospital Services

At the end of 1963, hospital accommodation was based on 81 hospitals which provided 5734 beds (1.1 per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	49
Tuberculosis hospitals	4
Infectious diseases hospitals	4
Maternity hospitals	7
General surgical hospitals	11
Mental and chronic diseases hospitals	2
Ophthalmological hospitals	4

There were also 14 homes for old people, and a leprosarium with 150 beds.

Out-patient facilities existed at 82 hospital out-patient departments, 33 polyclinics, 195 dispensaries and two medical aid posts.

Medical and Allied Personnel

At the end of 1963 Syria had 978 doctors, equivalent to one doctor per 5400 inhabitants. There were also:

Dentists	292
Dental assistants	49
Pharmacists	348
Nurses	698
Nurses with midwifery qualifications	290

Communicable Diseases Control and Immunization Services

Tuberculosis control activities have been notably successful. They consisted mainly in the establishment of tuberculosis centres in various areas of the country, in large-scale BCG vaccination programmes and in an increased bed provision in tuberculosis hospitals. The malaria control campaign has entered the control phase. Eradication programmes are also organized against bilharziasis and ancylostomiasis, although the incidence of these diseases is not very high. The prevalence of leishmaniasis has dropped by 60 per cent. since the initiation of control measures. A control campaign against communicable eye diseases is in active preparation.

Routine smallpox, diphtheria, whooping-cough and tetanus vaccinations are given to pre-school children.

As regards poliomyelitis, 79 023 doses of live Sabin vaccine and 47 852 doses of killed vaccine were administered in 1962/63.

Specialized Units

In 1964 maternal and child health services were based on 47 centres, attended by 18 231 pregnant women, 17 066 infants under one year, and 9298 children between one and five years of age. Domiciliary care was given to 11 931 pregnant women, 19 527 infants and 22 706 pre-school children. Between 66 and 75 per cent. of the total school population were under supervision by 100 school health units. Sixteen dental units treated approximately 3.5 million patients.

National Health Planning

Syria's general health plan aims at self-sufficiency in medical, sanitary and preventive services in every administrative district (*mohafazet*). Amongst the aims of the plan are the provision in government hospitals of one bed for every 673 inhabitants and

the availability of a sufficient number of doctors, pharmacists and other health personnel to man the new health centres. This health plan has been prepared in the Ministry of Health and Public Assistance by its Planning Office and transmitted for approval to the Ministry of Planning, which co-ordinates all plans connected with social and economic development. The Ministry of Health and Public Assistance is responsible for the implementation of the approved plan.

International Collaboration

Syria receives WHO assistance for a number of health projects. Bilateral aid from several European countries includes fellowships and expert advice. Syria also has direct contact with its neighbours with a view to solving common health problems and to co-ordinating services.

Government Health Expenditure

In 1965, the government expenditure on health services amounted to 24 million Syrian pounds.

UNITED ARAB REPUBLIC

Population and Other Statistics

At the last census, taken in 1960, the population of the United Arab Republic was 26 085 326. Population estimates and other vital statistics for the years 1961-1963 are given in the following table:

	1961	1962	1963
Mean population	26 557 000	27 243 000	27 963 000
Number of live births	1 166 620	1 125 798	1 185 821
Birth rate (per 1000 population)	43.9	41.3	42.8
Number of deaths	420 158	486 699	431 673
Death rate (per 1000 population)	15.8	17.9	15.4
Natural increase (per cent.)	2.81	2.34	2.74
Number of deaths, 1-4 years	111 362	149 347	105 809
Death rate, 1-4 years (per 1000 population at risk)	32.2	42.1	...
Number of infant deaths	126 021	150 651	141 877
Infant mortality rate (per 1000 live births)	108.0	133.8	118.6

Based on the incomplete data available, 1963 figures for the main causes of death in the localities with health bureaux were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (100 582), senility without mention of psychosis, ill-defined and unknown causes (40 519), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other

diseases peculiar to early infancy and immaturity (29 015), bronchitis (23 103), arteriosclerotic and degenerative heart disease (9155), accidents (8633, including 211 in motor-vehicle accidents), pneumonia (7850), hypertension (6721), chronic rheumatic heart disease (4404), malignant neoplasms (4172), nephritis and nephrosis (3708), tuberculosis, all forms (2432), diabetes mellitus (1341), measles (1180).

In 1964, the communicable diseases most frequently notified were: typhoid and paratyphoid fevers (17 488), malaria, new cases (16 181), infectious hepatitis (10 687), meningococcal infections (1667), diphtheria (1349), dysentery, all forms (450), poliomyelitis (404), rabies in man (32).

Hospital Services

In 1962, the total number of hospitals and other health institutions providing in-patient accommodation was 1247, with 56 920 beds—equivalent to a bed/population ratio of 2.1 per 1000 population—of which 49 249 were provided in 1071 institutions maintained by the Government. The total number of beds was distributed as follows:

Category and number	Number of beds	
General hospitals	285	20 842
Rural hospitals	476	7 343
Medical centres	79	253
Tuberculosis hospitals	51	8 583
Infectious diseases hospitals . . .	71	5 705
Maternity hospitals	15	393
Paediatric clinics	10	1 553
Psychiatric clinics	7	4 085
Ophthalmological clinics	117	2 722
Endemic diseases hospitals . . .	104	2 150
Antirabies clinics	7	291
School health clinics	2	277
Skin and venereal disease hospitals	2	125
Clinic for children with poliomyelitis	1	36
Leprosaria	2	1 615
Prison hospitals	18	947

In 1964, out-patient care facilities were available in 144 general and district hospital out-patient departments, nine polyclinics, 1249 health centres and 21 X-ray units. About 15.5 million attendances were recorded in that year.

Medical and Allied Personnel

In 1962, there were 10 929 doctors in the United Arab Republic—one doctor to 2500 inhabitants. Other health personnel included:

Dentists	1 042
Dental mechanics	310
Pharmacists	3 278
Pharmaceutical assistants	93
Fully qualified midwives	1 778
Assistant midwives	3 841
Auxiliary midwives (dayas)	4 127
Fully qualified nurses	768
Assistant nurses	3 335
Auxiliary nurses	5 871
Veterinarians	1 008

Sanitary inspectors	589*
Laboratory technicians	1 067*
X-ray technicians	178
Opticians	202

* Figure for Ministry of Health only.

Immunization Services

The following immunization procedures were carried out in 1962:

Smallpox	6 372 946
Poliomyelitis	1 163 685
Diphtheria	862 140
Typhoid and paratyphoid fevers	533 930
BCG	189 961
Cholera	21 855
Epidemic typhus	3 150
Yellow fever	2 715

Specialized Units

In 1964, maternal and child care centres provided medical services for 517 941 pregnant women and 4 267 180 consultations for children up to five years of age. A total of 436 405 deliveries were attended by a doctor or qualified midwife. There were 1155 school health units which supervised 3 328 828 schoolchildren, 320 dental service units, where 1 600 000 persons were treated, and 16 psychiatric out-patient clinics which recorded 48 205 consultations. Other specialized units included 51 for tuberculosis, 44 for skin and venereal diseases, 88 for leprosy, 131 eye clinics, 148 clinics for endemic diseases, 75 antirabies centres and 67 centres for infectious diseases. There were 78 public health laboratories.

WESTERN PACIFIC REGION

AMERICAN SAMOA

Population and Other Statistics

At the last census, taken in 1960, the recorded population was 20 051. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	19 900	21 100	20 600	20 800
Number of live births	844	812	975	981
Birth rate (per 1000 population)	42.4	38.5	47.3	47.2
Number of deaths	106	131	136	111
Death rate (per 1000 population)	5.3	6.2	6.6	5.3
Natural Increase (per cent.)	3.71	3.23	4.07	4.19
Number of deaths, 1-4 years	10	16	13	7
Number of Infant deaths	20	37	35	32
Infant mortality rate (per 1000 live births)	23.7	45.6	35.9	32.6
Number of maternal deaths	0	0	2	0

Among the 111 deaths recorded in 1964, the main causes were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (18), pneumonia (14), all accidents (13, including 8 in motor-vehicle accidents), senility without mention of psychosis, ill-defined and unknown causes (11), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (11), vascular lesions affecting the central nervous system (9), malignant neoplasms (8).

During the period July 1963 - June 1964, the communicable diseases most frequently notified were: tuberculosis, all forms (40), dysentery, all forms (20), infectious hepatitis (15), leprosy (14), influenza (7).

Organization of the Public Health Services

The Department of Medical Services is responsible for all health activities in American Samoa. It is headed by the Director of Medical Services, who determines and formulates health policies and programmes and the means for their implementation. The Administrator administers and co-ordinates all activities of the Department of Medical Services in co-operation with the Director. The Department has two main divisions—for hospital services and for public health services respectively.

Hospital Services

In the year July 1964 - June 1965 medical care facilities were available in one general government hospital with 154 beds, to which 5501 patients were admitted, five medical centres with 20 beds and one

leprosarium with 20 beds. These seven establishments provided altogether 194 beds (9.2 per 1000 population).

In mid-1964, out-patient care was provided at six hospital out-patient units, six dispensaries and 40 village health *fales* (houses).

Medical and Allied Personnel

In the year 1964/65, six doctors were working in government service. The doctor/population ratio was one to 3550 inhabitants. There were also 13 Samoan medical practitioners who had graduated at the Fiji School of Medicine, Suva. Other health personnel included:

Dentist	1
Samoan dental practitioners	4
Pharmacist	1
Pharmaceutical assistant	1
Fully qualified nurses	6
Assistant nurses	122
Ward aides	10
Sanitary inspector	1
Laboratory technicians	6
X-ray technicians	2

Communicable Disease Control and Immunization Services

Following pilot studies initiated in 1962, a mass treatment programme for the control of filariasis in the entire population of American Samoa commenced in September 1963. Selected villages with a total of approximately 1000 inhabitants were examined. The results showed that approximately 22 per cent. of them were microfilaria positive. These cases were treated with Hetrazan. Treatment was then extended to the whole of American Samoa and the first blood survey of all the villages after treatment began in March 1965. Preliminary results indicate that the incidence of microfilaria in the blood has been reduced from the estimated 22 per cent. pre-treatment level to about four per cent. Rehabilitation of persons with elephantiasis of the limbs has also started.

In 1964, the following immunization procedures were carried out:

Diphtheria, whooping-cough and tetanus	13 246
Typhoid and paratyphoid fevers	9 770
Poliomyelitis (Sabin vaccine)	5 554
Smallpox	2 610
Cholera	59

Specialized Units

Maternal and child health services are provided at the hospital out-patient departments and dispensaries. In 1964, 883 deliveries (90 per cent. of all births) were attended by a doctor or qualified nurse. The proportion of all deliveries in the main hospital increased from 58 per cent. in 1960 to 75 per cent. in 1964. The total school population of 5650 children was under medical supervision. The dental service unit treated 6145 patients. The public health laboratory carried out 41 108 examinations.

Environmental Sanitation

At the end of 1964, the total population lived in 56 communities, of which 50 had piped water systems; approximately 20 000 inhabitants were served with piped water to their dwellings and others had to rely on community or private wells. Three communities with altogether 5000 inhabitants had sewerage systems, and 14 000 Samoans were provided with individual installations.

Major Public Health Problems

Inadequate water supplies and sewage disposal are the main public health problems of American Samoa. Funds are provided through United States federal grants-in-aid to improve the present situation. Malnutrition due to neglect in the one to three year age group is frequently observed at well-baby clinics. Approximately 40 per cent. of this age group is suffering from malnutrition. The incidence of intestinal parasites is estimated from samples of the population to be 80 per cent.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In the decade under review money economy replaced an economy based on goods and services. The effect of this change is seen in the increasing number of children either malnourished or under-nourished. Parents seeking gainful wage employment entrust their children to the care of older children or

elderly relatives. The general health of the Samoan people has improved and the life-span increased despite the tendency of the population to move from remote villages to populous urban areas. More intensive and continued health and sanitation education and increased use of health facilities have contributed to the improvement in health. In 1964 educational television was introduced into the local educational system. It is expected that the Department of Medical Services will make extensive use of this medium of communication for health education purposes.

National Health Planning

A special programme under the direction of the Environmental Section of the Public Health Division was instituted in 1964. This programme involves the installation of pour-flush water-seal latrines. The Manua Islands group is already completely supplied with these latrines.

Medical and Public Health Research

The only research conducted during the period under review was the field investigation of filariasis prevalence. The investigation was carried out by the University of California Medical School and financed in part by grants from the United States National Institutes of Health and in part by the local government.

International Collaboration

American Samoa is collaborating with the World Health Organization and with the South Pacific Commission.

Government Health Expenditure

In the 1963/64 fiscal year the total general government expenditure on health services was US \$999 165. This was equivalent to an expenditure of US \$48 per head on these services.

AUSTRALIA

Population and Other Statistics

At the last census, taken on 30 June 1961, the population of the states and territories of the Commonwealth of Australia was as follows:

New South Wales	3 917 013
Queensland	1 518 828
South Australia	969 340
Tasmania	350 340
Victoria	2 930 113
Western Australia	736 629
Australian Capital Territory	58 828
Northern Territory	27 095
Total	10 508 186

Population estimates and some other vital statistics in respect of the whole Commonwealth for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	10 508 000	10 705 000	10 916 000	11 136 000
Number of live births	239 986	237 081	235 689	229 149
Birth rate (per 1000 population)	22.8	22.1	21.6	20.6
Number of deaths	88 961	93 163	94 894	100 594
Death rate (per 1000 population)	8.5	8.7	8.7	9.0
Natural increase (per cent.) .	1.43	1.34	1.29	1.16
Number of deaths, 1-4 years	963	907	875	923
Death rate, 1-4 years (per 1000 population at risk)	1.1	1.0	1.0	1.0
Number of infant deaths	4 689	4 840	4 607	4 367
Infant mortality rate (per 1000 live births)	19.5	20.4	19.5	19.1
Number of maternal deaths .	108	85	64	75
Maternal mortality rate (per 1000 live births)	0.45	0.36	0.27	0.33

Of the 100 594 deaths recorded in 1964, the main causes were: arteriosclerotic and degenerative heart disease (31 873), malignant neoplasms (15 166), vascular lesions affecting the central nervous system (13 122), accidents (5970, including 2961 in motor-vehicle accidents), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (3749), pneumonia (3722), hypertension (2300), bronchitis (2237), suicide and self-inflicted injury (1620), diabetes mellitus (1475).

The communicable diseases most frequently notified in 1964 were: infectious hepatitis (7686), gonorrhoea (7201), tuberculosis, all forms, new cases (3446), scarlet fever (1798), syphilis, new cases (611), dysentery, all forms (488), meningococcal infections (229), Q fever (189), diphtheria (87), leprosy (75).

Organization of the Public Health Services

The national health services in Australia are controlled by the Commonwealth Government in Canberra. The organization provides for a Commonwealth Minister of State for Health who exercises political control of a Commonwealth Department of Health, headed by a Director-General. The Commonwealth Department of Health has functional divisions for management services and benefits, national health, laboratory services and quarantine, national health and medical research, and tuberculosis. The Department directly administers 15 Commonwealth public health laboratories in various parts of Australia, and certain laboratories for special purposes, e.g., biological standards, X-ray and radium. The School of Public Health and Tropical Medicine, the Institute for Child Health and the Institute of Anatomy are also controlled by the Department. The Commonwealth Department of Health has offices in each state and is also represented overseas. In the Capital and Northern Territories it is charged with the performance of certain duties which in the states are carried out by the local authorities. The powers of the Commonwealth Government in the health field are limited to general supervision, quarantine and the payment, under statutory authority, of certain benefits which, broadly speaking, help to defray the cost of medical care to the individual.

Each of the six states has a Minister of Health who is responsible to the Government of the state for the administration of a health department, and for the proper functioning of the state hospitals commission. This latter body consists of a government-appointed board which supervises the administration and management of the public hospitals. The state health department is responsible for the provision of a wide range of public health services, including maternal and child welfare, school health services, communicable disease control, health education, mental hospitals and tuberculosis sanatoria, and environmental sanitation. Certain of these functions are shared with the health departments of the local government bodies, and are the executive responsibility of a medical officer of health and his staff. In one of the most populous states, New South Wales, the Minister of Health is assisted by a permanent Under-Secretary. Under this officer the Ministry is organized in two main divisions, for health services and for establishments respectively. The former division is headed by the Director-General of Public Health who

is assisted by a Director of State Health Services. He is responsible for the executive direction of the public health services. The division is organized in branches for maternal and child health, epidemiology, immunization, the care of the physically handicapped, nutrition, health education, occupational health, etc. The Director of the Division of Establishments is responsible for mental health, the mentally handicapped, geriatrics and the related institutions.

Hospital Services

In 1964 Australia had 2090 general purpose hospitals with a complement of 98 901 beds—equivalent to 8.9 per 1000 population; 70 216 of these beds were in 1142 general hospitals, and 28 685 in smaller institutions giving simpler forms of medical care. Specialized institutions—for maternity, tuberculosis, mental disorders, etc.—are not included in these totals. The work of the mental institutions is being reoriented by the development of psychiatric outpatient clinics and day hospitals. Large funds have been made available by the Commonwealth Government to facilitate and expedite this reorganization.

Medical and Allied Personnel

At the end of 1963 there were 14 884 physicians in Australia. The doctor/population ratio was thus one to 740 as compared with one to 850 in 1956. Other health personnel included:

Dentists	4 313
Pharmacists	9 853
Veterinarians	1 250
Sanitary engineers and sanitary inspectors	1 386
Physical therapists	2 076

Communicable Disease Control and Immunization Services

The reduction in travelling time between Australia and other countries has increased the risk of importing human, animal and plant diseases. Nevertheless, as the result of the work of the Quarantine Service, Australia has remained free of such diseases as cholera, plague, smallpox and yellow fever. Cases of malaria and trachoma occur in certain areas and population groups but these diseases do not constitute a serious problem.

Tuberculosis remains a formidable disease. Although the tuberculosis mortality rate fell from 14.9 per 100 000 in 1952 to 3.7 per 100 000 in 1964, the notification rate per 100 000 has remained comparatively high, being 35.2 in 1963 as compared with 54.8 in 1952. The control of tuberculosis is a state responsibility, but considerable encouragement and support is given by the Federal Government. In

accordance with a decision of Commonwealth and State Ministers of Health, attendance for community chest X-ray surveys is now compulsory. This may cause some increase in the number of new cases discovered, but it will ultimately contribute greatly to the elimination of the disease.

As a result of intensive vaccination campaigns using Salk vaccine, poliomyelitis has ceased to be a major health problem. It is estimated that 80 per cent. of children under 15 years of age and 50 per cent. of adults have received three doses of the vaccine. Whereas in 1956 there were 1144 cases of poliomyelitis, with 57 deaths, there were only four cases in 1964/65, none of which was fatal. The administration of the fourth dose of Salk vaccine or alternatively in certain areas the use of one dose of Sabin oral vaccine as a booster has been recommended.

Infectious hepatitis is prevalent in Australia. The number of notified cases has increased in recent years. In 1957, 4675 cases were reported, as against 7686 in 1964. Research into the epidemiology of the disease is proceeding with a view to improving the methods of control.

The upward trend of the venereal diseases that has been observed throughout the world has also been experienced in Australia. In addition to the increase in the notification of both gonorrhoea and syphilis, a significant feature has been the incidence of the diseases at ages below 30, and in particular in the 15 to 29 year age-group, where 24 per cent. of all cases were found in 1963.

Chronic and Degenerative Diseases

The chief causes of death in Australia are to be found in the chronic and degenerative diseases, notably heart disease, cancer and the so-called cerebral catastrophes due to vascular disease. Attempts to reduce the death rate from heart disease have been made, using publicity methods directed to the hazards of modern ways of life, and amongst them dietary faults and lack of exercise. A non-governmental heart foundation has been established which, in addition to promoting research, will undertake education of the medical profession and the public on the subject.

The prevalence of cancer has been increasing in recent years, particularly cancer of the lung. In consequence much publicity has been given to the relationship between smoking and this disease. The establishment of cancer registries in each state has been recommended. This should ensure better follow-up of cases, provide opportunities for epidemiological inquiries, and facilitate the assessment of the comparative values of therapeutic measures of various kinds, and also of preventive programmes.

Specialized Units

In 1963, infant and child care in Australia was based on 1796 infant welfare centres, including 23 mobile units. A grand total of 3 644 631 attendances were made at these centres. In addition, the Bush Nursing Association provided 151 centres for maternal and child care.

Practically all the schoolchildren in Australia are subjected to periodic medical examination under arrangements made by the state governments, except in the Capital and Northern Territories, where the Commonwealth Health Department is responsible. In 1963, out of 2 305 886 children at school, 673 762 were examined.

As stated in an earlier section of this review, mental health arrangements are in the process of reorganization. In 1963 New South Wales provided ten outpatient psychiatric clinics, Victoria 26 and Western Australia two.

The Commonwealth Department of Health maintains a network of 15 laboratories throughout Australia. These provide a large amount of clinical pathological services. Altogether 1 618 311 tests were carried out in respect of 403 270 persons in 1963/64.

Environmental Sanitation

As regards water supplies, the greater proportion of the population in every state is served by a community-reticulated water supply. In the metropolitan areas of the states almost every dwelling has a piped water supply. The position with regard to the provision of sewerage and drainage systems is less satisfactory, even in the metropolitan areas. Whereas an estimated population of 5 962 000 in the metropolitan areas of five of the six states was supplied with piped water in 1963, sewerage and drainage systems were available to only 3 878 000 persons in these same districts.

Major Public Health Problems

The health problems of Australia correspond to those of the developed countries of the western world. They are concerned with such questions as the chronic and degenerative diseases, mental health, the maintenance of a highly-immunized community, dental health, accidents and alcoholism. To this list should be added infectious hepatitis, tuberculosis and venereal disease.

Owing to differences in geography and the degree of urbanization, the problems of certain states present special features. In the north and centre of Australia, where the indigenous component of the population is

mainly found, leprosy and trachoma have shown a significant incidence. The most heavily populated and urbanized state, New South Wales, has to contend in addition with the problems arising from the aging of the population, the commercial advertising of food and drugs, and the physical unfitness of many members of the population as instanced by the high rejection rate of national service recruits.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Australia saw a gradual improvement in economic conditions and standards of living in the decade. However, the comprehensive system of social security which its inhabitants enjoy dates from before 1955. Under the Commonwealth Social Services Act of 1947, provision was made for the payment of retirement pensions, maternity allowances, child endowments, widows' pensions and payments in respect of periods of unemployment and sickness. These benefits were supplemented in 1953 by the National Health Act, under which payments are made towards the cost of medical care whether received from a general practitioner or in a hospital, or in the form of drugs and medicinal preparations. These social welfare provisions were simplified administratively and enlarged both in scope of application and in content during the decade. The benefits are based on a system of voluntary insurance. In practice a patient receives a fixed contribution to the itemized costs of treatment by a general practitioner, or towards the daily cost of his maintenance in hospital. In the case of drugs and medicinal preparations the recipient pays the first five shillings of the cost of the prescription. During the ten years under review there was a general expansion in the coverage of the national health services. In 1954, 51 per cent. of the total population was covered by voluntary insurance for hospital benefits; in 1964, 74 per cent. was covered. For medical benefits the figures were 39 per cent. in 1954 and 73 per cent. in 1964. For pharmaceutical benefits comparisons must be made between 1960/61 and 1963/64. Over this period the number of prescriptions increased by 42.1 per cent.

One of the developments of recent years has been the increasing use of therapeutic drugs, many of them of great potency. It has therefore become necessary not only to institute proper control of the standards and quality of drugs, both locally manufactured and imported, but also to ensure that they are safe to use therapeutically. For this purpose the National Biological Standards Laboratory was established in 1958, and an Australian Drug Evaluation Committee was appointed in 1963.

National Health Planning

No new comprehensive national health plans have been proposed for Australia. Programmes in certain of the health fields have been prepared and are in the process of implementation by the states concerned. Smoking and its relationship to cancer of the lung has been the subject of advice by the National Health and Medical Research Council. It was suggested that cigarette and tobacco advertisements in the press, on television and the radio should be controlled, but by 1964 not a great deal had been achieved. Health education in the schools, however, has been intensified. Other programmes formulated by the governments of the states deal with water and air pollution and alcoholism.

Medical and Public Health Research

Australia has a National Health and Medical Research Council under the chairmanship of the Director-General of Health. This not only sponsors research in universities and special institutes attached to hospitals but also advises the Commonwealth Government and state governments when scientific opinion may be useful in the formulation of policy. At the federal level, also, a considerable amount of research is carried out at the School of Public Health and Tropical Medicine and at the other major institutes administered by the Commonwealth Department of Health. The largest individual research centre is the John Curtin School of Medical Research, whose annual budget, provided by the Commonwealth Government, amounts to over £A 600 000.

Medical research in Australia covers a wide range of activities. At the John Curtin School research is in progress in all the scientific fields related to medicine. The establishment of the National Heart Foundation has resulted in an extension of research into the heart diseases. Advances have been made in the treatment of hypertension, in cardiac surgery, and in the development of spare parts for defective hearts. There is also considerable cancer research.

During 1962 a survey was made of the expenditure on medical research in Australia and the figures which follow probably cover 90 per cent. of the total. The total ascertained expenditure amounted to £A 2 747 867. The contributing sources were: Commonwealth Government funds, £A 1 301 794; state government funds, £A 262 714; universities, hospitals, foundations, etc., £A 726 801; foreign grants, £A 456 558.

Government Health Expenditure

In the fiscal year 1963/64 the total general government revenue was £A 1970 million, of which £A 99 million (i.e., five per cent.) were devoted to the provision of health services and the improvement of health facilities. This was equivalent to an expenditure of £A 9.0 per head on these services, as compared with £A 4.8 in the fiscal year 1957/58. To this must be added the expenditure by the states on the health services for which they are responsible. The Commonwealth Department of Health also incurred expenditure amounting to £A 3.9 million on the provision of free milk to schoolchildren.

BRITISH SOLOMON ISLANDS PROTECTORATE

Population and Other Statistics

At the last census, taken in November 1959, the population of the British Solomon Islands was 124 076. The population was estimated at 130 000 in 1963 and at 133 200 in 1964.

The statistics of causes of death are incomplete, as they are based solely on hospital records. Information on causes of death occurring outside the hospitals is not available.

The available morbidity data for communicable diseases covers only cases admitted to government hospitals and treated in government out-patient establishments. With these qualifications, the most frequently recorded communicable diseases in 1964 were: malaria (20 091), diarrhoea and enteritis (4303), bronchitis (2784), measles (2060), pneumonia (1707),

influenza (1120), tuberculosis, all forms (331), filariasis (255).

Organization of the Public Health Services

The Government Medical Department is primarily charged with the responsibility for the organization and supervision of all activities in the field of public health and sanitation. It is headed by the Director of Medical Services. In each of the three medical districts there is a district medical officer who is *ex officio* medical officer of health for his district.

Hospital Services

In 1963, in-patient facilities were provided at 119 establishments throughout the Islands with a total

bed capacity of 1283 (9.87 beds per 1000 population) distributed as follows:

Category and number	Number of beds
General hospital	1 158
Rural hospitals	8 369
Medical centres	108 600
Leprosaria	2 156

The general hospital admitted 2355 patients and the rural hospitals 5936 in 1963.

Out-patient care was given in 1964 in nine hospital out-patient departments, 67 health centres, 12 dispensaries, 55 medical aid posts and 70 malaria aid posts.

Medical and Allied Personnel

In 1963, there were 23 doctors in the Islands, of whom 21 were employed by the Government. There was thus one doctor for every 5650 inhabitants. The Government also employed 90 medical assistants who had three years of professional education.

Other health personnel included:

Dentist	1
Pharmacists	2
Nurses with midwifery qualifications	48*
Sanitary inspector	1
Laboratory technicians	3
X-ray technician	1

* In government service.

Communicable Disease Control and Immunization Services

A malaria eradication pilot project was started in 1962 with the assistance of WHO and concluded in 1964. The pilot area comprised the island of Guadalcanal and the principal islands of the New Georgia group. From 1963 onwards, a network of approximately 100 malaria aid posts and passive case-detection units were developed in the project area preparatory to the full implementation of surveillance operations. The pilot project has been successful in interrupting transmission. A full-scale Protectorate-wide eradication programme is planned for 1969.

Tuberculosis continues to be the second major health problem in the British Solomon Islands. It is estimated that approximately three per cent. of the population suffer from tuberculosis. No major attack on this disease is contemplated in the immediate future as all personnel and material resources are devoted to the malaria eradication project. At the end of 1964, 760 tuberculosis patients were on the Central Tuberculosis Register; this figure represents a 56 per cent. increase in one year. It is estimated

that only one-fifth of all tuberculosis cases are receiving effective treatment at present.

At the end of 1964, 316 cases of leprosy were on the Central Leprosy Register, representing a 37 per cent. increase over the previous year. Helminthiasis are very common and are mainly due to poor village sanitation. As a result of the mass campaign concluded in 1960, yaws appears to be virtually eradicated. A few cases are still occurring in Guadalcanal, Malaita and Choiseul.

In 1963 there were 1031 tetanus and whooping-cough, 3012 poliomyelitis and 1073 BCG immunizations. In 1962, 3050 smallpox vaccinations were performed.

Specialized Units

In 1964 the establishments for specialized medical care included 35 maternal and child welfare centres, four school health units, a dental health service and three leprosy out-patient clinics.

Environmental Sanitation

Of the total population living in the Islands in 1964, only 9400 were served with piped water to their dwellings. Ten thousand inhabitants had individual sewage collection and disposal installations.

Major Public Health Problems

The main public health problem of the British Solomon Islands is the incidence of communicable diseases. Malaria and tuberculosis rank highest in order of importance.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

In the decade 1955-1964 there was very great development of the territory in every field, with emphasis on economic development. Considerable improvements have been made in education, particularly with the formulation of an education policy and the establishment of the first full secondary school. Training institutions are now provided by the majority of government technical departments. The establishment in 1959 of a formal training school at the Central Hospital in Honiara, Guadalcanal, has transformed the basic training of nurses and medical assistants, and made possible the organization of efficient rural health services.

National Health Planning

A White Paper has been prepared by the Director of Medical Services. It sets out the basic principles on which the future medical and public health policy in

the British Solomon Islands should be based, with special reference to the five-year period 1964-1969. These aims are to concentrate on preventive medicine; to undertake a malaria pre-eradication programme leading to a full-scale malaria eradication project; to develop rural health services to the maximum extent, particularly maternal and child health services; to raise the standard of environmental sanitation; and to maintain and improve hospital services. Priorities were established, and cost estimates prepared for the period 1966-1969.

International Collaboration

Technical and material aid is available to the British Solomon Islands from several international

and regional agencies as well as from United Kingdom sources. Such aid has been received from UNICEF, WHO, the Red Cross and the New Zealand Lepers Trust Board. The Medical Department works closely with the South Pacific Commission. The British Solomon Islands are also a member of the South Pacific Health Service.

Government Health Expenditure

In 1964 the total general government health expenditure on current account amounted to £A 215 882; this was equivalent to an expenditure of £A 1.6 per head. A further sum of £A 39 990 was spent on capital account for the improvement and expansion of health services.

BRUNEI

Population and Other Statistics

At the last census, taken in August 1960, the population of Brunei was 83 877. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	87 000	91 000	94 000	97 000
Number of live births	4 312	3 980	3 521	4 178
Birth rate (per 1000 population)	49.6	43.7	37.5	43.1
Number of deaths	606	628	666	621
Death rate (per 1000 population)	7.0	6.9	7.1	6.4
Natural increase (per cent.)	4.26	3.68	3.04	3.67
Number of deaths, 1-4 years	104
Death rate, 1-4 years (per 1000 population at risk)	1.0
Number of infant deaths	206	202	194	167
Infant mortality rate (per 1000 live births)	47.8	50.8	55.1	40.0
Number of maternal deaths	7
Maternal mortality rate (per 1000 live births)	1.68

Of the 621 deaths recorded in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes; pneumonia; tuberculosis, all forms; gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn; bronchitis; diseases of the heart; hypertension.

The communicable diseases most frequently notified in 1961 were measles, influenza, typhoid fever, and dysentery, all forms.

Hospital Services

In 1961, in-patient accommodation was provided at three general hospitals with 372 beds and two

medical centres (without doctor) with 19 beds. The total number of beds was 391 (4.5 per 1000 population).

Medical and Allied Personnel

In 1961, Brunei had 12 doctors, of whom seven were in government service. There was thus one doctor for 7300 inhabitants. Other health personnel included:

Medical assistants	40
Dentists	5
Pharmacist	1
Fully qualified midwives	74
Fully qualified nurses	83
Auxiliaries	159

Immunization Services

In 1962, the following immunization procedures were carried out:

Cholera	34 064
Smallpox	3 364
BCG	2 801
Diphtheria	4 417

Specialized Units

In 1964, 48 centres were engaged on maternal and child care; 17 825 consultations were given to pregnant women, 19 936 to infants under one year of age and 20 886 to children aged between one and five years. A total of 2002 deliveries (48 per cent. of all deliveries) were attended by a doctor or qualified midwife. The 11 dental service units treated 25 231 patients.

CAMBODIA

Population and Other Statistics

At the last census, taken in April 1962, the population of Cambodia was 5 740 115. The estimated population in 1961 was 5 096 600, and in 1963 and 1964, 5 892 200 and 6 021 800.

The communicable diseases most frequently reported in 1963 were: gonorrhoea (120 587), syphilis (17 184), measles (8776), tuberculosis (7910), leprosy (5185), trachoma (3896), infectious hepatitis (3351), malaria, all cases (2213), influenza (1147), typhoid and paratyphoid fevers (319), whooping-cough (152), cholera (79).

Hospital Services

In 1962, Cambodia had six general hospitals with 1995 beds, 20 rural hospitals with 1704 beds, a medical centre with 16 beds, a psychiatric clinic with 900 beds and an ophthalmology clinic with 57 beds. These 29 hospitals provided together 4672 beds (0.8 per 1000 population).

In 1964 nearly 2 000 000 out-patients made over 4.7 million attendances at 24 hospital out-patient departments, five health centres, 12 dispensaries and 183 medical aid posts.

Medical and Allied Personnel

In 1964, there were 300 physicians and military medical officers working in Cambodia. The doctor/population ratio was thus one to 20 000. Other health personnel included:

Dentists	14
Pharmacists	27
Fully qualified midwives	693
Fully qualified nurses	2 108
Veterinarians	82
Sanitary inspectors	299

Immunization Services

The following immunization procedures were carried out in 1964:

Cholera	3 247 855
Smallpox	1 167 333
BCG	1 418
Typhoid and paratyphoid fevers	21
Plague	14
Yellow fever	3

Specialized Units

Maternal and child health services were provided in 1964 at 28 pre-natal and 34 child welfare centres. Domiciliary visits were paid to 29 922 pregnant women, 91 176 infants under one year and 216 202 pre-school children. A total of 52 083 deliveries were attended by a doctor or qualified midwife. There were 76 school health units which looked after 262 004 schoolchildren (about 37 per cent. of the total school population). Three dental health units treated 26 068 patients. Psychiatric consultative services were provided to 1648 new out-patients. There was also a leprosy dispensary. The public health laboratory carried out more than 360 000 examinations of all kinds.

Government Health Expenditure

In the 1963 budget 271.2 million riel were allocated for the provision of health services. This was equivalent to an expenditure of 46 riel per head on these services.

CHINA (TAIWAN)

Population and Other Statistics

At the last census, taken on 31 August 1962, the population of China (Taiwan) was 11 375 085. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	10 970 670	11 348 536	11 696 491	12 070 103
Number of live births	420 254	423 469	424 250	416 926
Birth rate (per 1000 population)	38.3	37.3	36.3	34.5

	1961	1962	1963	1964
Number of deaths	73 823	72 921	71 237	69 261
Death rate (per 1000 population)	6.7	6.4	6.1	5.7
Natural Increase (per cent.)	3.16	3.09	3.02	2.88
Number of deaths, 1-4 years	11 477	9 955	9 381	7 889
Death rate, 1-4 years (per 1000 population at risk)	7.4	6.4	5.9	4.9
Number of infant deaths	12 905	12 329	11 181	9 952
Infant mortality rate (per 1000 live births)	30.7	29.1	26.4	23.9
Number of maternal deaths	403	372	347	331
Maternal mortality rate (per 1000 live births)	1.0	0.9	0.8	0.8

Of the 69 261 deaths recorded in 1964, the main causes were: vascular lesions affecting the central nervous system (7831), malignant neoplasms (5752), pneumonia (5701), tuberculosis, all forms (4877), accidents (4605, including 632 in motor-vehicle accidents), birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (3845), arteriosclerotic and degenerative heart disease and other diseases of the heart (3379), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (3278), bronchitis (3186), suicide and self-inflicted injury (2301).

The communicable diseases most frequently notified in 1964 were: diphtheria (554 cases with 69 deaths), dysentery, all forms (136), typhoid and paratyphoid fevers (101), meningococcal infections (15).

In 1963, 18 363 new cases of syphilis and 402 of poliomyelitis were reported.

Organization of the Public Health Services

The public health services of China (Taiwan) are organized at national, provincial and local (i.e., city and county) levels.

At the national level there is the Department of Health Administration, which is a section of the Ministry of Interior. Its functions are concerned with the planning and implementation of national health programmes, supervision of the provincial health administration, international co-operation, registration of medical personnel, registration and control of drugs, supervision of the national narcotics bureau, and other national health institutions.

The Provincial Health Department has the overall responsibility for the curative and preventive medical services throughout Taiwan, and supervises the activities of the five city and 17 county health departments.

The cities and counties are further subdivided into 361 units and districts, each of which has a health station. The health departments of the cities and counties manage their local hospitals and tuberculosis centres, and are responsible for the medical care services, communicable disease control, laboratory services, etc. They also supervise the 361 health stations. These latter provide a local service of medical care and a wide range of public health services. In an individual health centre it is customary for the morning session to be devoted to medical care activities, for which a small fee is charged, except to the indigent. In the afternoon attention is given as necessary to maternal and child health, health education, school health services, immunization, sanitary inspection, etc.

Changes in the Health Services and their Administration which occurred during the Period 1961-1964

There were a number of important developments in the extent and administration of the national health services during the period 1961-1964. These included a revision of the Local Government Act, which resulted in the 361 health stations being assigned for operational purposes to the local authorities. Considerable attention was also given to the strengthening of the industrial health services. Three industrial health centres were established and seven coal-mines were provided with bathroom and latrine facilities with a view to controlling hookworm infestation of the miners. A wide-scale poliomyelitis immunization campaign was started and between May 1964 and the end of the year 500 000 children were immunized. The family planning programme, which was initiated in 1954, was extended greatly in 1963, and now involves the national and child health service and the village health education nurses.

Hospital Services

Altogether 9193 beds were provided in provincial hospitals in 1964. This total included 1137 beds in a leprosarium. The other 8056 beds were distributed between general and base hospitals and specialized institutions for maternity, infectious diseases, mental disorders and tuberculosis. The provision of hospital accommodation, apart from the leprosarium, was approximately 0.7 beds per 1000 population.

In 1964 the provision of out-patient services was based on 12 hospital out-patient departments (including one private institution) and 27 polyclinics. Between them these treated 360 445 new patients. Apart from the hospitals, out-patient services were available at four health centres, 361 health stations or dispensaries, and 140 health rooms or medical aid posts. There were also two mobile health units. These other establishments received 1 759 687 new patients in 1964.

Medical and Allied Personnel and Training Facilities

In 1964, there were 4983 physicians in China (Taiwan)—equivalent to one for every 2400 inhabitants. Other health personnel included:

Dentists	816
Pharmacists	1 110
Pharmaceutical assistants	478
Fully qualified midwives	2 156
Fully qualified nurses	1 852

Professional personnel in medicine, dentistry and pharmacy are trained at the five medical colleges.

Facilities for the training of midwives, nurses and auxiliary personnel are available at seven schools of nursing and midwifery and two other institutions.

Post-graduate instruction in biochemistry, pathology, pharmacology, physiology and public health is given at five specialized institutes, and also at the Provincial Institute for Health. Emphasis is placed on the in-service training of personnel, and on their participation in group training courses. Such groups may be composed of physicians, nurses, midwives, sanitarians and even clerks. Another recent development has been the training of hospital interns in rural health field work.

Communicable Disease Control and Immunization Services

There have been considerable achievements in disease control in recent years. Cholera, after an interval of 16 years, reappeared in July 1962, and was brought under control in two months. The epidemic was due to the El Tor vibrio, and 383 cases were confirmed, with 24 deaths. The economic loss, however, was considerable owing to the suspension of fruit and food exports. Control of the epidemic was obtained by well-established methods. Ten million people were vaccinated in each of the three years 1962, 1963 and 1964. The quarantine and environmental services were constantly active. In 1963 and 1964 approximately 5600 wells and 5500 latrines were either repaired or constructed. Specimens of open well-water, beverages, vegetables and fruits were subjected to bacteriological examination, and rectal swabs were taken periodically from cholera cases, carriers, contacts, water-plant employees and food handlers. In 1963, a health education campaign was carried out by 44 specially trained public health nurses.

The strengthened quarantine services have also been useful in preventing the import of smallpox and plague. Vaccination against smallpox is compulsory. Two diseases—diphtheria and poliomyelitis—are prevalent, and the incidence of and mortality from the former in particular tend to increase. Poliomyelitis has declined in incidence, there being 666 cases in 1962 and 410 in 1964. The case fatality rate remained high, being of the order of 45 to 50 per cent., and there were obviously many undiagnosed cases. Immunization on an extensive scale is being used in respect of both diseases, and for whooping-cough.

Japanese encephalitis is causing concern. There were 699 cases in 1963 and 444 in 1964. It is a seasonal disease, occurring mostly between July and September. It attacks principally children aged between five and nine, and its case fatality rate is

approximately 20 per cent. A pilot field trial using purified mouse-brain vaccine was carried out in 1965 in an epidemic area with 240 000 children aged between five and seven. The trial is being followed by a mass vaccination campaign.

The malaria eradication programme commenced as a control operation in 1952. It passed into the maintenance phase in 1965. The number of cases detected in 1964 was 39, none of which was indigenous. As from the beginning of 1963, the transfer of surveillance responsibilities from the malaria eradication services to the regular health network has been deliberately planned and gradually effected.

Filariasis is another of the health problems. It is almost entirely restricted to the south-west of Taiwan. Surveys of villages have shown microfilaria rates varying from 1.1 per cent. to 16.5 per cent., but information about the incidence of the disease is still incomplete. Antimosquito measures and mass drug treatment are being used to control the prevalence of the disease, with encouraging results.

Although a considerable measure of success is to be recorded in the control of tuberculosis, its incidence and mortality remain high. The tuberculosis mortality rate, which was 285 per 100 000 in 1947, had fallen to 42.8 in 1961, but was still 40.4 in 1964, when 4877 deaths were recorded. Mortality, though at its highest in the oldest age-group, is also high in the 30-50 age-group, and this is a detrimental factor in the economic growth of the country. The situation has caused concern, and new methods of attack are being considered. A series of trial project areas have been demarcated in which modern methods of diagnosis, X-ray and sputum examinations of whole households will be accompanied by chemotherapy on a domiciliary basis and BCG vaccination of all newborn children simultaneously with smallpox vaccination.

Trachoma is one of the commonest diseases. Its heaviest incidence is in the primary school entrant. Where this is found to be 50 per cent. or more, blanket treatment of all family contacts is carried out. Elsewhere treatment is limited to the active case. As the result of these operations the incidence amongst schoolchildren declined from 36 per cent. of those examined in 1960 to 22 per cent. in 1963/64.

Great reliance is placed on the use of immunization in the control of the communicable diseases. The procedures carried out in 1964 against the diseases named included the following:

Cholera	9 949 030
Smallpox	2 298 908
Poliomyelitis (Salk vaccine)	1 055 656
Poliomyelitis (Sabin vaccine)	176 072
Tetanus (Including boosters)	712 681
BCG	611 476
Diphtheria and whooping-cough	610 402
Diphtheria (including boosters)	369 501
Typhoid and paratyphoid fevers	10 597

Specialized Units

In 1964, maternal and child health services were provided at 423 pre-natal units and 474 child health service units. The pre-natal units were attended by 56 071 pregnant women, while domiciliary visits were paid to another 46 337. A total of 280 925 deliveries (67 per cent. of all births) were attended by a doctor or qualified midwife. At the child health units, 65 830 infants and 117 536 children aged between one and five years received services, and 202 014 infants and children under the age of five were visited. School health services based on 2019 units were available to a varying extent to the school population of over two million. The facilities most readily accessible were those for immunization against cholera, which were available to 99.8 per cent., and for health examination. The number of health examinations performed was 907 345, which covered 43.4 per cent. of the school population.

Five psychiatric out-patient clinics have been established. They received 6321 new patients in 1964. Other health care units included 15 leprosy clinics, 296 trachoma control units, 28 tuberculosis clinics and 425 venereal disease control units. The 36 public health laboratories carried out approximately 2 200 000 examinations in 1964.

Environmental Sanitation

In 1963, out of a population of 11.7 million, approximately 3 700 000 persons had piped water to their dwellings, and 550 000 had to depend on public fountains. The remainder obtained their water supply from wells or other sources. In brief, only 33 per cent. of the population have a safe water supply.

Major Public Health Problems

Taiwan with its rapidly growing population, with which is associated a steadily increasing population density, is confronted by a number of urgent health problems. They are, in order of importance:

- (1) rapid population growth;
- (2) exposure to major epidemic invasion, e.g., by cholera;
- (3) tuberculosis;
- (4) poor sanitation, leading to a high incidence of intestinal parasitosis;
- (5) insufficient public health knowledge;
- (6) low-quality foods and drugs;
- (7) absence of industrial health facilities;

- (8) increasing incidence of epidemic disease of the central nervous system;
- (9) shortage of personnel, particularly midwives.

The Government has reviewed the relative priority of these problems from the angle of feasibility of attack. In doing so it has applied such criteria as high economic justification; existence of "popular" felt needs; importance as a cause of morbidity and mortality; the availability of means of solution at a reasonable cost; the need for programmes aimed at prevention.

In the light of these criteria, the highest priority has been assigned to reorganization of services; communicable disease control; tuberculosis control; family planning; environmental sanitation; industrial health.

Social and Economic Developments of Significance for the Health Situation during the period 1955-1964

Population Increase

The population of China (Taiwan) increased from 8 750 571 at the beginning of 1955 to 12 256 682 at the end of 1964. The population density per square kilometre of land rose from 251.8 to 341. During the same period the crude death rate fell from 8.6 per 1000 in 1955 to 5.7 in 1964. The crude birth rate remains high, although it fell from 45.3 in 1955 to 34.5 in 1964. There has been a reduction in the annual rate of natural increase from 3.5 at the beginning of the decade to 2.9 per cent. in 1964.

The rapid growth of population has had serious economic consequences. The population is young. In 1963, 54.2 per cent. of its members were below the age of 20. As a result the dependency burden is high. The increasing popular concern is reflected in the acceptance of the idea of population control instead of the traditional large family. The Family Planning Association of China was established in 1954, and with considerable financial assistance from abroad a very large family planning programme has been instituted. This programme includes training courses for obstetricians and gynaecologists, medical follow-up studies of the acceptability and effectiveness of the methods used, and evaluation of the programme as a whole.

Economic Development and Industrialization

During the decade the economy of Taiwan made a steady and continuous advance in many fields but particularly in the development of industries. This has been accompanied by an increase in the national *per capita* income, and an improvement in the standard

of living. The increase in agricultural production has resulted in better nutrition. During the period from 1953 to 1960 the trend towards industrialization was most marked. About 7000 factories were built and the production of articles for daily use was sufficient not only for internal requirements but also for export. The total number of employees increased from 309 887 in 1954 to 445 667 in 1961. This industrial expansion raised many problems, including a number of industrial hazards which had not previously been obvious. It has accordingly been necessary to improve the arrangements for the health and safety of industrial workers, to establish an industrial health division in the Provincial Health Department, and to promote labour insurance schemes.

Transport

Trains and buses are the most important means of transport in Taiwan. To meet the increasing demands of railway and road passengers, the length of both railways and highways has been extended. The number of motor-cars increased from 16 102 in 1955 to 56 774 in 1961.

Education

Universal education has been one of the Government's major policies. There were 1884 schools in 1961 as compared with 1399 in 1955. In 1961, 96 per cent. of all children between the ages of six and 12 years were attending primary schools. The number of other schools and students has also increased substantially. This extension in school facilities has enabled increasing attention to be given to the health care, nutrition and health education of the child population.

National Health Planning

Planning for national economic development began in Taiwan in 1953 with the introduction of the first four-year plan. The third four-year plan was completed at the end of 1964. Education and health were regarded as being of low priority and were not included in the three plans. In 1963, however, because of the relationship between population growth and economic development, health personnel were included in the preparation of the latest economic development plan. Despite their earlier exclusion from economic planning, the Ministry of Education and the Department of Health Administration prepared their own four-year plans in their respective fields. The Provincial Health Department has worked out a ten-year health plan for the period 1966-1975. This plan sets out pro-

grammes of action, desired goals and estimated financial requirements for the period. The machinery for implementation is also laid down in each individual programme. The ten-year plan is, in effect, a series of 11 programmes directed at obtaining the necessary manpower and facilities with which to resolve the various major public health problems already mentioned.

Medical and Public Health Research

Medical and public health research is carried out at the national and provincial levels and under the auspices of private agencies. At the national level the main research centres are the government training institutions and schools, the five graduate scientific institutes, the central laboratory, the research laboratory for cardiac diseases and surgery, and the Veterans' General Hospital. At the provincial level, research is carried out in a number of institutes, hospitals, tuberculosis control centres and industrial health centres. Research is also conducted at a number of medical colleges which have been established under the auspices of private agencies in recent years. Among the subjects on which research has been active are the epidemiology of mental disorders, cholera, virus diseases, family planning techniques, accidental death in childhood, and the accuracy of causes of death as reported in medical certificates.

International Collaboration

Taiwan received a total of 292 fellows from other countries during the period 1961-1964, and during the same period was provided for its own nationals with 47 WHO fellowships and 18 fellowships from the United States Agency for International Development (AID). A very considerable amount of financial aid has also been received from AID, UNICEF, WHO and other sources. This assistance was spread over almost every field of public health activity.

Government Health Expenditure

In the fiscal year 1963/64, NT \$180 million (or approximately 13 per cent. of total general government consumption expenditure) were devoted to the provision of health services. This was equivalent to an expenditure of NT \$15.1 per head on these services. A further sum of NT \$20 million was spent on capital account for the improvement and expansion of health facilities.

COOK ISLANDS

Population and Other Statistics

At the last census, taken in September 1961, the population of the Cook Islands was 18 378. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	18 293	18 711	19 129	19 547
Number of live births	904	871	904	894
Birth rate (per 1000 population)	49.4	46.6	47.3	45.7
Number of deaths	161	156	168	204
Death rate (per 1000 population)	8.8	8.3	8.8	10.4
Natural increase (per cent)	4.06	3.83	3.85	3.53
Number of deaths, 1-4 years	19	16	21	25
Number of infant deaths	44	42	46	70
Infant mortality rate (per 1000 live births)	48.7	48.2	50.9	78.3

In 1964 the total number of deaths was 204. The main causes of deaths registered in the Rarotonga group were: pneumonia (49), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (28), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (20), tuberculosis, all forms (12), malignant neoplasms (11), vascular lesions affecting the central nervous system (11).

The communicable diseases most frequently notified in 1964 were: influenza (5440), bacillary dysentery (1566), whooping-cough (297), typhoid fever (53).

Organization of the Public Health Services

All health services in the Cook Islands are provided by the Health Department. This Department is represented in the Government by a Minister of Health to whom the Chief Medical Officer, who is the senior executive officer, is responsible. The Health Department comprises four sections: public health, clinical services, dental services, and clerical services. The public health section is in the charge of a medical officer of health who is assisted by an assistant medical officer, a district nurse supervisor and a senior inspector. In the outer islands assistant medical officers of health carry out public health duties under the direction of the Medical Officer of Health. The clinical services are administered by a medical superintendent. The dental services, for which clinics are provided on each island, are in the charge of a principal dental officer.

Hospital Services

In 1963, the Cook Islands had nine hospitals and establishments for in-patient care providing 158 beds (8.3 per 1000 population), distributed as follows:

Category and number	Number of beds
General hospital	1
Rural hospitals	5
Tuberculosis hospital	1
Psychiatric hospital	1
Leprosy clinic	1

Out-patient facilities were available in 1964 at one hospital out-patient department, seven health centres and four dispensaries. Altogether 56 470 attendances were recorded at these establishments.

Medical and Allied Personnel

In 1963 the Cook Islands had 20 physicians and assistant medical officers who were all working in government service. The doctor/population ratio was thus one to 950. There were also two pharmacists.

Communicable Disease Control

Malaria and bilharziasis do not occur in the Cook Islands. No cases of yaws and poliomyelitis have been recorded since control programmes were initiated. Vaccination is carried out against diphtheria, whooping-cough and tetanus, and oral poliomyelitis vaccine is given to infants. BCG, case-finding and contact tracing are the main features of the tuberculosis control programme. The tuberculosis incidence rate was 9.6 per 1000 inhabitants in 1964. Filarial infections are common in all islands. In addition to mosquito control, the population in Atiu, Mauke and Pukapuka is treated with diethylcarbamazine citrate. It is planned to extend this chemotherapeutic treatment to the whole island group. The incidence of intestinal helminthiasis has been reduced through health education in hygiene, legislative measures and routine chemotherapy of schoolchildren.

Chronic and Degenerative Diseases

Anaemia is frequently found in infants and is due to inadequate nutrition and chronic infections. All infants attending the child welfare association clinics and all children admitted to hospital are subject to

haemoglobin tests. Appropriate therapy is administered when indicated. Nutritional education at all levels is particularly stressed.

Specialized Units

In 1964, maternal and child care services were based on 38 prenatal units and 49 child health units. During the year, 257 pregnant women, 1651 children under one year and 7134 children between one and five years of age attended these centres. In all, 612 deliveries (66 per cent. of all deliveries) were conducted by a doctor or qualified midwife. All schoolchildren received health services given by the district nurse. There were also ten dental service units, one tuberculosis clinic and one clinic for the treatment of anaemia. The public health laboratory carried out approximately 3000 examinations.

Environmental Sanitation

In 1964, of the total population of the Cook Islands, some 9500 inhabitants had piped water to their dwellings and 10 000 had water from community or private wells. Regarding sewage collection and disposal, all inhabitants had individual installations—either septic tanks or latrines.

Major Public Health Problems

The diseases causing the highest morbidity are: infantile anaemia, tuberculosis, filariasis, respiratory infections, gastro-enteric dysentery and cardiovascular diseases. Among these, the latter three diseases are also among the most important causes of death. The most urgent problem arises from the continual increase of the respiratory infections at all ages.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade ending in 1964 was marked by an increasing population movement from island to island, but mostly from the outer islands to Rarotonga and to New Zealand. This migration is mainly caused by greater employment opportunities, increased remuneration and the attraction of the larger community. It has, however, resulted in housing diffi-

culties, overcrowding, infections and malnutrition in Rarotonga. Many young adults emigrate to New Zealand; the care of young children is left to the older generation. Exposure to European standards of living and commercial practices has led to economic pressures on individuals. Nutrition, housing and infant care have been adversely affected by these pressures. The decade under review was a period of transition from subsistence to money economy, as well as of transition from a completely Polynesian to a European way of living. Education has been gradually improved, benefiting indirectly the health and hygiene of the inhabitants.

National Health Planning

No major changes in the health services of the islands are anticipated. Particular attention is being given to the improvement of environmental sanitation and to school health services. As staff becomes available, health education activities will be expanded. It is also planned to improve the statistical services, to rebuild the hospitals on Rarotonga and Atiu islands and to continue special programmes in respect of malnutrition, anaemia and infant mortality.

Medical and Public Health Research

Research in the Cook Islands has been undertaken by the Medical Research Council of New Zealand. Research has been directed mostly towards filariasis, elephantiasis, helminthic infestation and anaemia.

International Collaboration

Collaboration in the field of health has been maintained with New Zealand, and with WHO and the South Pacific Commission.

Government Health Expenditure

In the 1964/65 fiscal year the total general government consumption expenditure amounted to £NZ 1 631 843, of which £NZ 180 584 (i.e. 11.0 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of £NZ 9.2 per head on these services. A further sum of £NZ 27 713 was spent on capital account.

FIJI

Population and Other Statistics

At the last census, taken in September 1956, the population of Fiji was 345 737. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	407 443	420 862	434 459	449 176
Number of live births	16 656	16 644	16 519	16 989
Birth rate (per 1000 population)	40.9	39.5	38.0	37.8
Number of deaths	2 622	2 653	2 510	2 720
Death rate (per 1000 population)	6.4	6.3	5.8	6.1
Natural increase (per cent.)	3.45	3.32	3.22	3.17
Number of deaths, 1-4 years	226	189	192	247
Death rate, 1-4 years (per 1000 population at risk)	3.85	3.21	3.15	4.0
Number of infant deaths	556	491	453	518
Infant mortality rate (per 1000 live births)	33.4	29.5	27.4	30.5

In 1964, the total number of deaths was 2720. Accurate information on causes of death is available only from the main hospitals, where the following main causes were recorded: chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (78), pneumonia (72), congenital malformations, birth injuries, post-natal asphyxia and atelectasis and other diseases peculiar to early infancy and immaturity (69), tuberculosis, all forms (32), malignant neoplasms (31), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (30), all accidents (27, including 8 in motor-vehicle accidents), vascular lesions affecting the central nervous system (22), non-meningococcal meningitis (17), nephritis and nephrosis (13).

In 1964, the communicable diseases most frequently notified were: influenza (42 851), measles (4288), whooping-cough (819), trachoma (361), infectious hepatitis (269), bacillary dysentery (116), leprosy (43), yaws, new cases (37), meningococcal infections (29), syphilis, new cases (24).

In 1963, 529 new cases of tuberculosis, all forms, and 445 cases of gonorrhoea were reported.

Organization of the Public Health Services

Since the establishment of the member system of government in July 1964, the Honorary Member for Social Services is in charge of the overall guidance of the Government's health policy. At the departmental level, the responsibility for advising the Government and for implementing government policy in health

matters rests with the Director of Medical Services in the Department of Health. He is assisted by a deputy director of medical services and since 1963 by an assistant director of medical services. The Director of Medical Services is also Chairman of the Central Board of Health, which gives advice to local health authorities and adjudicates in appeals against a ruling of such authorities.

For administrative purposes, Fiji is divided into four divisions, each of which is in the charge of a divisional medical officer who is responsible for the organization of both the curative and preventive services in his area. However, in the Central Division, the Colonial War Memorial Hospital, the Colony's specialist centre, the Tamavua Tuberculosis Hospital and St Giles' Mental Hospital, and in the Eastern Division the Makogai Leprosy Hospital, are administered by medical superintendents directly responsible to the Director of Medical Services. Since 1964, four medical subdistricts have been instituted, each under the control of a subdistrict medical officer, who is usually a locally qualified doctor, assisted by a health inspector and a health sister. The subdistrict medical officer controls the activities of the area medical officers and district nurses in his subdistrict.

Hospital Services

At the end of 1963, Fiji's in-patient facilities were based on the following establishments:

Category and number	Number of beds
General hospitals	5 711
Rural hospitals	14 398
Tuberculosis hospital	1 360
Psychiatric hospital	1 150
Leprosarium	1 306

These establishments admitted 31 000 patients in 1963. In addition to these hospitals there were also three old people's homes with 154 beds and a home for incurables with 11 beds, providing simple forms of medical care. The total available bed complement in Fiji was thus 2090 beds—equivalent to 4.7 beds per 1000 population.

Out-patient care was available in 1964 in 19 hospital out-patient departments and 46 health centres which conduct well-baby clinics and venereal diseases clinics, and also run ante-natal and family planning sessions in addition to casualty work. There were also three medical aid posts at army and police headquarters and in the main prison, and two mobile child welfare and family planning clinics.

Medical and Allied Personnel and Training Facilities

In 1963, Fiji had 63 fully-qualified physicians of whom 33 were in government employment and 30 in private practice. There was thus one doctor to 6900 population. The government services also employed 132 locally qualified medical assistants who had had six years of professional education. Other health personnel included:

Dentists	11
Dental assistants	12
Pharmacists	38
Fully qualified nurses	61
Fully qualified nurses with midwifery qualifications	45
Assistant nurses	453
Veterinarians	5
Sanitary engineer	1
Sanitary Inspectors	11
Laboratory technicians	16
X-ray technicians	5
Assistant health inspectors	33
Dental hygienists	6

Locally qualified medical officers are now accepted for various overseas diplomas. A school of midwifery has been established to train locally qualified nurses to the standard of the New Zealand curriculum, the qualifying examination being that of the New Zealand Nursing Board. In the newly opened school of public health nursing, district nurses are given a three-month course which includes instruction in health education, maternal and child health and family planning techniques.

Communicable Disease Control and Immunization Services

Because of the low standard of sanitation, especially in rural areas, infantile diarrhoea and infectious hepatitis are common ailments. Tuberculosis is still the most important public health problem. Although steadily declining over the period 1955-1964, the incidence of new cases in 1964 was 1.13 per 1000. Control measures against mosquito-borne diseases, both filarial and virus, include health education, an annual "antimosquito week" and the setting-up of a special virus research laboratory in collaboration with the Wellcome Foundation and Otago University, New Zealand. Venereal diseases constitute a grave and growing social problem. A slow but steady rise in the incidence of gonorrhoea is noted. Trachoma, which is not uncommon in Fiji, is characterized by its mildness, good response to treatment and absence of important sequelae. No case of poliomyelitis has been reported since 1962. There was only one case of diphtheria in 1964 and the incidence of pertussis was only two-fifths of the 1962 incidence.

The immunization campaign organized by the Department of Health aims at the inoculation of every child below school-leaving age against tuberculosis (BCG vaccination), poliomyelitis (two doses of Sabin oral vaccine), and diphtheria, pertussis and tetanus (three doses of triple antigen). By the end of 1964, it was estimated that all schoolchildren and about one-half of the pre-school population had been protected.

Chronic and Degenerative Diseases

The pattern of these diseases conforms to that prevailing in more temperate climates. There is, however, a fairly high incidence of diabetes and acute rheumatism among the Indian population. Early treatment of rheumatic fever cases with long-acting penicillin, organization of a house-to-house diabetes survey and the setting-up of a cancer registry are the most recent activities in this field.

Specialized Units

Maternal and child care services were provided in 1964 at 183 centres, including nurses' stations. A total of 10 603 deliveries (62.4 per cent. of all births) were attended by a doctor or qualified midwife. The total school population was under medical supervision either by the two special school health teams operating in Suva and Lautoka or by the local doctor and nurse, who have the responsibility of visiting all schools in their areas. Seven dental health units treated nearly 70 000 patients. There were also two hospital rehabilitation departments, a psychiatric out-patient clinic, a leprosy after-care unit, a leprosy and venereal diseases clinic, and a public health laboratory which carried out 91 491 examinations.

Major Public Health Problems

Fiji's public health problems are related to the incidence of the communicable diseases already mentioned. Special attention is being given to the campaigns against tuberculosis and leprosy. It is expected that the former can be reduced to the level where it is no longer a problem and that the latter can be eradicated. The health authorities are continuing their efforts to improve the rural water supplies and environmental hygiene. Increasing attention is given to family planning. As a consequence of the economic development, there is growing migration to the towns, resulting in an increase in slum dwelling, malnutrition of weanlings, delinquency and venereal disease.

National Health Planning

A five-year plan for overall development was completed in 1965. In this plan health requirements played little part, priority being given to economic development. The Government of Fiji prepared a second five-year development plan for the year 1966 to 1970. This plan was drawn up by a planning officer seconded from the United Nations, but the part relating to health is based entirely on recommendations submitted by the Director of Medical Services. More emphasis is being given to health and medical services. The second plan aims essentially at an increase of recurrent expenditure on health by five per cent. per annum during the period. Since the population is increasing by three per cent., this enables the value of services *per caput* to be increased by two per cent. per annum. However, the recurrent costs of the Department of Health are to remain below 13.3 per cent. of the overall annual budget. In addition to this increase in recurrent expenditure, a capital expenditure of £F3.25 million is planned; this is mainly for repair and replacement of existing hospitals and for the gradual replacing of rural dispensaries by health centres, although extensions of both medical and nursing schools are also included.

Special programmes in operation are directed at the improvement of sanitation in rural areas. The introduction in mid-1963 of water-seal "pour-flush" latrines has proved successful. In an attempt to improve rural water supplies, responsibility for the promotion and co-ordination of effort has been given to the Department of Health. The encouragement of family planning is being actively pursued and contraceptive materials are supplied either free or at a heavily subsidized price by the Department. The aim is to reduce the crude birth rate to 30 per 1000 so as to permit economic development to catch up with the

natural increase of the population. On the advice of the Director of Medical Services, the Government forbade advertisements for cigarettes in official publications.

Medical and Public Health Research

The building of a new laboratory for virological research was started during the period under review at the Colonial War Memorial Hospital. Two nutrition surveys of the diet of Fijian villagers and Indian rural communities in Fiji, and a trial of varying doses of griseofulvin in the treatment of tinea imbricata, were carried out during the period under review.

International Collaboration

Fiji collaborates with the South Pacific Health Service and the South Pacific Commission. Monthly notifications of certain infectious diseases are made and on the outbreak of a serious disease all territories are immediately notified by cable. Both Australia and New Zealand offer temporary registration and post-graduate training to Fiji-qualified doctors and nurses. Fiji also receives assistance from UNICEF and WHO.

Government Health Expenditure

In 1961 the total government consumption expenditure was £F 9.4 million, of which £F 1.2 million (i.e., 12.8 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of £F 2.9 per head on these services. A further sum of £F 255 000 was spent on capital projects included in long-term plans for the development and expansion of health facilities.

FRENCH POLYNESIA

Population and Other Statistics

At the last census, taken in November 1962, the population of French Polynesia was 84 550. The mean population estimate for 1963 was 85 000. The population estimate and some other vital statistics for 1961 are given in the following table:

	1961
Mean population	82 000
Number of live births	4 435
Birth rate (per 1000 population)	54.1
Number of deaths	1 003
Death rate (per 1000 population)	12.2

	1961
Natural increase (per cent.)	4.19
Number of infant deaths	445
Infant mortality rate (per 1000 live births)	100.3
Number of maternal deaths	2
Maternal mortality rate (per 1000 live births)	0.45

Among the main causes of death recorded in 1964 in medical institutions were the following: senility without mention of psychosis, ill-defined and unknown causes (78), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (34), malignant neoplasms (31),

gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (23), nephritis and nephrosis (20).

The communicable diseases most frequently notified in 1964 were: influenza (446), measles (327), tuberculosis of the respiratory system, new cases (150), typhoid and paratyphoid fevers (24), dysentery, all forms (24), leprosy (10).

Hospital Services

At the end of 1963, medical care facilities were based on 23 hospitals and medical institutions. The total number of available beds was 719—equivalent to 8.5 beds per 1000 population. The 11 857 patients admitted during the year received 195 747 days of in-patient care. The 719 beds, of which 692 were in 22 state-maintained institutions, were distributed as follows:

Category and number	Number of beds
General hospital	320
Rural hospitals	182
Medical centres	99
Leprosarium	80
Old people's home	38

In 1964, six hospital out-patient departments, 22 dispensaries and 32 first-aid posts provided out-patient care.

Medical and Allied Personnel

At the end of 1963, French Polynesia had 22 doctors in government service and 13 in private practice. This is equivalent to a doctor/population ratio of one to 2430. Other health personnel included:

Dentists	14
Pharmacists	6
Fully qualified midwives	26
Student midwives	4
Fully qualified nurses	116
Auxiliary nurses	36
Veterinarians	2
Sanitary inspectors	34
Laboratory technicians	9
X-ray technician	1

Communicable Disease Control and Immunization Services

French Polynesia is free from all the most serious tropical diseases. At present tuberculosis, filariasis, leprosy and intestinal parasitoses are the only important endemic diseases existing in the islands. A tuberculosis control project is in preparation. The filariasis eradication programme, which has been in operation for a number of years, has already shown remarkable results. Eosinophilic meningitis, salmonelloses, tetanus, streptococcal infections, amoebiasis

and shigelloses occur sporadically. A campaign has been started with the object of controlling dental caries. This disease is very widespread in the territory and is definitely a serious health problem.

The following immunization procedures were carried out in 1963:

Typhoid and paratyphoid fevers, diphtheria and tetanus (combined)	20 274
Smallpox	17 048
Typhoid and paratyphoid fevers	3 270
Diphtheria and tetanus	2 848
BCG	2 255
Poliomyelitis	538
Cholera	106
Whooping-cough	54

Specialized Units

In 1964, one specialized maternal and child welfare centre recorded 12 126 attendances of pregnant women, 36 764 of infants under one year and 13 144 of children between one and five years of age. A total of 4217 domiciliary visits were paid to pregnant women, 13 978 to infants under one year and 12 049 to pre-school children. A total of 3464 deliveries were attended by a doctor or qualified midwife. One specialized school health centre supervised the total school population. Two dental dispensaries treated 12 911 patients. Thirty-two out-patient consultations for psychiatric disorders were given in the general hospital and 42 in dispensaries. Other specialized units comprised a centre for tuberculosis control, a hospital centre for leprosy and an old people's home. The public health laboratory carried out 93 467 examinations.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The period 1955-1964 was marked by a steady demographic expansion with a high rate of increase. In 1964 about 54 per cent. of the population was under 20 years of age. There has also been increasing urbanization, particularly in Papeete, and a high rate of school enrolment, which is now nearly 100 per cent. in the five to 14 years age-group. Other features of the period have been a rising cost of living and communication difficulties due to geographical dispersion. The demographic and social pressures, with consequent urbanization, strongly influence health policy which has to deal with an increasing demand on the health services of the territory.

National Health Planning

Since 1961, two health plans have been prepared as part of the general development plans of the

territory. The first plan covered the period 1961-1964 and the second the period 1964-1968. A third five-year plan covers the period 1966-1970. This plan will partly overlap with the second health plan and will be integrated not only into the territorial development plan but also into the fifth French plan. In all these health plans, emphasis has been placed on the development of preventive and social medicine. However, because of the inadequacy of the health infrastructure, together with demographic pressure, the extension, modernization and equipment of the medical care facilities has had to be most actively pursued.

Medical and Public Health Research

The activities of the Medical Research Institute of French Polynesia included research into filariasis and tuberculosis, and studies in social hygiene and health

education. The budget of this institute amounted to 15 234 500 CFP francs in 1964.

International Collaboration

French Polynesia receives assistance from UNICEF and WHO. It also collaborates with the South Pacific Commission. Research work in the territory is carried out with the help of the Universities of California and Hawaii.

Government Health Expenditure

The budget for 1964 contained provision for a total expenditure of 1032 million CFP francs, of which 168 million CFP francs (i.e., 16.3 per cent.) were allocated for the provision of health services. This is equivalent to a *per capita* expenditure of 1976 CFP francs, as compared with 1700 CFP francs in 1962.

GILBERT AND ELLICE ISLANDS

Population and Other Statistics

At the last census, taken in April 1963, the population of Gilbert and Ellice Islands was 48 780. Population estimates and some other vital statistics for the years 1961 and 1962 are given in the following table:

	1961	1962
Mean population	46 800	48 200
Number of live births	1 708	1 730
Birth rate (per 1000 population)	36.5	35.9
Number of deaths	386	403
Death rate (per 1000 population)	8.2	8.4
Natural increase (per cent.)	2.83	2.75
Number of infant deaths	88
Infant mortality rate (per 1000 live births)	50.9

Mean population estimates for the years 1963 and 1964 were 48 900 and 51 600 respectively.

In 1965, 121 deaths were recorded in the central colony hospital and in the island dispensaries. The following were among the main causes: pneumonia (19), avitaminoses and other deficiency states (19), dysentery, all forms (10), meningococcal infections (9), cirrhosis of the liver (9), nephritis and nephrosis (8), tuberculosis, all forms (6).

In 1964, the communicable diseases most frequently notified were: influenza (7956), infantile diarrhoea (1707), tuberculosis of the respiratory system, new cases (217), dysentery, all forms (150), meningococcal infections (14).

Hospital Services

In 1965, hospital accommodation was available in two general government hospitals with 218 beds and

a private general hospital with 100 beds. Additional in-patient facilities were provided in a rural hospital with four beds and 30 medical centres which had about 240 beds. The total bed capacity in Gilbert and Ellice Islands was thus approximately 562 (10.6 beds per 1000 population).

In 1965 out-patient care was given at the three hospital out-patient departments and at 32 health centres, and 194 782 attendances were recorded at these establishments.

Medical and Allied Personnel

At the end of 1965, there were 28 doctors of whom 25 were in full-time and three in part-time government service. The doctor/population ratio was thus one to 1900. There were also 46 medical assistants who had graduated at the Fiji School of Medicine after three years of professional education. Other health personnel included:

Dentist	1
Pharmacists	2
Pharmaceutical assistant	1
Qualified nurses	6
Qualified nurses with midwifery qualifications	26
Nursing auxiliaries	16
Sanitary inspector	1
X-ray technician	1
Mosquito and fly control spraymen	5

Specialized Units

Maternal and child health services are provided at approximately 30 units, which comprise the clinics at the Central Hospital, Ocean Island Hospital and

Funafuti Hospital, the village clinics on Tarawa, which are staffed from the Central Hospital by launch and land-rover, and the clinics on the outer islands staffed by assistant medical officers or colony nurses. The public response to these services is still poor, but is improving. In 1965, 762 deliveries were attended by a doctor or qualified midwife. There were 1800 schoolchildren under medical supervision. The dental unit treated approximately 5000 patients. There was also one out-patient clinic for tuberculosis and one for leprosy.

Environmental Sanitation

With the exception of government headquarters on Tarawa, sewage disposal is effected by communal reef

latrines. A small proportion of houses on Tarawa have individual septic tanks. The inhabitants of the islands have to rely for water on communal wells and on rain water catchments.

Government Health Expenditure

In 1965, current expenditure from colony funds for the provision of health services amounted to £A 88 665. This sum represented 8.6 per cent. of the total colony expenditure and was equivalent to an expenditure of £A 1.7 per head. A further sum of £A 20 441 was spent on capital account for the development and expansion of health facilities.

GUAM

Population and Other Statistics

At the last census, taken in April 1960, the population of Guam was 67 044. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	68 102	66 400	68 300	72 498
Number of live births	2 513	2 592	2 506	2 525
Birth rate (per 1000 population) . . .	36.9	39.0	36.7	34.8
Number of deaths	265	315	344	363
Death rate (per 1000 population) . . .	3.9	4.7	5.0	5.0
Natural increase (per cent.)	3.30	3.43	3.17	2.98
Number of deaths, 1-4 years	9	9	23	14
Number of infant deaths	59	71	79	64
Infant mortality rate (per 1000 live births)	23.5	27.4	31.5	25.3
Number of maternal deaths	0	2	0	1
Maternal mortality rate (per 1000 live births)	0	0.8	0	0.4

Of the 363 deaths recorded in 1964, the main causes were: congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (53), all accidents (46, including 15 in motor-vehicle accidents), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (45), malignant neoplasms (34), senility without mention of psychosis, ill-defined and unknown causes (31), vascular lesions affecting the central nervous system (24), pneumonia (22).

The communicable diseases most frequently notified in 1963 were: measles (595), influenza (409), leprosy (66), gonorrhoea (36), tuberculosis, all forms, new cases (34), dysentery, all forms (32), typhoid and paratyphoid fevers (14), scarlet fever (8), infectious hepatitis (6).

Organization of the Public Health Services

The Department of Public Health and Welfare is headed by a director who is responsible to the Governor of Guam. The Department has a division of public health, a division of public welfare and an administrative division. The Division of Public Health is composed of seven sections: public health nursing, maternal and child health and crippled children's service, sanitation, public dentistry, vital statistics, medical laboratory and nutrition.

Hospital Services

In 1962, in-patient care facilities were provided at a general hospital with 160 beds and a tuberculosis hospital with 160 beds giving a total capacity of 320 beds (4.8 per 1000 population). There were 6967 admissions during the year.

In 1964, out-patient facilities were available at 13 hospital out-patient clinics, where 18 155 new outpatients attended, and at 15 health centres, where 34 929 attendances were recorded.

Medical and Allied Personnel

In 1962, 17 physicians were working in Guam. The doctor/population ratio was thus one to 3900. Other health personnel included:

Dentists	4
Dental assistants	8
Pharmacists	2
Fully qualified midwives	3
Fully qualified nurses	85
Auxiliary nurses	12
Veterinarian	1
Sanitary inspectors	8

These figures do not include army health personnel. The military authorities have the responsibility for the health and welfare of the military personnel and their dependants.

Communicable Disease Control

The most prevalent communicable diseases are the intestinal parasitoses. Laboratory tests and treatment are available free of charge and routine tests are made on children entering school. Hepatitis is endemic and gamma-globulin is given to the household contacts of patients. The incidence of gonorrhoea has increased. As a control measure named contacts are located and treated. Tuberculosis remains a problem, though positive cases are hospitalized until they become negative and treatment is then continued on an out-patient basis free of charge. Mass X-ray surveys were conducted in all the larger villages and in junior and senior high schools in 1963 and 1964. The village response, however, was unsatisfactory.

Chronic and Degenerative Diseases

Patients suffering from chronic diseases are referred to the home care programme, and public health nurses assist the families and supervise the care given in the home. In the field of cancer control all women attending the post-natal clinic are given a test for cervical cancer. A modest multiple-screening programme for some 12 chronic conditions has also been started.

Specialized Units

In 1964, maternal and child health services were based on 15 centres where 556 pregnant women, 1158 infants under one year of age and 299 children aged between one and five years attended. Domiciliary care was given to 1303 pregnant women, 1399 infants under one year and 1758 children aged between one and five years. All deliveries were attended by a doctor or qualified midwife. The dental service unit treated 8367 patients. There was also a chest clinic providing medical supervision for tuberculosis outpatients and a dermatological clinic where outpatients suffering from leprosy were supervised. The public health laboratory carried out 33 785 examinations.

Major Public Health Problems

Inadequate environmental sanitation is the most important public health problem in Guam. Of the

civil areas of Guam, only two villages have sewerage systems. Sewage discharged into the sea pollutes much of the highly populated area along the western shore of the island. In consequence, diseases of enteric origin, infectious hepatitis and helminthiasis are common. Sewage disposal lines are being constructed.

Accidents are very frequent, and constitute another important problem. The high death rate from diseases peculiar to early infancy and immaturity is also causing concern. The incidence of tuberculosis remains high, although it is not now one of the chief causes of death. Diseases of the heart, however, figure among the leading causes of mortality. Obesity is common. Dental caries is widespread both among children and adults.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

By the Organic Act of Guam of 1950, the Island became an unincorporated territory of the United States of America. The Governor of Guam is the territory's chief executive; he is appointed by the President with the advice and consent of the Senate of the United States. The legislative power rests with the 21 elected members of the territory's legislature and the judicial power is exercised by the district court of Guam.

Formerly, public health was a division of the Department of Medical Services which included the Guam Memorial Hospital. In 1964, a public law was passed by the Guam legislature which created the Department of Public Health and Welfare.

Medical and Public Health Research

The Epidemiology Branch of the National Institute of Neurological Diseases and Blindness of the United States Public Health Service has a research centre in Guam. The research projects are primarily concerned with the elucidation of the high incidence of amyotrophic lateral sclerosis and parkinsonism-dementia in the Marianas Islands.

Government Health Expenditure

In the fiscal year 1963/64 the total government expenditure on health services amounted to US \$549 044, which was equivalent to an expenditure of US \$7.8 per head on these services.

HONG KONG

Population and Other Statistics

At the last census, taken in March 1961, the population of Hong Kong was 3 133 131. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	3 177 700	3 409 700	3 592 100	3 692 200
Number of live births	108 726	111 905	115 263	108 519
Birth rate (per 1000 population)	34.2	32.8	32.1	29.4
Number of deaths	18 738	20 324	19 748	18 113
Death rate (per 1000 population)	5.9	6.0	5.5	4.9
Natural increase (per cent.) .	2.83	2.68	2.66	2.45
Number of deaths, 1-4 years	1 805	1 688	1 359	790
Death rate, 1-4 years (per 1000 population at risk)	4.4	4.0	3.17	1.8
Number of infant deaths	4 098	4 130	3 801	2 870
Infant mortality rate (per 1000 live births)	37.7	36.9	33.0	26.4
Number of maternal deaths	50	54	34	42
Maternal mortality rate (per 1000 total births)	0.45	0.48	0.29	0.38

Of the 18 113 deaths recorded in 1964, the main causes were: malignant neoplasms (2916), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1904), senility without mention of psychosis, ill-defined and unknown causes (1811), vascular lesions affecting the central nervous system (1717), pneumonia (1590), tuberculosis, all forms (1441), arteriosclerotic and degenerative heart diseases (1017), accidents (983, including 250 in motor-vehicle accidents), hypertension (398), suicide and self-inflicted injury (363), nephritis and nephrosis (274), cirrhosis of the liver (243), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (239).

In the same year the communicable diseases most frequently notified were: tuberculosis, all forms, new cases (12 557), influenza (2473), measles (1218), dysentery, all forms (889), typhoid and paratyphoid fevers (882), chickenpox (718), diphtheria (699), ophthalmia neonatorum (232), malaria, new cases (147), whooping-cough (106), meningococcal infections (38), poliomyelitis (37), cholera (34).

Hospital Services

At the end of 1964, hospital accommodation was available in 175 establishments which provided 12 448 beds (3.4 per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	22
Rural hospital	1
Tuberculosis hospitals	3
Infectious diseases hospitals	2
Maternity hospital	1
Psychiatric hospitals	2
Venereal and skin diseases hospital	1
Children's convalescent homes . . .	3
Private maternity homes and nursing homes	111
Government dispensaries and maternity homes	25
Prison hospitals	4

During the year 1964, altogether 286 702 admissions were recorded in these establishments.

Out-patient care facilities were available in 1964 in ten government hospital out-patient departments, 32 clinics and dispensaries, 16 full-time maternal and child health centres, six medical aid posts and from seven mobile health units. There were 2 032 237 new patients who made 5 893 199 attendances.

Medical and Allied Personnel

In 1964, Hong Kong had 1276 doctors of whom 405 were in government service and 871 in private practice. The doctor/population ratio was thus one to 2900. There were also 73 medical assistants who are non-Registrable doctors permitted to practise medicine by the Government. Other health personnel included:

Dentists	155
Pharmacists	121
Fully qualified midwives	557
Student midwives	209
Fully qualified nurses	714
Fully qualified nurses with midwifery qualifications	2 472
Student nurses	1 500
Nursing auxiliaries	8
Student nursing auxiliaries	44
Veterinarians	6
Sanitary engineers	5
Sanitary inspectors	447
Physical therapists	43
Laboratory technicians	118
X-ray technicians	98
Vaccinators	100
Health visitors	89

Immunization Services

In 1964, the following immunizations were carried out:

Cholera	2 406 623
Smallpox	844 367
Diphtheria	762 886
Poliomyelitis (Sabin vaccine)	243 871
BCG	107 681
Typhoid and paratyphoid fevers	67 792
Epidemic typhus	52

Specialized Units

In 1964, there were 43 527 new attendances at 38 pre-natal centres, and 32 child health units provided services to 58 204 infants under one year of age and to 21 562 children aged between one and five years. Domiciliary care was given to 54 285 infants under one year and to 10 625 children aged between one and five years. A total of 102 771 deliveries (94.7 per cent. of all births) were attended by a doctor or qualified midwife. Twenty-seven dental clinics and 50 dental surgeries treated 26 496 patients. Two independent medical rehabilitation centres were attended by 5359 new patients and five hospital rehabilitation centres by 20 830 new patients. Four psychiatric out-patient clinics provided consultative services for 1433 new patients. Other specialized medical centres included 18 for tuberculosis, 17 for venereal diseases, four for leprosy and 32 for trachoma. Four clinical and two public health laboratories made over one million examinations.

There is a school medical service, subsidized by the Government and operated by private practitioners under a supervisory board.

Environmental Sanitation

In 1964, of the total population of 1 301 316 living on Hong Kong island, 1 127 215 were served with

piped water to their dwellings, 144 583 had to rely on public fountains, 27 340 on community or private wells and 2178 on stream water. In Kowloon and New Kowloon, which have a total population of 1 826 529, 1 361 371 had piped water in their dwellings, 414 270 depended on public fountains and 69 588 on community or private wells, some depending on more than one means of supply. In the New Territories, which have 645 490 inhabitants, 320 000 persons were provided with piped water to their dwellings, 170 000 used public fountains and 155 490 relied on community and private wells and other sources.

As regards sewage collection and disposal, 2 500 665 inhabitants were served by sewage systems only, 57 522 by sewage and sewerage treatment facilities and 1 215 148 had individual installations.

Governmental Health Expenditure

In the fiscal year 1963/64 the total general government expenditure was HK \$1295 million, of which HK \$182 million (i.e., 14.1 per cent.) were devoted to the financing of health services. This is equivalent to an expenditure of HK \$50 per head on these services. Almost three-quarters of the funds allotted for the provision of health services are channelled through the Department of Health; the remainder are covered by the budgets of other departments.

JAPAN

Population and Other Statistics

At the last census, taken in October 1960, the population of Japan was 93 418 501. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Population (1 October)	94 285 000	95 178 000	96 156 000	97 186 000
Number of live births	1 589 372	1 618 616	1 659 521	1 716 761
Birth rate (per 1000 population)	16.9	17.0	17.3	17.7
Number of deaths	695 644	710 265	670 770	673 067
Death rate (per 1000 population)	7.4	7.5	7.0	6.9
Natural increase (per cent.)	0.95	0.95	1.03	1.08
Number of deaths, 1-4 years	13 283	11 698	10 097	9 233
Death rate, 1-4 years (per 1000 population at risk)	2.1	1.9	1.6	1.5
Number of infant deaths	45 465	42 797	38 442	34 967
Infant mortality rate (per 1000 live births)	28.6	26.4	23.2	20.4
Number of maternal deaths	1 914	1 813	1 683	1 699
Maternal mortality rate (per 1000 live births)	1.2	1.1	1.0	1.0

Of the 673 067 deaths recorded in 1964, the main causes were: vascular lesions affecting the central

nervous system (166 901), malignant neoplasms (104 324), senility without mention of psychosis, ill-defined and unknown causes (59 915), arteriosclerotic and degenerative heart diseases (50 846), accidents (40 437, including 16 764 in motor-vehicle accidents) pneumonia (22 968), tuberculosis, all forms (22 929), hypertension (18 207), suicide and self-inflicted injury (14 707), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (13 950).

The communicable diseases most frequently reported in 1964 were: tuberculosis, all forms, new cases (354 243), influenza (107 270), measles (52 056), dysentery, all forms (51 954), trachoma (22 932), scarlet fever (12 984), syphilis, new cases (5332), gonorrhoea, new cases (4037), diphtheria (2804), whooping-cough (1180), typhoid and paratyphoid fevers (1015).

Organization of the Public Health Services

At the national level, the responsibility for the health services rests with the Ministry of Health and Welfare. The organizational structure of the national health and welfare administration comprises the Secretariat

(which also has a Health and Welfare Statistics Division) and ten bureaux for public health, environmental sanitation, medical affairs, pharmaceutical matters and supply, national parks, social affairs, children and families, insurance, pensions, and repatriation. These bureaux direct the national health programmes by giving order to the 46 local prefectural governments. The Social Insurance Agency comprises the Director's Secretariat, the Medical Care Insurance Division, the Pension Insurance Division and affiliated institutions.

Each prefectural government and larger municipal government has its own health department. At the lower administrative level there are health centre districts, in each of which there is a local health centre.

Hospital Services

In 1963, Japan had 32 917 hospitals and establishments for in-patient care providing 985 788 beds (10.3 per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	5 452
Rural hospitals	26 270
Tuberculosis hospitals	474
Infectious diseases hospitals	52
Psychiatric hospitals	629
Leprosaria	14
Convalescence homes	26
	570 724
	189 634
	100 216
	4 240
	105 046
	14 208
	1 720

During the year 4 097 419 patients attended these establishments (excluding the 26 270 rural hospitals) and received 236 613 724 days of in-patient care.

Out-patient facilities were available in 1964 at 6838 hospital out-patient departments, 63 296 dispensaries, 99 mobile clinic cars and five clinic boats.

Medical and Allied Personnel

In 1963 Japan had 103 799 doctors—equivalent to a doctor/population ratio of one to 925. Other health personnel included:

Dentists	33 481
Pharmacists	64 915 ^a
Fully qualified nurses	125 984
Nurses with midwifery qualifications	46 174 ^b
Assistant nurses (with certificate)	89 544
Nursing aides	117 939
Veterinarians	19 744 ^a
Laboratory technicians	6 975 ^c
X-ray technicians	7 623 ^c
Dental laboratory technicians	7 515
Dental hygienists	1 748
Public health nurses	13 910

^a Registered only.

^b Including midwives without nursing certificate.

^c Personnel employed in hospitals only.

Communicable Disease Control and Immunization Services

During 1964, Japan was free from quarantinable diseases, with the exception of two cholera cases. The incidence of poliomyelitis has been considerably reduced following the successful oral administration of Sabin-type vaccine in 1962. The number of Japanese encephalitis cases decreased from 3699 in 1955 to 2596 in 1964. This disease presents peculiar seasonal and regional characteristics. The number of persons who received immunization against it in 1964 is estimated to have been about ten million. The number of cases of dysentery has been gradually decreasing since 1960. The dysentery incidence and death rates reported during 1964 were 53.9 and 0.5 per 100 000 inhabitants respectively. More intensive efforts are being made to obtain the periodic examination and health education of food-handlers, workers in water supply plants and other persons dealing with food for general consumption. An increase of early infectious syphilis has been noted. The reported cases of gonorrhoea have been gradually decreasing. It is, however, estimated that the number of non-reported gonorrhoea cases exceeds the total of those which are reported. The parasitosis control programme included mass examination and treatment for hookworm diseases and bilharziasis, including bilharziasis caused by *schistosoma japonicum*.

Because of the development of chemotherapy and of surgical techniques, the tuberculosis death rate gradually dropped in the period 1955-1964. This decrease was particularly remarkable among the younger age-groups. According to the third nation-wide tuberculosis prevalence survey, carried out in 1963 on a statistical sampling basis, there were 2 030 000 active cases and 1 410 000 inactive cases. A follow-up survey which was carried out in 1964 indicated a gradual decrease of the incidence rate among the younger age-groups and a gradual increase among the older age-groups. The survey also revealed that only 45.6 per cent. of cases diagnosed as having active tuberculosis actually received medical treatment during a one-year period. The total number of registered tuberculosis patients at the end of 1964 was 1 527 657 (15.7 per 1000 population), 64.1 per cent. of whom were active cases. Of the active cases 22.9 per cent. were hospitalized, 57.7 per cent. were under domiciliary treatment and 16.0 per cent. did not receive complete medical treatment. The remaining 3.4 per cent. were not known to have received any treatment.

The following immunization procedures were carried out in 1964:

Typhoid and paratyphoid fevers	17 811 095
BCG	4 604 686
Poliomyelitis (Sabin vaccine)	3 879 580

Poliomyelitis (Salk vaccine)	532 239
Smallpox	3 384 132
Whooping-cough and diphtheria	3 326 136
Diphtheria	2 128 869
Cholera	1 205 918
Whooping-cough	107 749
Epidemic typhus	9 544
Tetanus	282

Chronic and Degenerative Diseases

The vascular lesions affecting the central nervous system, malignant neoplasms and heart diseases have been increasing in recent years. They occupy the leading positions among the causes of death. In 1958 the government established a council to formulate plans for the prevention and control of these adult diseases. All the prefectural health departments are more or less involved in various types of activities in the field of adult disease control, such as epidemiological investigations, early detection and diagnosis, health education and specialized post-graduate training of medical personnel.

Mental Health

A mental health survey was carried out in 1963 with a view to clarifying the prevalence of mental disorders. It revealed that the prevalence rates of these diseases were 1.41 per cent. among men, 1.18 per cent. among women, and 1.29 per cent. in total. The percentage distribution of cases by sex was 53.6 per cent. male and 46.4 per cent. female. Since 1961, the hospitalization costs met by prefectural governments for compulsory hospitalization have been subsidized by the national government up to 80 per cent. There are at present 48 prefectural and six municipal mental health centres operated under the Mental Health Law. Child guidance services are provided at 133 child guidance centres by the local welfare authorities. In March 1965, 12 613 mentally retarded children were being looked after in 198 homes for such children and 2 007 children were attending 54 day care centres for mentally retarded children.

Specialized Units

In 1964, maternal and child care was based on 1 157 centres, which were attended by 683 767 pregnant women, 197 609 nursing mothers, 3 611 438 children under one year and 1 638 468 children aged between one and five years. Public health nurses made 234 687 home visits for pre-natal and post-natal care and

midwives made 342 359 home visits for pre-natal care, particularly for the prevention of toxæmias of pregnancy; 100 865 home visits were paid to premature babies, 949 501 to newborn babies and 135 763 to children aged between one and five years. In 1963, 1 644 073 deliveries, or 99.07 per cent. of all deliveries, were conducted by a doctor or qualified midwife. In 1964, 178 511 persons were engaged in school health work. On average, 220 812 out-patients attended the psychiatric clinics and hospitals per month. Other specialized units included 815 tuberculosis health centres where 34 884 839 persons received X-ray examination. Fifty-two public health laboratories carried out 6 078 671 examinations.

Environmental Sanitation

In 1964, of the total population of Japan, 61 207 000 inhabitants were served with piped water to their dwellings. Regarding sewage collection and disposal, 77 cities operated sewage treatment plants in 1965, which served 11 060 000 inhabitants. A further 120 cities are constructing such plants.

Along with rapid industrial development, increased communications and the heavy concentration of population in the larger cities, environmental pollution has become a social and public health concern. Prevention is recognized as the most important approach to air pollution control.

Medical and Public Health Research

For the purpose of performing research work on technical problems as well as training public health technicians, the following major research or training institutes are affiliated to the Ministry of Health and Welfare: the Institute of Public Health, the National Institute of Mental Health, the National Institute of Nutrition, the National Institute of Health, the National Institute of Leprosy Research, the National Institute of Hospital Administration, the National Institute of Hygienic Sciences and the National Cancer Centre.

International Collaboration

The Ministry of Health and Welfare collaborated in health, medical and social fields under the various schemes of the Overseas Technical Co-operation Agency. Emphasis was placed on medical assistance for countries in South-East Asia, the Middle and Near East and Africa.

LAOS

Population and Other Statistics

Population estimates for 1961, 1962 and 1963 were 1 850 000, 1 882 000 and 1 925 000 respectively.

The most frequently notified communicable diseases in 1964 were: malaria, new cases (39 735), dysentery, all forms (7664), influenza (5049), trachoma (482), whooping-cough (427), meningococcal infections (159), measles (127), typhoid and paratyphoid fevers (106). In 1963, 8096 cases of gonorrhoea, 3805 cases of infectious hepatitis and 3149 new cases of syphilis were reported.

Organization of the Public Health Services

Following the presidential decree of April 1961, the Ministry of Public Health comprises the cabinet of the Minister and the general directorate of public health. This latter includes the division of administrative services, the division of national public health services (covering pharmacies, laboratories, maternal and child health, malaria eradication) and the division of medical welfare institutions.

Hospital Services

In 1963, Laos had five general hospitals with 510 beds, 13 medical centres with 238 beds and three leprosaria with 363 beds. These 21 hospitals and medical care institutions provided altogether 1111 beds which is equivalent to 0.58 beds per 1000 population.

In the same year, 913 002 out-patients attended five polyclinics, 90 rural dispensaries and 12 ambulant infirmaries.

Medical and Allied Personnel

In 1963, 34 doctors of whom ten were in government service were working in Laos. The doctor/population ratio was thus one to 56 600. Other health personnel included:

Medical assistants	17
Dentists	6
Pharmacists	5
Fully qualified midwives	4
Nurses	525
Veterinarians	11

Communicable Disease Control and Immunization Services

The malaria eradication activities which had been undertaken with the assistance of the United States Agency for International Development were discontinued in 1960. In 1964, 39 735 new cases of malaria were reported. The health authorities, in association with WHO and the Tom Dooley Foundation, are planning a tuberculosis control programme in the town of Pakse and in the rural area of Thadena. The yaws campaign in central and lower Laos was concluded in 1959. Despite the satisfactory results, there were still 13 736 cases in 1963. The following immunization procedures were carried out in 1963:

Smallpox	368 434
Cholera	270 704
Measles	28 190
Tetanus	642

Specialized Units

In 1964, nine maternal and child health centres were attended by 6042 pregnant women and 10 454 children of up to six years of age. Domiciliary care was given to 894 pregnant women and 3579 infants and pre-school children. In the same year 669 deliveries were attended by a doctor or qualified midwife. In all, 130 457 schoolchildren, or 22.7 per cent. of the total school population, were under the medical supervision of the school health unit. One dental health unit treated 4039 patients. Laos also had two leprosy out-patient clinics which were attended by 400 persons in 1964. A total of 16 018 examinations were carried out at the public health laboratory.

Major Public Health Problems

Tuberculosis is at present the most important public health problem. The records of medical and health establishments indicate an increasing prevalence of this disease.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review has been marked by the establishment of new primary, secondary and technical schools, the organization of pilot rural development zones and the development of the lower Mekong basin. The presence of bilharziasis in the Pakse area

and in the pilot zone in the Vientiane region was investigated in 1960 and 1961 in collaboration with WHO. A school health service has been set up. The number of rural dispensaries has been increased and maternal and child welfare services have been developed in the provinces.

National Health Planning

The health programmes now in operation in Laos are directed at remedying the shortage of nursing personnel in hospitals and rural dispensaries. A new building for the nursing school will be constructed with the help of the United States Agency for Inter-

national Development. It is also planned to modernize and extend the existing hospital facilities.

Government Health Expenditure

In the fiscal year 1963/64 the total general government consumption expenditure was 4460 million kips, of which 151 million kips (i.e. 3.4 per cent.) were devoted to health services. This is equivalent to an expenditure of 78 kips per head on these services and represents an increase of 10 per cent. over the figure for 1961/62. Health expenditure incurred by the Armed Forces are not included in the above data, nor is expenditure on sewage and refuse disposal.

MACAO

Population and Other Statistics

At the last census, taken on 15 December 1960, the population of Macao was 169 299. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	191 657	274 636	280 597	290 000
Number of live births	4 930	4 604	4 773	4 451
Birth rate (per 1000 population)	25.7	16.8	17.0	15.3
Number of deaths	1 757	1 730	1 802	1 606
Death rate (per 1000 population)	9.2	6.3	6.4	5.5
Natural increase (per cent.) .	1.65	1.05	1.06	0.98
Number of deaths, 1-4 years	152	73	102	55
Number of infant deaths . . .	191	194	200	160
Infant mortality rate (per 1000 live births)	38.7	42.1	41.9	35.9
Number of maternal deaths .	5	3	7	6
Maternal mortality rate (per 1000 live births)	1.01	0.65	1.47	1.35

Of the 1606 deaths recorded in 1964, the main causes were: tuberculosis, all forms (223), malignant neoplasms (181), vascular lesions affecting the central nervous system (163), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (149), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (101), hypertension (81), pneumonia (76).

In 1964, the communicable diseases most frequently notified were: tuberculosis, all forms, new cases (1023), typhoid and paratyphoid fevers (124), whooping-cough (93), diphtheria (47), poliomyelitis (8), measles (8).

Organization of the Public Health Services

Following the promulgation of a decree of 23 January 1964, the organization of the health services in Portuguese overseas provinces also includes the social welfare services, and the designation "health and welfare services" has been introduced. The health and welfare services have three main divisions: technical, administrative and welfare. These services are under the control of the Chief of Health and Welfare Services who is a medical inspector. For administrative purposes the health services are organized in two divisions, with delegated powers. These are the health organization and the medical care organization.

Hospital Services

In 1963, there were 13 hospitals and establishments for medical care in Macao. The total complement of 1936 beds was equivalent to a bed/population ratio of 6.9 per 1000. These beds were distributed as follows:

Category and number	Number of beds
General hospitals	3
Medical centres	2
Maternity clinics	2
Paediatric clinic	1
Cancer hospital	1
Leprosarium	1
Institution for the rehabilitation of drug addicts	1
Institutions for incurables	2
	926
	47
	20
	80
	8
	80
	600
	175

During 1963, 20 237 patients were admitted to these establishments, excluding the medical centres.

Out-patient care was available in 1964 at seven hospital out-patient departments, four health centres and nine medical aid posts. In all, 16 573 outpatients made 44 192 attendances.

Medical and Allied Personnel and Training Facilities

At the end of 1963, Macao had 75 doctors, of whom 21 were in government service and 54 in private practice. The doctor/population ratio was one to 3800. Other health personnel included:

Dentists	34
Pharmacists	8
Midwives (with diplomas issued by Chinese schools)	20
Fully qualified nurses	26
Fully qualified nurses with midwifery qualifications	34
Assistant nurses	36
Assistant nurses with certificates	55
Veterinarians	2
Sanitarians	19
Laboratory technicians	6
X-ray technicians	4

In July 1964, a general regulation regarding the functions of the technical schools of the public health and welfare services in Portuguese overseas provinces was promulgated. Following this, nursing and auxiliary nurse training courses were started in Macao.

Immunization Services

In 1964, the following immunization procedures were carried out:

Cholera	176 216
Diphtheria	18 565
Smallpox	18 846
BCG	1 346

Specialized Units

In 1964, maternal and child care was based on two pre-natal centres and one child health centre, and 2711 pregnant women and 2102 children attended these centres. All the 4216 deliveries were attended by a doctor or qualified midwife. In the same year, 1396 schoolchildren, or 2.4 per cent. of the total school population, were under medical and health supervision at four school health units. The post of School Health Officer was created in 1964 as a result of the reorganization of the health and welfare services. In addition to the two dental health units where 9842 patients received dental treatment, there were, in 1964, 35 dentists licensed by the government health department to practise in Macao in a private capacity. A total of 810 consultative psychiatric sessions were given to 321 new out-patients. There were also one tuberculosis dispensary, one venereal diseases dis-

pensary, one leprosy out-patient clinic and one rehabilitation centre for drug addicts. The public health laboratory carried out 19 149 examinations.

Environmental Sanitation

In 1964, 280 000 of Macao's population of 290 000 lived in one community, the remaining 10 000 lived in two smaller communities. All the three communities had piped water systems. Some 230 000 persons were served with piped water to their dwellings, 40 000 had to rely on public and private fountains and 20 000 depended on water from other sources.

Two of the communities had sewerage systems serving a total of 240 000 persons. Some 50 000 persons had to rely on individual installations such as septic tanks and latrines.

Major Public Health Problems

Environmental sanitation and tuberculosis are the most important public health problems of Macao. The first of these problems is mainly due to the high population density, especially in Macao city where there are 52 000 inhabitants per square kilometre, to the difficulty in maintaining adequate piped water systems and to the old inadequate sewerage systems which are being replaced by new ones. The constant flow of tourists and immigrants also adds to the existing environmental health problems. The high level of mortality and morbidity due to tuberculosis has already been referred to.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Outstanding among the developments of the ten years under consideration has been the immigration of refugees into Macao. It is estimated that between 50 000 and 70 000 persons entered the territory between 1950 and 1964 and constituted about 24 per cent. of the 1964 population. This great influx of refugees has created serious health and sanitation problems. Another development affecting the health situation is the increased tourism, particularly between Hong Kong and Macao. This doubled between 1955 and 1964. Mention has already been made of the promulgation, during the period under review, of regulations reorganizing the health services according to modern principles, and bringing up to date and making uniform the teaching and training of paramedical officers in technical schools of the health and welfare services in all Portuguese overseas provinces.

Governmental Health Expenditure

In 1964, the total general government expenditure amounted to 46 738 088 patacas, of which 3 248 309 patacas (i.e. 7.0 per cent.) were devoted to the pro-

vision of health services. This was equivalent to an expenditure of 11.2 patacas per head on these services as compared with 9.1 patacas per head in 1962. A further sum of 77 218 patacas was spent on capital account on projects included in plans for the improvement and expansion of health services.

MALAYSIA

Malaya

Population and Other Statistics

At the last census, taken in June 1957, the population of Malaya was 6 278 758. Population estimates and some other statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	7 136 804	7 376 031	7 607 000	7 810 205
Number of live births	299 030	297 613	299 632	305 679
Birth rate (per 1000 population)	41.9	40.3	39.4	39.1
Number of deaths	65 997	68 769	68 028	62 907
Death rate (per 1000 population)	9.2	9.3	8.9	8.1
Natural increase (per cent.) .	3.27	3.10	3.05	3.10
Number of infant deaths . . .	17 859	17 586	17 001	14 803
Infant mortality rate (per 1000 live births)	59.7	59.1	56.7	48.0
Number of maternal deaths .	599	686	670	...
Maternal mortality rate (per 1000 live births)	2.0	2.3	2.2	...

Of the 68 028 deaths recorded in 1963 the main causes were: senility without mention of psychosis, ill-defined and unknown causes (32 716), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (2657), accidents, (2109, including 215 in motor-vehicle accidents), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (1623), pneumonia (1594), tuberculosis, all forms (1318), malignant neoplasms (1184), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (1008), vascular lesions affecting the central nervous system (837), deliveries and complications of pregnancy, childbirth and puerperium (670).

The communicable diseases most frequently notified in 1964 were: influenza (2685), dysentery, all forms (2050), diphtheria (1130), typhoid and paratyphoid fevers (846), cholera (403), poliomyelitis (181), typhus (101).

Organization of the Public Health Services

Following the formation of Malaysia in 1963, the organization and administration of the medical

and health services of the States of Malaya was extended to Sarawak, while Sabah retains its autonomy in health matters until 1970. The administration of the Ministry of Health of Malaya has been strengthened through the establishment of divisions for development and planning, education and training, tuberculosis, maternal and child health, communicable diseases and environmental sanitation, and statistics.

Hospital Services

In 1961, Malaya had 257 hospitals and establishments for in-patient care providing 27 932 beds (3.9 per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals	165
Tuberculosis hospitals	7
Maternity hospitals	78
Psychiatric hospitals	2
Leprosaria	3
Preventorium	1
Institution for incurables	1

Out-patient facilities were provided in 1964 by 55 hospital out-patient departments, one polyclinic, 145 health centres, 210 dispensaries, 155 mobile health units, five voluntary medical teams of Catholic welfare services and 74 other establishments. There were five million new out-patients and a total of about 11 million attendances in 1964.

Medical and Allied Personnel and Training Facilities

In 1963, Malaya had 1189 registered physicians, giving a doctor/population ratio of one to 6400. Other registered health personnel included:

Dentists	604
Midwives	1 984
Nurses	2 259
Assistant nurses	1 522

During the period under review, the Ministry of Health, through Colombo Plan arrangements, sent 200 nurses to the United Kingdom for basic nurse training. This is in addition to some 800 nurses who,

by 1965, were being trained at the three local basic nurse training schools. The training of laboratory assistants at the Institute for Medical Research in Kuala Lumpur has been reorganized and expanded. A school has been established at the General Hospital in Kuala Lumpur for the training of radiographers, and a public health institute is under construction. In order to cope with the training of auxiliary health staff for the rural health services a second rural health training school is under construction at Rembau in the state of Negri Sembilan.

Communicable Disease Control and Immunization Services

The yaws campaign was progressing satisfactorily in 1965, the consolidation stage having been reached in the states of Pahang, Trengganu and Kelantan. Surveillance was maintained in these states by the rural health services. On completion of the malaria eradication pilot project in 1964, the country embarked on a malaria pre-eradication programme. The national tuberculosis campaign launched in 1961 made satisfactory progress. Nearly 1000 medical and paramedical personnel were trained for the campaign. Mass X-ray examinations were started in 1963 and by the end of 1964, 600 000 persons had been X-rayed, of whom 30 000 were found to have pulmonary lesions. Some 800 000 persons were tuberculin-tested and about 700 000, including newborn children, were vaccinated in 1961. Following a comprehensive survey of filariasis throughout the country in 1960, six trained medical teams were operating in infected areas. It is planned to establish a central leprosy registry.

The following immunization procedures were carried out in 1960:

Smallpox	691 109
Diphtheria	153 750
BCG	97 208
Typhoid and paratyphoid fevers	85 868
Cholera	84 298
Tetanus	34 026
Diphtheria, tetanus and whooping-cough	6 292
Tetanus and whooping-cough	3 044
Diphtheria and whooping-cough	2 608
Diphtheria and tetanus	1 627

Specialized Units

In 1964, maternal and child welfare services were based on 1139 clinics where altogether 1 508 289 attendances were recorded. A total of 1 292 164 home visits were made to mothers and children. Of all deliveries, 173 928 were institutional. Schoolchildren received medical care at hospital out-patient departments and at dispensaries; separate records of

treatment given to schoolchildren are not maintained. The 287 dental health units treated 468 539 patients. Fifteen independent medical rehabilitation centres received 12 494 new patients, and 50 599 new patients attended 24 hospital rehabilitation departments. There were 1780 new patients at seven psychiatric out-patient clinics. Other specialized units included two clinics for venereal diseases and seven filariasis control teams. Eighteen public health laboratories carried out 527 819 examinations in 1964.

Environmental Sanitation

In 1964, of the total population of Malaya, approximately 2 300 000 had piped water to their dwellings, 1 300 000 had water from public fountains and 4 200 000 had to rely on community or private wells. With regard to sewage collection and disposal, 172 100 had sewage systems only, 292 100 had sewerage treatment facilities and 3 341 250 had individual installations.

Major Health Problems

The major health problems are, in order of priority: tuberculosis, malaria in rural areas, and leprosy.

National Health Planning

In 1961, the Government embarked on its second five-year development plan covering the period 1961-1965. In the field of medical and health services, the plan aimed at a major expansion of the health services to the rural areas, the modernization of hospital facilities, more intensive campaigns against tuberculosis, improvement of the dental, psychiatry and leprosy services and the establishment of a medical store to serve also as a laboratory for the control of drugs. Basic to all these objectives was the development of training programmes for medical and health personnel.

A development officer at the Ministry of Health is responsible to the Director of Medical Services and to the Permanent Secretary of the Ministry of Health for the review, consolidation and scheduling of development programmes received from the chief medical and health officers of each state in Malaya. An education and training officer has been assigned to plan the training programmes and assess the staff requirements for medical and health development.

The Ministry of Health is responsible for overall health planning, in accordance with the policy of the Federal Government. The health plans and activities are co-ordinated with the general and economic plans of the country through the Economic Planning Unit of the Prime Minister's Department.

The Federal Government has evolved a special and very effective technique for reporting and controlling operations related to development in Malaya. A national operations section is now functioning in association with the office of the Deputy Prime Minister; complete records are kept of progress in public development programmes by state and district, showing the activities of every Federal ministry and also pertinent activities of state and local government bodies and statutory authorities. The information of the national operations section is kept up to date by the various ministries and departments, each being responsible for reporting its own activities.

Medical and Public Health Research

Public health research is undertaken at the Institute for Medical Research in Kuala Lumpur, which was established in 1900. Owing to the shortage of trained research officers and the lack of adequate public health laboratory facilities in the country, the Institute is overburdened with routine hospital examinations. Attached to this institute are two teams of research

officers, one from the United States Army Research Unit and the other from the Hooper Foundation of the University of California. These research teams have been working on leptospirosis, simian malaria, mumps vaccine trials and tsutsugamushi disease vectors.

International Collaboration

Malaya is collaborating in the field of health with UNICEF, WHO, the Colombo Plan, the Co-operative for American Relief Everywhere, the Hooper Foundation, the United States Army Research Unit and the British Medical Research Council.

Government Health Expenditure

In 1964, the total expenditure of the Ministry of Health was M\$ 98 022 372. This is equivalent to an expenditure of M \$12.5 per head on health services. An additional M \$18 840 563 were spent on capital account.

Sabah

Population and Other Statistics

At the last census, taken in August 1960, the population of Sabah (former North Borneo) was 454 421. Population estimates and other vital statistics for the years 1962 and 1963 are given in the following table:

	1962	1963
Mean population	478 000	492 000
Birth rate (per 1000 population)	33.2	32.2
Death rate (per 1000 population)	5.9	5.8
Natural increase (per cent.)	2.73	2.64
Infant mortality rate (per 1000 live births)	48.0	47.5

In 1964, the estimated mean population was 507 000.

The main causes of death in 1964 were: gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn; pneumonia; tuberculosis, all forms; chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart; malignant neoplasms.

The communicable diseases most frequently notified in 1963 were: dysentery, all forms (5141), tuberculosis, all forms, new cases (1056), malaria, new cases (894), whooping-cough (138), gonorrhoea (135), infectious hepatitis (102), trachoma (61).

Organization of the Public Health Services

The Ministry of Health of Sabah is headed by a Minister who is responsible to the Cabinet on matters

of health within the state. He is advised on policy matters by the Director of Medical Services, who has overall executive control of the medical services. The latter is assisted by a Deputy Director of Medical Services, the Principal Medical Officer of Health, who is concerned with general policy on public health and environmental sanitation, and the Principal Matron, who is the head of the nursing services.

The state is divided into districts with a medical officer in charge of both the preventive and curative services.

Hospital Services

In 1964, Sabah had 32 hospitals and institutions for in-patient care providing 1649 beds (3.3 per 1000 population) distributed as follows:

Category and number	Number of beds
General hospitals	2 680
Rural hospitals	7 574
Medical centres	20 195
Old people's homes	3 200

Out-patient facilities were provided in 1964 at nine hospital out-patient departments, 32 dispensaries and by five mobile health teams.

Medical and Allied Personnel and Training Facilities

In 1964, Sabah had 51 doctors of whom 29 were in government service and 22 in private practice. The doctor/population ratio was one to 9940. Other health personnel included:

Dentists	3
Pharmacists	2
Fully qualified midwives	138
Assistant midwives	74
Auxiliary midwives	80
Fully qualified nurses	299
Fully qualified nurses with midwifery qualifications	100
Assistant nurses	160
Dental nurses with diploma	8
Veterinarians	2
Sanitary inspectors	23
Physical therapist	1
Laboratory technicians	10
Tuberculosis technicians	21
Malaria technicians	196
Village health inspectors	11

In 1962, the training of nurses at the Queen Elizabeth Hospital Nurses' Training School was recognized by the General Nursing Council of England and Wales. In 1963/64 a rural health nurses' training school for auxiliaries in midwifery and child welfare was started.

Communicable Disease Control and Immunization Services

Malaria eradication was started in 1961. By 1964 approximately two-thirds of the country was in the consolidation phase and the remaining one-third in the late attack phase. The tuberculosis programme was started in 1963 with assistance under the Colombo Plan. Approximately one-third of the population had received BCG immunization and half of the population had been X-rayed by 1964.

The following immunization procedures were carried out in 1964:

Cholera	48 194
Smallpox	40 193
Diphtheria and tetanus	8 400
Diphtheria, whooping-cough and tetanus	6 153
Poliomyelitis	670
Yellow fever	6

Specialized Units

In 1964, maternal and child health services were based on 95 centres, at which 10 694 pregnant women and 15 456 children attended. Domiciliary care was

given to 2307 pregnant women and 22 137 children. Two thousand schoolchildren were under health supervision at five school health units. Five dental health units treated 26 426 patients. Nine public health laboratories carried out 65 566 examinations.

Major Public Health Problems

The major public health problems are malaria, tuberculosis and gastro-enteritis. It is estimated from surveys and morbidity data that the incidence of tuberculosis in the population is 2 per cent. and of malaria 3 per cent.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The increase in the gross national product has enabled the Government to use more public money for hospital buildings. The population increase which was experienced during the decade under review resulted in a greater demand for medical services. These demands are, however, difficult to meet because of the shortage of trained personnel. Improved communications within Sabah have facilitated the extension of medical services to the rural areas.

National Health Planning

A comprehensive national health plan was introduced in 1963. Its main features concerned substantial expansion of services in the rural areas; maintenance of antimalaria and antituberculosis campaigns; reduction of mortality from diseases resulting from deficient environmental sanitation; provision of an adequate number of accessible hospital beds and of professional and technical staff, especially doctors and nurses; and training programmes to meet existing deficiencies.

Government Health Expenditure

In 1964, the total general government expenditure amounted to M \$169 547 000 of which M \$7 669 000 were devoted to health services. This is equivalent to M \$15 per head on these services. An additional sum of M \$1 949 000 was spent on capital account.

NAURU

Population and Other Statistics

At the last census, taken in June 1961, the population of Nauru was 4613. Population and some other vital statistics for the fiscal years 1961/62 to 1964/65 are given in the following table:

	1961/62	1962/63	1963/64	1964/65
Mean population	4 539	4 849	4 801	4 914
Number of live births	156	161	130	150
Birth rate (per 1000 population)	34.4	33.2	27.1	30.5
Number of deaths	28	12	28	11
Number of deaths, 1-4 years	1	4	1
Number of infant deaths . .	8	3	2	2
Number of maternal deaths .	0	0	0	0

The communicable diseases reported in 1965 were leprosy (43) and tuberculosis, all forms, new cases (12).

Hospital Services

In mid-1965 Nauru had three general hospitals providing 282 beds, to which 2091 patients were admitted in 1964/65. The British Phosphate Commissioners maintain two of these hospitals for employees and dependants. There is also a small leprosarium with ten beds. The total bed capacity is thus 292 (52.5 beds per 1000 population).

Out-patient care was available at the general hospitals, which recorded 41 887 attendances in 1963/64.

Medical and Allied Personnel

In mid-1965 Nauru had three doctors, giving a doctor/population ratio of one to 1850. Other health personnel included:

Assistant medical practitioners	5
Dentist	1
Pharmacists	2
Fully qualified nurses	7
Mothercraft nurse	1
Locally trained nurses without certificate	61
Health inspectors	2
Laboratory technicians	2
X-ray technician	1

Communicable Disease Control and Immunization Services

In 1957 a full survey was carried out to establish the incidence of tuberculosis and to recommend control measures. A follow-up survey undertaken

in 1963 found that the morbidity rate for the whole population had dropped from 3.3 per cent. in 1957 to 1.1 per cent. in 1963. The whole population aged 12 years and over is X-rayed annually, together with all new arrivals. BCG vaccination is used in newborn babies and in children. As a result of the 1963 survey it was decided also to institute a programme of chemoprophylaxis among schoolchildren and pre-school children whose reaction had been naturally positive to the Mantoux test or who were considered likely to have received a superinfection after BCG vaccination. Quarterly inspections of the Nauruan population for leprosy are carried out and immigrants are examined on arrival. Patients under surveillance and most patients under treatment are treated as out-patients.

Specialized Units

Three pre-natal centres and eight child health centres were engaged in maternal and child health care. Between July 1963 and June 1964 approximately 150 pregnant women and 363 children under two years attended these centres. All deliveries were attended by a doctor or qualified midwife. The school health unit supervised the total school population. In the same period 2463 examinations were made at the dental service unit. Nauru also had one tuberculosis out-patient clinic, one leprosy prophylactic clinic and two public health laboratories.

Environmental Sanitation

All dwellings have individual water supplies. Water is drained from the roofs of buildings and stored in tanks. It is also drawn from wells in limited supply, or is imported by ship, stored in ten one-million-gallon tanks and distributed as required.

Excretal waste is disposed of by septic tank, cess-pit or deep-pit systems. Sewers draining into the sea are used for some closely settled areas on the western side of the island where prevailing currents make this method practicable.

Government Health Expenditure

In the 1964/65 fiscal year the total general government expenditure on health services amounted to £A 203 600. This is equivalent to an expenditure of £A 36.6 per head on these services as compared with £A 29.4 in 1961/62.

NEW CALEDONIA AND DEPENDENCIES

Population and Other Statistics

At the last census, taken in 1956, the population of New Caledonia was 68 480. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	80 060	82 609	86 519	89 488
Number of live births	2 882	2 849	2 785	2 873
Birth rate (per 1000 population)	36.0	34.5	32.2	32.1
Number of deaths	769	846	876	831
Death rate (per 1000 population) . . .	9.6	10.2	10.1	9.3
Natural increase (per cent.)	2.64	2.43	2.21	2.28
Number of deaths, 1-4 years	68	67	54	83
Number of infant deaths	171	160	151	166
Infant mortality rate (per 1000 live births)	59.3	56.2	54.2	57.8

In 1964, the total number of deaths was 831. Of the deaths which occurred in medical establishments, the following were the main causes: congenital malformations, birth injuries, post-natal asphyxia and atelectasis and other diseases peculiar to early infancy and immaturity (42), heart diseases (34), intestinal obstruction and hernia, gastritis, duodenitis, enteritis and colitis and other diseases of the digestive system (31), malignant neoplasms (30), senility without mention of psychosis, ill-defined and unknown causes (27), accidents (25), vascular lesions affecting the central nervous system (25).

Organization of the Public Health Services

The health services in New Caledonia are under the control of the Director of Public Health and Hygiene who is directly responsible to the Governor of the Territory. New Caledonia is divided into 14 medical districts with populations varying between 2000 and 7000. Each district is in the charge of a medical officer.

Hospital Services

In 1963, in-patient facilities were provided at 44 hospitals and establishments for medical care with a total bed capacity of 1516 (17.5 beds per 1000 population). The following table summarizes the distribution of the 1516 beds:

Category and number	Number of beds
General hospitals	4
Rural hospitals	23
Medical centres	15
Leprosarium	1
Old people's home	1
	615
	597
	89
	191
	24

Out-patient medical services were available in 1964 in six hospital out-patient departments, three private clinics, 14 medical centres, nine dispensaries and 15 infirmaries. In all, 67 133 patients attended these establishments, which recorded 151 933 consultations.

Medical and Allied Personnel

In 1963 there were 48 physicians of whom 31 were in government service. The doctor/population ratio was one to 1800. Other health personnel included:

Dentists	15
Pharmacists	10
Fully qualified midwives	2
Assistant midwife	1
Fully qualified nurses	42
Assistant nurses	26
Auxiliary nurses	122

Communicable Disease Control and Immunization Services

Tuberculosis is the most common endemic disease in the territory. The control measures taken at present include case-finding, free treatment of patients and BCG vaccinations in maternity institutions and schools. It is planned to centralize all tuberculosis activities within the Division of Social Hygiene, and to extend annual or bi-annual radiographic examinations to all schoolchildren, to the population living in tribes and to wage-earners and their families. In addition tuberculin testing and BCG vaccination will be started. Simultaneously the health services will organize an intensive education campaign. A leprosy section has also been established in the Division of Social Hygiene with a view to controlling and co-ordinating all medical activities in the field of leprosy.

The parasitoses most frequently found in New Caledonia are: ascariasis, ancylostomiasis, anguilliasis and oxyuriasis. Amoebiasis is relatively rare. The eradication of these diseases is related to improved environmental and personal hygiene.

The following immunization procedures were carried out in 1963:

Smallpox	6 904
Typhoid and paratyphoid fevers, diphtheria and tetanus	4 332
Tetanus and diphtheria	2 856
Cholera	2 115
BCG	1 612
Poliomyelitis	727
Typhoid and paratyphoid fevers	306
Diphtheria, whooping-cough and tetanus	63

Specialized Units

In 1964 maternal and child welfare services were available at 15 pre-natal and child health centres which recorded 2996 attendances of pregnant women, 5058 of children under one year and 3454 of children between one and five years of age. A total of 15 228 home visits were paid to infants under one year and 6660 to children between one and four years of age. In all, 1728 deliveries were attended by a doctor or qualified midwife. The whole school population of 22 492 was under medical supervision provided at 15 school health centres. Two mobile dental health teams gave 2837 dental treatments to 2151 patients. The psychiatric out-patient clinic received 293 patients. There were three tuberculosis clinics, one leprosy clinic, and two public health laboratories which carried out 91 746 examinations during 1964.

Major Public Health Problems

The most important health problems in New Caledonia are those related to the prevalence of tuberculosis, leprosy and parasitic infestations. Health education of the public is greatly impeded by the shortage of specialized personnel. The health authorities are concerned about the risk of importing epidemic diseases such as malaria, smallpox and dengue from neighbouring territories and islands. The incidence of dental caries among the young people is also causing concern.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

Following a law of 1956, a government council and a territorial assembly were established. In 1964, the department of health and public hygiene, headed by a director, was placed under the direct authority of the Governor of the Territory. During the decade under review, several legislative enactments were

passed providing social benefits especially to wage-earners. Occupational health inspection was organized in 1958. The compensation fund for family allowances and occupational accidents was created in 1959.

National Health Planning

New Caledonia being part of the French Republic, all its development programmes are included in the French National Plan. The five-year plan which covers the period 1966-1970 particularly aims at increasing the health service personnel and the medical care facilities, at developing health education and at providing adequate hygiene conditions.

Medical and Public Health Research

Research activities undertaken during the period under review included investigations into eosinophilic meningitis, ichthyosis, the preventive action of BCG on leprosy and a nutrition survey.

International Collaboration

New Caledonia collaborates in health matters with the South Pacific Commission, the University of Hawaii (United States of America), FAO and WHO.

Government Health Expenditure

In 1964, the territory's budget contained provisions for a total expenditure of 1842 million CFP francs on current account, of which 228 million (i.e. 12.4 per cent.) were allotted to the health services. This is equivalent to a *per capita* expenditure of 2560 CFP francs on these services as compared with 2150 francs in 1962. A further sum of 6.5 million CFP francs was allotted for the improvement and expansion of health facilities.

NEW HEBRIDES

Population and Other Statistics

The population of the New Hebrides was estimated to be 63 000 in 1961, 65 000 in 1962, 64 000 in 1963 and 66 000 in 1964.

The communicable diseases most frequently notified in 1964 were: malaria, new cases (1932), influenza (859), measles (757), tuberculosis, all forms, new cases (77), dysentery, all forms (25), leprosy (24).

Organization of the Public Health Services

Medical and health work in the New Hebrides is carried out by the French and British national administrations separately, with considerable support from missionary organizations. The French chief medical officer is in general charge of the health services. He is assisted by the British chief medical officer as deputy.

Hospital Services

In 1963, the New Hebrides had three general hospitals with 255 beds, five rural hospitals with 210 beds, seven medical centres with 194 beds, one psychiatric hospital with ten beds and one leprosarium with 66 beds. These 17 hospitals provided 735 beds—equivalent to 11.5 beds per 1000 population—and 8244 patients were admitted in 1963.

In the same year, out-patient facilities were available at two polyclinics, three health centres and 16 medical aid posts, which together recorded 74 901 attendances during 1963.

Medical and Allied Personnel

In 1963, 18 doctors were working in the New Hebrides. The doctor/population ratio was one to 3560. Other health personnel included:

Medical assistants	3
Dentists	3
Fully qualified midwife	1
Fully qualified nurses	36
Fully qualified nurses with midwifery qualifications	18
Assistant nurses	2
Auxiliary nurses	10
Laboratory technicians	2
X-ray technician	1

Communicable Disease Control and Immunization Services

The yaws eradication campaign which was carried out with the assistance of WHO between 1958 and

1961 reduced the incidence of the disease from 15.6 to 0.5 per cent. A tuberculosis mass campaign was initiated in 1964. Malaria is still the most widespread disease in the islands. In 1964 it accounted for 25 per cent. of the patient case-load and 10.5 per cent. of the mortality in French medical establishments. Intestinal parasitoses, particularly *ancylostomiasis*, also show a very high morbidity rate.

The following immunizations were carried out in 1963:

Smallpox	5 076
Tetanus	1 715
Diphtheria, whooping-cough and tetanus	720
Cholera	246
Diphtheria	114
Pollomyelitis	87
Typhoid and paratyphoid fevers	18
Typhoid and paratyphoid fevers, diphtheria and tetanus	4

Specialized Units

In 1964, 3337 schoolchildren were under medical supervision. One dental health unit treated 873 patients. Two public health laboratories carried out nearly 7000 examinations.

Major Public Health Problems

The most important health problems in the New Hebrides are those arising from the incidence of malaria and intestinal parasitoses.

NEW ZEALAND

Population and Other Statistics

The last census of New Zealand was taken on 18 April 1961 when the population was 2 414 984, of whom 167 086 or approximately 7 per cent. were Maoris.

Population estimates for 1961-1964 and some other vital statistics are given in the following table. The data relate to the whole population. Reference is made to certain differences in Maori mortality in a later section of the review.

	1961	1962	1963	1964
Mean population	2 420 292	2 485 466	2 538 033	2 594 420
Number of live births	65 476	65 127	64 673	62 459
Birth rate (per 1000 population)	27.1	26.2	25.5	24.1
Number of deaths	21 782	22 081	22 416	22 861
Death rate (per 1000 population)	9.0	8.9	8.8	8.8
Natural Increase (per cent.) .	1.81	1.73	1.67	1.53

	1961	1962	1963	1964
Number of deaths, 1-4 years	294	275	274	294
Death rate, 1-4 years (per 1000 population at risk)	1.2	1.1	1.1	1.1
Number of infant deaths	1 490	1 331	1 269	1 193
Infant mortality rate (per 1000 live births)	22.8	20.4	19.6	19.1
Number of maternal deaths	25	19	26	20
Maternal mortality rate (per 1000 live births)	0.4	0.3	0.4	0.3

The provisional total of deaths in 1964 was 22 861 as compared with 22 416 in 1963. The most important causes of death in 1964 were: arteriosclerotic and degenerative heart disease and other diseases of the heart (7506), malignant neoplasms (3674), vascular lesions affecting the central nervous system (2757), pneumonia (1366), accidents (1218, including 445 in motor-vehicle accidents), bronchitis (731), hypertension (438) births injuries, post-natal asphyxia and atelectasis (325), other diseases peculiar to infancy and immaturity

(313), diabetes mellitus (313), congenital malformations (269). There were 96 deaths from tuberculosis, all forms.

The communicable diseases most frequently notified during 1964 were infectious hepatitis (2217), tuberculosis, all forms, new cases, (1045), bacillary dysentery (1099), typhoid fever (49) and meningococcal infections (43).

Organization of the Public Health Services

In New Zealand the direction, planning and supervision of the health services is the responsibility of the Minister of Health operating through the Department of Health which is administered by a medical director-general of health. The Minister and the Department are advised by several advisory committees, and also utilize for this purpose the services of other government departments, the universities, local government bodies, and professional associations.

The Department of Health consists of two bureaux for:

(a) Public health. This division provides professional and technical advice to local government authorities. The Department of Health itself provides the services in various specialized fields such as radiation protection; communicable disease control; food, poisons and drug control; environmental and public health engineering services; maternity and child health; public health nursing services.

(b) Hospital and medical services. The Department of Health provides the funds for the maintenance of the public hospitals, which, however, are managed by elected hospital boards. Psychiatric hospitals, with one exception, are maintained and managed by the State. All public hospital services are free. The other traditional medical care services, e.g. general practice, maternity, laboratory and pharmaceutical services, are also free or heavily subsidized by the State.

For the provision of local health services, the country is divided into 18 health districts. Each district is under the local control of a medical officer of health.

Hospital Services

During the fiscal year 1963/64 the total number of hospitals and other health institutions providing in-patient accommodation was 377 with 28 481 beds, which is equivalent to a bed/population ration of 11 beds per 1000. Of this total of 28 481 beds, 25 368 were provided in the 228 state-maintained institutions.

Amongst the 228 State institutions there were:

Category and number	Number of beds
General hospitals	88
Maternity hospitals	95
Psychiatric hospitals	12
Tuberculosis institutions	2
Rehabilitation clinic	1
Old people's homes	22
Convalescent homes	5
Cripples' homes	2
Children's home	1
	32

The 282 443 patients admitted to the State institutions (other than the psychiatric hospitals) received 4 676 785 days of in-patient care in 1963. There were also 2 398 250 attendances at the out-patient departments of the hospitals.

The great majority of the 3113 beds in private institutions were in 117 small nursing homes and two children's hospitals supported from voluntary funds.

Medical and Allied Personnel and Training Facilities

In 1963 there were 3713 physicians practising in New Zealand, or one for every 680 inhabitants. In 1964 there were 825 dentists, equivalent to one per 3100 population.

Other members of the health professions in the government service or otherwise employed, included:

Pharmacists	1 889
Veterinarians	416
Sanitary engineers	9
Sanitary inspectors or sanitarians	258
Nursing personnel of all grades	4 875*
Midwifery personnel	371*
Physical therapists	447
Occupational therapists	115*
Laboratory technicians	600
X-ray technicians	213
Health education officers	25

* In government service.

Doctors are trained in the universities, and in particular at the University of Otago and its associated teaching hospitals. Nurses and technical auxiliaries such as laboratory technicians and radiographers are trained in specially designated hospitals, as are physical therapists. The Department of Health also maintains a school for post-graduate nursing education, and provides facilities for the training of sanitary inspectors and health educators.

Communicable Disease Control and Immunization Services

With the exception of infectious hepatitis and tuberculosis, the control of the communicable diseases in New Zealand raises few problems.

Nevertheless, it is the policy of the Department of Health to encourage and provide facilities for extensive immunization of infants against diphtheria, whooping-cough and tetanus, using a triple antigen for the purpose. Subsequent to the successful national immunization campaign against poliomyelitis in which the oral Sabin vaccine was employed, this form of protection is available for all infants and new settlers in the country. BCG vaccination is also offered to individuals specially exposed to tuberculosis. There is an active campaign to encourage anti-tetanus immunization in adults.

Chronic and Degenerative Diseases

The care of patients suffering from chronic and degenerative diseases is the function of the hospital boards and the general practitioners. Under the auspices of the Department of Health, screening operations for the discovery of pre-symptomatic disease are being organized, and the medical unit of one hospital has investigated the incidence of diabetes, hypertension, gout, anaemia, etc., in local communities. Interest in a number of the chronic diseases and disabilities, notably cancer, epilepsy, diabetes and blindness, is shown by certain societies and associations which also carry out health education in their respective fields.

Specialized Units

The object of all medical care services in New Zealand is to provide facilities, and to encourage the use of the facilities provided. Thus pre-natal care is readily available from general practitioners, obstetricians and hospital clinics. As regards deliveries in 1963, 99.3 per cent. of European and 94.8 per cent. of Maori pregnant women were confined in hospital. Health services for the infant and the pre-school child are provided by the Plunket Society or by public health nurses.

Medical officers and public health nurses carry out the examination of all schoolchildren referred to them with physical or emotional defects during their regular visits to state schools. These services are also available in private schools. Hearing and sight testing at set age-levels are now carried out by technicians.

A free dental treatment service is provided by 1045 school dental nurses to all pre-school and primary school children, who altogether number 456 000. Secondary school children are treated by private dental practitioners, the cost being met by the State.

Extensive facilities are available for psychiatric out-patient consultations at 41 clinics in general and

psychiatric hospitals. During 1963/64, 2328 new patients attended.

Health care in industry is only provided at 74 industrial establishments, and meets the needs of no more than 25 per cent. of the manpower employed in industry.

A network of 19 public health laboratories covers the country. In 1963/64 some 1 600 000 examinations were carried out.

Environmental Sanitation

In 1964 nearly 1 320 000 or 51 per cent. of New Zealand's population of approximately 2 600 000 lived in 39 communities with populations of 10 000 and upwards. In all, 1 307 000 inhabitants of these communities had piped water supplies to the dwellings, and only 9500 had to depend on wells or other sources. The same 39 communities all had sewerage systems, and 31 had sewage treatment facilities also. Out of this total population of 1 320 000, 162 000 had to rely on individual installations such as septic tanks and latrines.

At the other end of the scale there were 3360 communities of 2000 or less with a total population of 780 000 (30 per cent. of the New Zealand population). Only 330 of these communities had piped water supplies to dwellings, serving 158 000 people. In the same group of communities only 188 had some form of sewerage system. Of its total population of 780 000, 696 000 were served by septic tanks and latrines.

Major Public Health Problems

With its complex of well-organized and comprehensive health services New Zealand has very few residual problems in the public health field. It is important, however, to ensure that the existing services expand with the increasing population, and to detect any potentially dangerous health hazard before it assumes major proportions. It is with this objective in mind that narcotic control, adverse drug reactions and environmental pollution of various types are carefully and continuously studied.

Reference must also be made to the difference which exists between the maternal and infant mortality rates for Maoris, and those for the population of European origin. The Maori rates have improved in recent years, but are still relatively high. The rates recorded for the two racial groups in 1964 are significant. The Maori infant mortality rate was 30 per 1000 live births, as contrasted with 17.5 for the European group, while the maternal mortality rates were respectively 0.75 and 0.26 per 1000 live births.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

During the decade efforts were directed at strengthening old services, creating new ones, and improving administrative and economic efficiency. This has been done by concentrating a number of small specialized sections within the two administrative divisions of the Department of Health. Amongst the major developments have been the following:

Public Health Services

The establishment of a number of specialized institutions, notably the National Health Institute, the increase in health education activities with the employment of full-time staff, the appointment of a Public Health Engineer to organize water and sewerage undertakings, the granting of subsidies to smaller local authorities for environmental improvement, progressive fluoridation of water supplies, reorganization of the school health examination system, registration of all new drugs, and the appointment of a committee on adverse reactions to drugs.

Medical Care Services

The financing of public hospitals from State funds only, increased emphasis on domiciliary care of the sick, sometimes through hospital out-patient services, the integration of mental health and general hospital services through out-patient psychiatric clinics, extension of geriatric care, and the provision of generous subsidies for the building of old people's homes.

National Health Planning

A National Board of Health acts as a planning and research agency in matters concerning the administration of the national health services. Its membership comprises representatives of the Department of Health, local government, the universities and the medical profession. It operates through a number of

expert committees, and is generally responsible for advising the Minister of Health on the planning of extensions to the existing services and on the creation of new ones. The Department of Health has also a research and planning unit which is mainly concerned with the building, conversion and repair of hospitals. The unit prepares guides on the design of hospitals, and its services are available to the hospital boards.

Medical and Public Health Research

Although a considerable amount of medical research is carried out in the universities and the hospitals of the national health service the primary responsibility for encouraging and supporting such research is placed by Act of Parliament on an independent body, the New Zealand Medical Research Council. A small amount of research in the public health field is also carried out by the medical staff of the Department of Health.

International Collaboration

New Zealand was fifth in chronological order of acceptance of the Constitution of WHO, and has been a Member State since December 1946. The Government also subscribes to a number of international health agreements. It supports international collaboration in health work, and many of its aid programmes for developing countries are in the health field.

Government Health Expenditure

The provision of health services is a major item in allocation of government funds. In the fiscal year 1963/64, 31 per cent. of the total general government consumption expenditure was devoted to health. This is equivalent to an expenditure of £NZ 26 per head and represents an increase of some 24 per cent. over four years. An additional sum of £NZ 7 million was spent on capital projects in the health field.

NIUE

Population and Other Statistics

At the last census, held in 1961, the population of Niue was 4864. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	4 864	5 000*	5 000*	5 044
Number of live births	224	219	220	213
Birth rate (per 1000 population) . . .	46.2	44.4	43.1	38.1
Number of deaths	42	28	32	44

	1961	1962	1963	1964
Death rate (per 1000 population) . . .	8.7	5.7	6.3	8.6
Natural increase (per cent.)	3.75	3.87	3.68	2.95
Number of deaths, 1-4 years	2	3	3	2
Death rate, 1-4 years (per 1000 population at risk)	0.4	0.6	0.6	0.4
Number of Infant deaths	11	5	4	10
Infant mortality rate (per 1000 live births)	44.6	22.8	18.0	46.9
Maternal mortality rate (per 1000 live births)	4.5	...

* Approximate estimates.

In 1964, the total number of deaths was 44. The main causes of death were: senility without mention of psychosis, ill-defined and unknown causes (14), pneumonia (7), congenital malformations and diseases peculiar to early infancy and immaturity (6), malignant neoplasms (4), arteriosclerotic and degenerative heart diseases and other diseases of the heart (3).

In the same year the communicable diseases most frequently notified were influenza (2662), whooping-cough (360), and meningococcal infections (6).

Organization of the Public Health Services

All health services, curative and preventive, are provided by the Health Department of the Government of Niue. This department is under the administration of a chief medical officer who is responsible to the Resident Commissioner. Apart from prosthesis, health services are free of charge to all.

Hospital Services

Niue has one general hospital with 34 beds to which 381 patients were admitted in 1963. There were 6.8 beds per 1000 population. Out-patient care was given in 1964 at the hospital out-patient department and at two medical aid posts. In all, 20 196 attendances were recorded at these centres.

Medical and Allied Personnel and Training Facilities

In 1963, there were five assistant medical officers and one fully qualified physician in Niue. The medical practitioner/population ratio was thus one to 840. There was also the following medical and allied personnel:

Dental assistants	2
Pharmaceutical assistant	1
Fully qualified midwives	3
Fully qualified nurse	1
Assistant nurses	6
Nurses in training	19
Sanitary Inspector	1
Laboratory technician	1
X-ray technician	1

Since 1963, a two-year course for training of nurses has been introduced. Graduates of this course are selected to undertake further training for six months or a year in hospitals in New Zealand.

Communicable Disease Control and Immunization Services

Tuberculosis is the only serious prevalent communicable disease. In 1963 mass miniature radiography of the the population was carried out and over 40 cases were discovered and treated. There are sporadic cases of gonorrhoea. Female patients are hospital-

ized, males treated as out-patients and all contacts examined. This provides an effective control. Influenza-type diseases are endemic, but are not amenable to direct control.

The following immunization procedures were carried out in 1963: 3882 against poliomyelitis (Sabin vaccine), 2489 against tetanus and 210 against diphtheria, whooping-cough and tetanus.

Specialized Units

Maternal and child welfare services were based in 1964 on three pre-natal service units and one child health unit. A doctor or qualified midwife attended 119 deliveries representing 54 per cent. of all births in 1963, and 151 or 70 per cent. in 1964. The total school population is under medical supervision. Niue has two dental service units. A scheme for distribution of sodium fluoride tablets free of charge to young children and expectant mothers with a view to reducing dental caries has been introduced recently. Most drinking-water is rainwater collected in domestic tanks and therefore devoid of any fluoride or other minerals. It is planned to provide cheap tooth-brushes and toothpaste to schoolchildren with a view to training them in dental hygiene.

Environmental Sanitation

The population of Niue relies mainly on roof-catchments for rainwater, there being no streams or springs. All inhabitants of the island are provided with individual sewage collection and disposal installations.

Major Public Health Problems

The major health problems of the island concern environmental health. Housing is now adequate following an island-wide house building programme, although many kitchens in the villages are still unsatisfactory. Water supplies also constitute a health problem. A recent programme of boring to tap the freshwater table and thus provide each village with a supply of water during dry weather has been successful. The pit latrine is the commonest type of latrine used in the island, although it is not fly-proof because of the porous nature of coral. The high prevalence of house-flies would be reduced with the solution of the latrine problem.

Government Health Expenditure

In the fiscal year 1963/64 the total general government consumption expenditure was £NZ 382 436, of which £NZ 55 424 (i.e. 14.5 per cent.) were allocated to health and environmental sanitation services.

PACIFIC ISLANDS TRUST TERRITORY

Population and Other Statistics

Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	77 913	80 980	84 777	88 215
Number of live births	2 877	2 694	2 756	3 024
Birth rate (per 1000 population) . . .	36.9	33.3	32.5	34.3
Number of deaths	412	386	425	529
Death rate (per 1000 population) . . .	5.3	4.8	5.0	6.0
Natural increase (per cent.)	3.16	2.85	2.75	2.83
Number of deaths, 1-4 years	35	33	35	...
Death rate, 1-4 years (per 1000 population at risk)	3.2	3.0	3.0	...
Number of infant deaths	93	89	105	99
Infant mortality rate (per 1000 live births)	32.3	33.0	38.1	32.7
Number of maternal deaths	8	5	3	...
Maternal mortality rate (per 1000 live births)	2.8	1.9	1.1	...

Registration of births, deaths and maternal deaths is incomplete and the correct rates are estimated to be higher than those given above.

In 1963 the total number of recorded deaths was 425. Among the most important causes were: pneumonia (65), congenital malformation, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (51), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (36), malignant neoplasms (31), senility without mention of psychosis, ill-defined and unknown causes (28), tuberculosis, all forms (26), whooping-cough (20), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (17).

The most frequently reported communicable diseases during the period July 1962-June 1963 were: influenza (18 133), whooping-cough (1611), dysentery, all forms (878), measles (604), gonorrhoea (227), poliomyelitis (212), tuberculosis, all forms, new cases (147), infectious hepatitis (37).

Organization of the Public Health Services

The Department of Public Health, together with the Department of Education and the Office of Community Development, belongs to a new organizational framework known as Community Services. This is headed by the Assistant Commissioner for Community Services. He maintains close and continuing contact with the Director of Public Health in order to deal with administrative problems, especially those also affecting other departments. The

Director of Public Health has administrative control of the Department within the general organization of the Trust Territory Government. He reports to the High Commissioner through the Assistant Commissioner for Community Services.

At the local level there are six health districts. The medical officer in charge is the direct representative of the Director of Public Health in his district. He is assisted by United States physicians who are employed to help improve health conditions in the territory.

A survey report on health conditions and resources in the Trust Territory, known as the Aufranc Report, was prepared at the request of the Interior Department for the Task Force for Accelerated Development of the Trust Territory of the Pacific Islands. This survey was followed by a special "organization and management" report which recommended a reorganization plan for overall administration by the Trust Territory Government.

Hospital Services

In 1963, in-patient medical care facilities in the Trust Territory of the Pacific Islands were available at nine general government hospitals with 468 beds, to which 8657 patients were admitted. There were 121 dispensaries with between one and four beds.

Out-patient care was given in 1963 at nine hospital out-patient departments and at the 121 dispensaries.

Medical and Allied Personnel and Training Facilities

At the end of June 1963, the Trust Territory had one doctor and 32 graduates of the Guam navy school for medical assistants and the Fiji School of Medicine. There was thus one medical practitioner to 2600 inhabitants. Other health personnel included:

Dental surgeon	1
Dentistry graduates (Fiji School of Medicine)	21
Dental nurses, hygienists and technical assistants	11
Pharmaceutical assistant	1
Traditional birth attendants	80
Fully qualified nurses	71
Nursing aides in hospitals	106
Health aides in dispensaries	109
Sanitary Inspectors	16
Laboratory and pharmacy workers	25
X-ray technicians	8

The last group of medical officers from the Trust Territory were to graduate from the Fiji School of Medicine in 1965. Thereafter it was anticipated that all medical training would lead to full medical

degrees and would be completed in United States medical schools or elsewhere. A few laboratory and X-ray technicians are at present taking courses at the Fiji School of Medicine. It is proposed that in future technicians will go to the United States for more advanced training. The East-West Center at the University of Hawaii is providing post-graduate refresher courses for health personnel of the Pacific Islands. It is understood that the Georgetown Medical School in Washington, D.C. may accept medical officers who are graduates of the Fiji School of Medicine for a five-year training course to allow them to obtain a degree of doctor of medicine. This is still under consideration. The Trust Territory School of Nursing, Saipan, Marianas Islands, continues to offer training for nursing.

Communicable Disease Control and Immunization Services

Influenza and upper respiratory infections are endemic in the Territory. Tuberculosis is still a major health problem. Inadequately trained personnel, insufficient manpower, difficulties of communication, transportation problems, lack of vital tools needed for use in surveys and other factors have considerably delayed progress in the control programme. BCG vaccination is part of the routine vaccination programme, but only in some districts. Leprosy is another prominent health problem. No recent survey has been carried out to determine the extent or severity of the disease. It is known, however, that on the Island of Pingelap in the Ponape district, there is probably the highest prevalence of leprosy in the world, as approximately 10 per cent. of the population has leprosy. The incidence of venereal diseases, in particular of gonococcal infections, has slightly increased in recent years due to increased mobility of the population and increased immigration. Parasitic intestinal infestations including amoebiasis are very common in the territory, as a result of deficient environmental sanitation. Influenza, measles, whooping-cough and mumps occur in epidemic form. In January 1963 an outbreak of poliomyelitis (Type 1) occurred in the Marshall Islands. Over 200 cases and 11 deaths were reported. Intensive efforts were made to control the spread of the disease to other areas by means of strict quarantine and mass oral poliovirus vaccination with Sabin vaccine.

Following this epidemic, a mass immunization programme was instituted throughout the Territory against the following diseases: smallpox, whooping-cough, tetanus, diphtheria, typhoid fever, tuberculosis and poliomyelitis. Cholera, typhus, measles and

influenza immunizations are recommended only according to district needs and are not part of the routine programme activities.

The following immunization procedures were carried out during the year ending on 30 June 1963:

Poliomyelitis	54 543
Typhoid and paratyphoid fevers	15 232
Cholera	4 055
Smallpox	1 678
Diphtheria, whooping-cough and tetanus	1 288
BCG	696

Specialized Units

Pre-natal services were given in 1963 to 2506 pregnant women in out-patient departments of six hospitals and two sub-hospitals. There are no organized well-baby clinics where mothers are given instructions in the care of children by qualified health nurses; 1458 children were given routine health supervision at out-patient departments during the year ending 30 June 1964; 1301 deliveries or 47.2 per cent. of all births were attended by a doctor or midwife. There is no organized school health programme but medical care can be given at hospitals near to schools. In 1963, ten dental health units gave treatment to 10 537 patients. A poliomyelitis rehabilitation centre exists at Majuro on the Marshall Islands.

Environmental Sanitation

In 1964, of the total population of the Trust Territory 14 400 were served with piped water to their dwellings. Some 2900 inhabitants were provided with sewerage systems.

Major Public Health Problems

Common upper respiratory infections with complications, intestinal parasitosis, diarrhoea and dysentery are the leading communicable diseases in the Territory. In terms of morbidity, tuberculosis cases are the greatest users of hospital care services. Leprosy is another important health problem. The high incidence of these diseases is mainly due to the poor environmental conditions in the homes of Micronesians. Most houses are overcrowded and poorly built. Safe public water supplies are only available to 20 per cent. of the population within the central areas; they are non-existent in the outer islands. Sewerage facilities are available to very few inhabitants. It is proposed to obtain advice on the relative priorities of these problems so that corrective measures can be logically and systematically applied.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The most important development in the health field during the decade was the replacement of expatriate doctors by indigenous practitioners trained in either Guam or Fiji. In 1962 the Higher Commissioner decided that medical training for Micronesians should be upgraded. In 1963, as a result of personnel shortages, United States physicians were again recruited to work in the Territory.

Medical and Public Health Research

The Trust Territory has developed neither organizations nor facilities for research. Several external agencies have undertaken research programmes in the Territory including studies on the high incidence of

amyotrophic lateral sclerosis and parkinsonism in certain populations, measles and influenza vaccines, eosinophilic meningitis and nutrition.

International Collaboration

The Trust Territory receives assistance from the United States Public Health Service, the South Pacific Commission and the World Health Organization.

Government Health Expenditure

In the fiscal year 1963/64 the total government expenditure on health services was US \$1 503 692, which is equivalent to an expenditure of US \$17 per head as compared with US \$10 per head in 1961/62.

PAPUA AND NEW GUINEA

Population and Other Statistics

Population estimates for the period 1961-1965 are given in the following table:

1961	1 972 361
1962	2 024 727
1963	2 059 525
1964	2 100 816
1965	2 149 377

The main causes of death in government hospitals in 1965 were: pneumonia (476), congenital malformations, birth injuries, post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (270), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (166), tuberculosis, all forms (161), malignant neoplasms (135) dysentery, all forms (134), non-meningococcal meningitis (118), malaria (108), accidents (91).

In 1964, the communicable diseases most frequently notified were: influenza (12 698), measles (1122), bacillary dysentery (928), whooping-cough (631), meningococcal infections (421), diphtheria (20), typhoid fever (15).

Hospital Services

In 1965, Papua and New Guinea had 208 general hospitals, of which 91 were run by the Government and 117 by missions, 16 leprosaria and tuberculosis hospitals, ten run by the Government and six by

missions, one government mental hospital, 1699 aid posts, and eight rural health centres run by local government councils with central Government assistance.

During the period from March 1964 to March 1965, 98 965 in-patients received treatment in government hospitals and 87 605 in mission hospitals. All hospitals and medical centres gave out-patient care. More remote areas were served by 3136 government medical patrols.

Medical and Allied Personnel

In 1965, 144 physicians were working in Papua and New Guinea. The doctor/population ratio was one to 14 900. There were also 19 assistant medical officers who graduated at the Fiji School of Medicine, Suva, or at the Papuan Medical College in Port Moresby. Other health personnel included:

Medical assistants	603
Medical assistant trainees	40
Dentists and assistant dental officers	18
Dental assistants	22
Pharmacists	26
Fully qualified nurses	636
Assistant nurses	457
Hospital orderlies	1 437
Health inspectors	15
Infant welfare assistants	398
Physical therapists	6
Laboratory assistants	20
X-ray technicians	5
Malaria control assistants	159
Nutrition biochemist	1
Entomologists and parasitologists	3

Specialized Units

During the fiscal year 1964/65 maternal and child welfare services were based on 595 maternal and child welfare centres run by the Government and 171 run by missions, where 33 981 children under one year and 100 611 children between one and five years of age received attention and 7351 pregnant women received pre-natal care. Government school health units supervised the health of 30 per cent. of the total school population. Twenty-six dental health units treated 82 654 patients, including 59 738 schoolchildren.

National Health Planning

Plans for the development of health services are being reassessed in the light of recommendations made by a mission of the International Bank for Recon-

struction and Development. Generally speaking, future developments will place emphasis on the development of the preventive and field services such as malaria eradication, infant and child health, leprosy and tuberculosis control, and on the training of medical staff. As regards curative services, there are no immediate plans for any major development of the hospital system. Effort in this field will be concentrated on improving the present hospitals and creating a network of rural health centres.

Government Health Expenditure

In the fiscal year 1964/65 the total general government current expenditure amounted to £A 65 million, of which £A 8 million were devoted to the provision of health services. A further sum £A 1 905 200 was spent on capital account for the expansion and improvement of health facilities.

PHILIPPINES

Population and Other Statistics

At the last census, taken in February 1960, the population of the Philippines was 27 087 685. Population estimates and other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	28 313 000	29 257 000	30 241 000	31 270 000
Number of live births	782 857	832 204	851 459	880 871
Birth rate (per 1000 population)	27.7	28.4	28.2	28.2
Number of deaths	213 587	213 439	215 743	222 097
Death rate (per 1000 population)	7.5	7.3	7.1	7.1
Natural increase (per cent.)	2.02	2.11	2.11	2.11
Number of deaths, 1-4 years	39 030	37 512	41 215	39 455
Death rate, 1-4 years (per 1000 population at risk)	9.4	8.3	8.8	8.4
Number of infant deaths	56 663	56 365	56 700	56 614
Infant mortality rate (per 1000 live births)	72.4	67.7	66.6	64.3
Number of maternal deaths	2 023	1 944	1 783	1 795
Maternal mortality rate (per 1000 live births)	2.6	2.3	2.1	2.0

Of the 222 097 deaths recorded in 1964 the main causes were the following: senility without mention of psychosis, ill-defined and unknown causes (29 939), pneumonia (27 688), tuberculosis, all forms (24 687), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (15 634), malignant neoplasms (6902), hypertension (5241), infections of the newborn (4743), nephritis and nephrosis (3840), accidents (3776, including 807 in motor-vehicle accidents), arteriosclerotic and degenerative heart

disease (3520), birth injuries, post-natal asphyxia and atelectasis (3153), vascular lesions affecting the central nervous system (2484).

In 1964, the communicable diseases most frequently notified were: influenza (187 449), tuberculosis, all forms, new cases (122 817), malaria, new cases (40 854), whooping-cough (24 722), dysentery, all forms (17 465), cholera El Tor (16 464), measles (11 394), gonorrhoea (3196), bilharziasis (3135), yaws, new cases (2797), infectious hepatitis (2406), diphtheria (1482), meningococcal infections (789), leprosy (453), poliomyelitis (412), rabies (383).

Hospital Services

In 1961, the latest year for which information is available, the Philippines had 361 general hospitals with 16 058 beds; 174 of these were government hospitals. In addition there were the following hospitals and institutions:

Category and number	Number of beds
Tuberculosis and chest hospital	1 274
Infectious disease hospital	900
Maternity hospital	986
Paediatric hospitals	508
Psychiatric hospital	5 000
Eye, ear and throat clinics	55
Orthopaedic hospitals	460
Government leprosaria	2 405

These 410 establishments together provided 27 646 beds (0.98 beds per 1000 population). Out-patient

facilities were available in 1963 at 411 hospital out-patient departments and 664 health centres.

Medical and Allied Personnel

At the end of 1963, the Philippines had 18 266 doctors of whom 668 were in full-time government service. The doctor/population ratio was one to 1680. There were also the following medical and allied personnel:

Dentists	10 162
Pharmacists	16 017
Fully qualified midwives	11 581
Fully qualified nurses	20 953
Veterinarians	497
Sanitary inspectors	1 442*
Physical therapists	18*
Laboratory technicians	522*
X-ray technicians	135*

* In full-time government service.

Environmental Sanitation

Approximately 13 975 000 (49 per cent.) of the estimated population in 1962 had safe water supplies. In 1963, out of a total population of 30 241 500, 136 000 were served by sewerage systems with sewage treatment and 650 000 by sewerage systems without sewage treatment.

Government Health Expenditure

In the fiscal year 1963/64, the total general government current expenditure was 1951 million pesos, of which 110 million pesos (i.e. 5.6 per cent.) were devoted to the provision of health services. This is equivalent to an expenditure of 3.5 pesos per head, as compared with 2.5 pesos in 1961/62 and 2.0 pesos in 1960/61. A further sum of 2.65 million pesos was spent on capital account for the improvement and expansion of health facilities.

PORtUGUESE TIMOR

Population and Other Statistics

At the last census, taken in December 1960, the population of Portuguese Timor was 517 079. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	520 814	528 284	535 754	543 224
Number of live births * . . .	21 000	21 400	21 700	22 100
Birth rate (per 1000 population)	40.3	40.5	40.5	40.7
Number of deaths *	12 100	12 300	12 500	12 700
Death rate (per 1000 population)	23.2	23.3	23.3	23.4
Natural increase (per cent.)	1.71	1.72	1.72	1.73

* Estimated figures.

In 1963 the communicable diseases most frequently notified were: malaria, all cases (25 959), influenza (1687), tuberculosis, all forms, all cases (792), whooping-cough (575), gonorrhoea (512), measles (99), dysentery, all forms (45).

Organization of the Public Health Services

The provincial department of health and welfare services, which has a medical inspector as its head, comprises an administrative division, a technical division and a welfare division. The technical division includes the following sections: medical care and hospitals, public health including environmental hygiene, pharmaceutical services, training and communicable diseases control.

Hospital Services

In 1963, Portuguese Timor had one general hospital with 112 beds, four rural hospitals with 94 beds and two maternity hospitals with 37 beds. These seven establishments provided altogether 243 beds—equivalent to approximately 0.5 beds per 1000 population. During the year, 5864 patients were admitted and received 103 495 days of in-patient care.

Out-patient facilities were provided at ten hospital out-patient departments, one health centre, 47 medical aid posts and one mobile health unit.

Medical and Allied Personnel and Training Facilities

In 1964, 20 doctors were working in Portuguese Timor. There was thus one doctor per 27 160 inhabitants. There were also 97 fully qualified nurses and five auxiliary nurses. The general hospital in Dili offers training facilities for nurses and auxiliaries.

Communicable Disease Control and Immunization Services

A mobile team for the investigation and control of endemic diseases has been created. In addition to the work of the services for communicable disease control, 35 346 smallpox and 1790 cholera immunizations were carried out in 1964.

Specialized Units

In 1964, the maternal and child health services were based on ten centres. The school health service looked after 14 606 schoolchildren. The dental health unit treated 2304 patients. Two public health laboratories carried out 9197 examinations.

Major Public Health Problems

The most important and urgent health problems are tuberculosis and malaria. These are followed by

leprosy, filariasis, favus, endemic goitre, treponematoses and intestinal helminthiasis.

Government Health Expenditure

In 1964, the total government expenditure on health services amounted to 10 672 898 escudos. This was equivalent to an expenditure of 19.6 escudos per head on these services as compared with 12.9 escudos per head in 1960.

REPUBLIC OF KOREA

Population and Other Statistics

At the last census, taken in December 1960, the population of the Republic of Korea was 24 989 241. Population estimates for the period 1961-1964 are given in the following table:

1961	25 402 000
1962	26 124 600
1963	26 868 200
1964	27 633 000

The communicable diseases most frequently notified in 1963 were: tuberculosis, all forms, all cases (114 485), leprosy (12 444), whooping-cough (10 700), measles (9328), typhoid and paratyphoid fevers (4944), influenza (4528), poliomyelitis (1644), malaria, new cases (1425), dysentery, all forms (818), cholera (414).

Organization of the Public Health Services

The Ministry of Health and Social Affairs is headed by a minister, assisted by a vice-minister. Its organization comprises the Office of Planning Co-ordination and five bureaux for public health, medical affairs, pharmaceutical affairs, maternity and child welfare and for social affairs respectively. The Bureau of Public Health has the following sub-sections: preventive medicine, sanitation, chronic and communicable diseases control, and maternal and child health. The Bureau of Medical Affairs comprises the following sub-sections: local health services, medical affairs and nursing services.

Local government is under the administrative supervision of the Ministry of Home Affairs and is the direct responsibility of the Mayor of Seoul City and the provincial governors. The bureaux of health and social affairs of the City of Seoul and of provincial governments are responsible for health administration generally and for the operation of health centres. In the counties (*guns*) and the local administrative units

(*myons*) the other local health services are supervised by the Social Affairs Section of the Ministry of Home Affairs.

Hospital Services

In 1964, the Republic of Korea had 578 hospitals and institutions for in-patient care, providing 22 176 beds (0.8 per 1000 population), distributed as follows:

Category and number	Number of beds
General hospitals and clinics	566
Tuberculosis hospitals	6
Leprosaria	6

Out-patient facilities were available in 125 hospital out-patient departments and 189 health centres. During 1964 nearly 6.5 million new patients attended these establishments.

Medical and Allied Personnel and Training Facilities

In 1964, the Republic of Korea had 10 095 doctors which is equivalent to a doctor/population ratio of one to 2700. Other health personnel included:

Dentists	1 722
Pharmacists	8 519
Fully qualified midwives	5 631
Fully qualified nurses	8 159
Herb-doctors	2 673

The Republic of Korea has eight medical colleges. Public health workers are given in-service training at the National Institute of Health. Post-graduate courses in public health are given at the School of Public Health in Seoul National University.

Communicable Disease Control and Immunization Services

Tuberculosis is a major public health problem; there is an estimated total of one million cases. Great

efforts are being made to develop both preventive and curative measures with tuberculin testing, X-ray examinations and BCG vaccinations which are carried out by mobile teams and in health centres. A pilot project in association with UNICEF and WHO was started in 1963. There are estimated to be about 100 000 sufferers from leprosy in the Republic of Korea. A pilot project for active case-finding is being carried out with the collaboration of UNICEF and WHO. Special attention is being given to control and prevention of cholera, Japanese encephalitis, typhoid and typhus fevers and diphtheria. The Government has undertaken intensive and large-scale vaccination programmes to prevent these diseases.

The following immunization procedures were carried out in 1964:

Cholera	18 351 976
Smallpox	2 648 547
Pollomyelitis (Salk vaccine)	1 442 117
BCG	1 187 607
Diphtheria, whooping-cough and tetanus	419 690
Epidemic typhus	369 504
Typhoid and paratyphoid fevers	325 136
Diphtheria	161 114
Whooping-cough	141 394

Specialized Units

In 1964, there were 1024 dental service units. In all, 259 new out-patients attended the independent medical rehabilitation centre; 2858 new patients attended the 12 psychiatric out-patient clinics. The Republic of Korea had 11 public health laboratories which carried out 53 840 examinations.

Major Public Health Problems

The major public health problems are those related to the incidence of the communicable diseases already mentioned. Food, sanitation, nutrition and water supply are also important. Family planning has been encouraged with a view to reducing the present natural increase rate to about 2.0 per cent. in 1971 and 1.5 per cent. in 1980. The key staff for this national family planning programme are trained by the Ministry of Health. Family planning guidance units have been established in the health centres.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The decade under review has been marked by steady economic development which commenced after the armistice in 1953. A first five-year economic development plan was prepared in 1962. The aim of this plan is to develop a self-sufficient economy. The Government has also prepared a national health plan within the development plan.

Government Health Expenditure

In 1964 the total general government expenditure amounted to 73 257 million won, of which 604 million won were devoted to the provision of health services. This was equivalent to an expenditure of 22 won per head on these services. These figures do not include the health expenditure financed by local authorities.

REPUBLIC OF VIET-NAM

Population and Other Statistics

Population estimates for the period 1961-1964, and vital statistics from registration areas, are given in the following table:

	1961	1962	1963	1964
Mean population	14 494 000	14 929 000	15 317 000	15 715 000
Number of live births	344 706	318 511	304 319	310 100
Birth rate (per 1000 population)	23.8	23.4	26.6	29.4
Number of deaths	76 901	70 059	66 719	61 744
Death rate (per 1000 population)	5.3	5.1	5.8	6.0
Natural increase (per cent.) .	1.85	1.83	2.08	2.34
Number of deaths, 1-4 years	13 055	12 181	11 184	9 842
Number of infant deaths .	12 665	11 522	10 854	9 120
Infant mortality rate (per 1000 live births)	36.7	36.2	35.7	31.6
Number of maternal deaths .	122	271	300	...
Maternal mortality rate (per 1000 live births)	0.35	0.85	0.99	...

The communicable diseases most frequently reported in 1962 were: malaria, all cases (116 743), dysentery, all forms (61 799), influenza (47 020), trachoma (24 045), whooping-cough (15 551), measles (13 630), leprosy (6007), infectious hepatitis (4296), gonorrhoea (3329), typhoid and paratyphoid fevers (3166).

In 1964, 20 007 cases of cholera were notified.

Organization of the Public Health Services

The technical organization of the health services in the Republic of Viet-Nam is the responsibility of the Director-General of Health and Hospitals, whereas the Director of Administration and Finance is in charge of all administrative and financial matters. The Directorate-General of Health is divided into the following services: health services proper, preventive medicine services and public hygiene. The first of

these services is headed by a Deputy Director-General of health who is in supervisory charge of the central and provincial hospitals and of health programmes in the country.

The administration of the health services at the regional, provincial and local levels pays particular attention to the development of curative services, preventive medicine, integration of public health services, training of medical and paramedical personnel, provision of hospital beds.

Hospital Services

In 1964, the Republic of Viet-Nam had 1425 public hospitals and other public establishments for in-patient and out-patient care, with 23 787 beds (equivalent to a bed/population ratio of 1.5 per 1000) distributed as follows:

Category and number	Number of beds
General hospitals	53
Medical centres	383
Leprosaria	7
Maternity hospitals	965
Paediatric clinic	1
Psychiatric clinic	1
Venereal diseases hospital	1
Tuberculosis centre	1
Quarantine hospitals	13
	11 864
	2 244
	1 175
	6 312
	243
	1 183
	110
	471
	185

Out-patient consultation facilities were provided in 26 polyclinics, 24 provincial hospital services, 27 dispensaries, 6316 medical posts, and 122 mobile health units.

Medical and Allied Personnel and Training Facilities

In 1960 the Republic of Viet-Nam had 489 physicians, of whom 208 were working in government service and 281 in private practice. The doctor/population ratio was one to 28 835. Other health personnel included:

Dentists	71
Pharmacists	383
Pharmaceutical assistants	69
Fully qualified midwives	828
Rural birth attendants	1 104
Fully qualified nurses	2 013
Assistant nurses	864
Veterinarians	39
Sanitary engineers	3
Laboratory technicians	42
Biologist	1
Sanitary technicians	142
Sanitary agents and auxiliary sanitary agents	304
Social assistants and aides	17

A medical faculty was created in Saigon in 1963. In accordance with a decree promulgated in 1963 by the Secretary of State for National Education the

medical curriculum was reorganized and a pre-medical course introduced. There is also a school for sanitary and hospital technicians in Saigon, state training schools for midwives in Saigon and Hue, a national school for pharmaceutical assistants, and a training school for laboratory technicians. At the end of 1964 a training course for medical store-keepers was started with the assistance of WHO.

Communicable Disease Control

The malaria mortality rate which was equivalent to 11.2 per cent. of the total mortality in 1958 was responsible for only 1.05 per cent. in 1963. During the period under review, 1.5 million dwellings with 6.6 million inhabitants have been protected by DDT spraying. A prevalence survey carried out with the assistance of WHO in urban and rural areas in 1962/63 showed a high tuberculosis incidence. The mortality rate from this disease is very high. There are at present three specialized treatment centres in the country (two of which are for domiciliary treatment) and another is being established. BCG mass vaccination is carried out extensively. Venereal diseases are also a serious public health problem. A control programme assisted by UNICEF and WHO was initiated in 1965. At the end of 1964 there was an outbreak of poliomyelitis in Saigon affecting mainly children under five years. A mass vaccination programme, intended particularly for children, was being prepared in 1964.

Chronic and Degenerative Diseases

A department for the treatment of cardiovascular diseases was established in 1964 at Cho-Ray hospital. The National Cancer Institute which was planned in 1960 was under construction in 1964. Particular attention is being paid to the reorganization of the arrangements for psychiatric care. A national programme for mental health was being prepared in 1964.

Specialized Units

In 1964, 143 pre-natal centres and 89 child welfare dispensaries were engaged in maternal and child health care; 121 044 pregnant women and 22 946 children attended these centres. In 1963, 210 704 deliveries or 69 per cent. of all deliveries were attended by a doctor or qualified midwife. In 1964, 383 392 schoolchildren or 20 per cent. of the total school population were under medical and health supervision at 137 centres. In the same year, 503 935 patients received dental

treatment at 26 dental health units. There were 9612 psychiatric consultations. In 1963 nearly 1000 patients attended 14 hospital rehabilitation departments. Other specialized units included in 1963 one tuberculosis dispensary, one venereal diseases clinic, and 20 leprosy clinics directed by religious associations. There were also four public health laboratories.

Medical Research

During the period under review the Pasteur Institute carried out research in the following fields: bacteriology, parasitology, virology, mycology, biochemistry, hydrology and entomology.

International Collaboration

The Republic of Viet-Nam has received international health assistance from FAO, UNICEF, WHO, and the United States Operations Mission.

Government Health Expenditure

In 1964, the total general government consumption expenditure amounted to 91.5 thousand million piastras, of which 649 million piastras were devoted to the provision of health services. This was equivalent to an expenditure of 41.3 piastras per head on these services as compared with 37.5 piastras per head in 1957.

RYUKYU ISLANDS

Population and Other Statistics

At the last census, taken in December 1960, the population of the Ryukyu Islands was 883 122. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	889 800	900 000	915 000	927 000
Number of live births	20 981	19 859	21 721	19 963
Birth rate (per 1000 population)	23.6	22.1	23.7	21.6
Number of deaths	4 645	4 782	4 951	4 926
Death rate (per 1000 population)	5.2	5.3	5.4	5.3
Natural increase (per cent.)	1.84	1.68	1.83	1.62
Number of deaths, 1-4 years	247	168	191	146
Number of infant deaths	221	192	206	196
Infant mortality rate (per 1000 live births)	10.5	9.7	9.5	9.8
Number of maternal deaths	10	3	2	2
Maternal mortality rate (per 1000 live births)	0.48	0.15	0.09	0.10

Of the 4926 deaths reported in 1964, the main causes were: senility without mention of psychosis, ill-defined and unknown causes (1071), vascular lesions affecting the central nervous system (711), malignant neoplasms (544), chronic rheumatic heart disease, arteriosclerotic and degenerative heart disease and other diseases of the heart (427), pneumonia (213), accidents (213, including 70 in motor-vehicle accidents), tuberculosis, all forms (204), nephritis and nephrosis (141), gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn (124), suicide and self-inflicted injury (105), cirrhosis of the liver (94), hypertension (69).

In 1963, the communicable diseases most frequently notified were: trachoma (4468), tuberculosis, all forms, new cases (2682), syphilis, cases treated (1481),

dysentery, all forms (1111), gonorrhoea (782), measles (511), diphtheria (82), infectious hepatitis (42), leprosy (27), poliomyelitis (3).

Hospital Services

In 1963, eight government hospitals with a total of 1316 beds admitted 7526 patients. There were also 142 private profit-making hospitals and five private non-profit-making hospitals. These latter hospital establishments, which are of varying size but mostly of the small nursing-home type, had 2499 beds. In addition, there were two leprosaria with 1320 beds. The grand total of 5135 beds gives a ratio of 5.6 per 1000 population.

Out-patient facilities are available at six health centres and 84 medical aid posts. There are no mobile health units in the Ryukyu Islands, but some private doctors visit remote areas once a year.

Medical and Allied Personnel

In 1963, the Ryukyu Islands had 366 doctors of whom 297 were in private practice. There was thus one doctor per 2500 population. In addition to these doctors there were also 107 "medical servicemen". Other health personnel included:

Dentists	108
Pharmacists	167
Fully qualified midwives	433
Fully qualified nurses	591
Nurses with midwifery qualifications	30
Auxiliary nurses	151
Veterinarians	133
Sanitary Inspectors	93
Laboratory technicians	48
X-ray technicians	12

Immunization Services

The following immunizations were carried out in 1963:

Cholera	397 864
Poliomyelitis (live vaccine)	117 165
Diphtheria, whooping-cough and tetanus	82 369
Smallpox	82 369
Typhoid and paratyphoid fevers	30

Specialized Units

In 1963, maternal and child health care was provided at six pre-natal centres and six child health centres; 2351 pregnant women and 11 418 pre-school children attended these centres. All deliveries were attended by a doctor or qualified midwife. In 1964, 65 434 schoolchildren or 27.7 per cent. of the total school population, were under medical supervision given at 57 school health units.

Other establishments for specialized medical care included 127 dental units, one independent medical rehabilitation centre, where the attendance of 38 new patients was recorded in 1963, five psychiatric out-patient clinics with 2440 new patients in 1964, two tuberculosis centres and two leprosy out-patient clinics. There was also one public health laboratory which carried out over 26 000 examinations.

Government Health Expenditure

In the fiscal year 1963/64 the Department of Health spent US \$3.6 million on current account and US \$1.0 million on capital account. A further sum of US \$0.3 million was spent by municipal authorities on the provision of health services. Combined current and capital expenditure on health services thus totalled US \$4.9 million which is equivalent to an expenditure of US \$5.3 per head.

SINGAPORE¹

Population and Other Statistics

At the last census, taken in June 1957, the population of Singapore was 1 445 929. Population estimates and some other vital statistics for the period 1961-1964, excluding transients afloat and non-locally domiciled military and civilian services personnel and their dependants, are given in the following table:

	1961	1962	1963	1964
Mean population	1 687 300	1 732 800	1 775 200	1 820 000
Number of live births	59 930	58 977	59 530	58 217
Birth rate (per 1000 population)	35.5	34.0	33.5	32.0
Number of deaths	10 027	10 178	10 138	10 434
Death rate (per 1000 population)	5.9	5.9	5.7	5.7
Natural increase (per cent.)	2.96	2.81	2.78	2.63
Number of deaths, 1-4 years	665	629	488	465
Number of infant deaths	1 937	1 843	1 674	1 738
Infant mortality rate (per 1000 live births)	32.3	31.2	28.1	29.9
Number of maternal deaths	24	23	21	23
Maternal mortality rate (per 1000 live births)	0.4	0.4	0.4	0.4

In 1964, the total number of deaths was 10 434. The main causes were: senility without mention of psychosis, ill-defined and unknown causes (1743), malignant neoplasms (1331), congenital malformations, birth injuries post-natal asphyxia and atelectasis, infections of the newborn and other diseases peculiar to early infancy and immaturity (1091), arteriosclerotic and degenerative heart disease and

¹ From 16 September 1963 to 9 August 1965, Singapore formed part of Malaysia.

other diseases of the heart (938), tuberculosis, all forms (710), pneumonia (706), vascular lesions affecting the central nervous system (646), accidents (448, including 201 in motor-vehicle accidents).

Among the communicable diseases most frequently notified in 1965 were: typhoid fever (280), leprosy (242), diphtheria (230), poliomyelitis (40).

Hospital Services

In 1964, Singapore had 16 hospitals and establishments for in-patient care providing 7243 beds (4.0 per 1000 population). Eleven of these hospitals and establishments were State-maintained. To the 6477 beds in these government institutions, 112 660 patients were admitted during 1964 and received 2 622 396 days of in-patient care. The total number of 7243 beds was distributed as follows:

Category and number	Number of beds
General hospitals	7 2 078
Tuberculosis hospital	1 1 284
Infectious diseases hospital	1 250
Maternity hospital	1 443
Psychiatric hospital	1 1 869
Chronic diseases hospital	1 70
Venereal diseases hospital	1 61
Orthopaedic hospital	1 120
Leprosarium	1 1 023
Institution for mental defectives	1 45

Out-patient facilities were provided in 1964 at eight government and five private hospital out-patient departments, 37 dispensaries and two floating and five travelling health units.

Medical and Allied Personnel

In 1964, Singapore had 935 doctors. The doctor/population ratio was one to 1950. Other health personnel included:

Dentists	101
Pharmacists	105
Fully qualified midwives	1 357
Fully qualified nurses	1 855
Assistant nurses	666
Sanitary engineers	25
Sanitary inspectors	23
Physical therapists	19
Laboratory technicians	148
X-ray technicians	5

Immunization Services

The following immunization procedures were carried out in 1964:

Poliomyelitis (Sabin vaccine)	215 423
Whooping-cough (combined, triple antigen) . .	137 432
Smallpox	132 137
Diphtheria and tetanus	83 332
Cholera	33 679
Diphtheria	5 926
Tetanus	3 070
Yellow fever	2 194

Specialized Units

In 1964, maternal and child care services were based on 64 pre-natal and child health centres. Altogether 25 927 pregnant women, 63 723 children under one year and 34 538 children between one and six years of age attended these centres. Domiciliary visits were paid to 41 013 pregnant women, 37 543 children under one year and 64 242 pre-school children. In

the same year, 57 965 deliveries (99.3 per cent. of all births) were conducted by a doctor or qualified midwife. The whole school population of 450 000 children was under the supervision of four school health units. The 55 dental health units recorded 314 733 attendances. A total of 282 989 attendances were made at 15 hospital rehabilitation departments. The four psychiatric out-patient clinics received 2478 new out-patients. Singapore also has a tuberculosis control unit and an anti-tuberculosis association. A total of 325 727 examinations were carried out in the three public health laboratories.

Environmental Sanitation

The Public Utilities Board is responsible for the supply of water. The urban population is provided with piped water to their dwellings, whereas the rural population has water from stand pipes. The Public Works Department constructs the sewers and treatment works for the whole island. In all, 130 000 houses, mostly in urban areas, are served by sewerage systems.

Government Health Expenditure

In 1964, the total general government current expenditure amounted to M \$325.8 million of which M \$65.0 million (i.e., 19.9 per cent.) were devoted to the provision of health services. This was equivalent to a *per capita* expenditure of M \$36 on these services as compared with M \$32 in 1960. A further sum of M \$2.2 million was spent on capital account for the expansion and improvement of health services.

TONGA

Population and Other Statistics

At the last census, taken in September 1956, the population of Tonga was 56 838. Population estimates and some other vital statistics for the period 1961-1964 are given in the following table:

	1961	1962	1963	1964
Mean population	64 747	66 557	68 477	70 455
Number of live births	2 008	2 158	2 229	2 315
Birth rate (per 1000 population)	31.0	32.4	32.6	32.9
Number of deaths	262	283	285	282
Death rate (per 1000 population)	4.0	4.3	4.2	4.0
Natural increase (per cent.)	2.70	2.81	2.84	2.89
Number of infant deaths	27	24	18	40
Infant mortality rate (per 1000 live births)	13.4	11.1	8.1	17.3

Recording of births and deaths is incomplete. Birth and death rates were actually higher than those given above.

The main causes of death as recorded in 1964 at the three main hospitals were: pneumonia; tetanus; congenital malformations, birth injuries, post-natal asphyxia and atelectasis and infections of the newborn; whooping-cough; malignant neoplasms; gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn.

Among the communicable diseases most frequently notified in 1964 were: influenza (12 760), dysentery, all forms (416), typhoid and paratyphoid fever (208), tuberculosis, all forms (145), trachoma (45),

gonorrhoea (42), infectious hepatitis (18). Five cases of leprosy were also recorded.

Organization of the Public Health Services

Medical care and health protection are provided by the Medical Department which is headed by the Chief Medical Officer, who also directs the activities of the Public Health Section, responsible for sanitation and preventive medicine. There are the Principal Board of Health and district boards of health constituted under the Public Health Act to advise the Government on health matters. The Minister of Health is Chairman of the Principal Board of Health.

For administrative purposes, the country is divided into nine medical divisions based on the location of the three main hospitals and the six rural dispensaries, each of which (except two) is in the charge of a medical officer responsible to the Chief Medical Officer for carrying out the curative and preventive services in his area. Decentralization at all levels is being increased slowly and gradually.

All inhabitants of Tonga receive free medical care and health protection services.

Hospital Services

At the end of 1964 there were three general government hospitals with 193 beds and three medical centres with 12 beds. The total bed capacity was thus 205 (2.9 beds per 1000 population). Altogether, 4816 in-patients were admitted in 1964.

Out-patient facilities were provided at three hospital out-patient departments and six dispensaries. These establishments registered 131 781 attendances in 1964. Visits are paid by the various specialist services to areas of the country where they are not available on a permanent basis.

Medical and Allied Personnel

At the end of 1964, Tonga had 24 doctors of whom one was in private practice. The doctor/population ratio was one to 2980. There were also the following medical and allied personnel:

Medical assistants	3
Dentists	8
Pharmaceutical assistants	2
Fully qualified midwives	5
Fully qualified nurses	5
Fully qualified nurses with midwifery qualifications	5
Assistant nurses	37
Student nurses	31
Sanitary inspectors	5
Physical therapist	1
Laboratory technicians	2
X-ray technician	1
Dispensers	4
Medical attendants	4
Dental chair assistants	3

Communicable Disease Control and Immunization Services

Tonga has a rapidly increasing population and a low standard of environmental sanitation. The Medical Department is tackling the problem of communicable disease control by concentrating its efforts and resources on improving environmental sanitation, on immunizing age-groups of the population at greatest risk, on health education and on the improvement of the nutritional state and general health of the people. No quarantinable diseases have occurred in Tonga in recent years. Tuberculosis, typhoid fever, and venereal diseases are still important public health problems. So are leprosy, dysentery, filariasis, gastro-enteritis, infantile diarrhoea, intestinal parasitosis, tetanus and tetanus neonatorum. The number of active yaws cases in the population was reduced from 1227 (2.2 per cent.) in 1962 to 32 (0.05 per cent.) in 1964. There is no malaria in Tonga.

The following immunization procedures were carried out in 1964:

Smallpox	44 290
Typhoid and paratyphoid fevers	5 320
Poliomyelitis	2 606
Diphtheria, whooping-cough and tetanus	1 694
BCG	380

Chronic and Degenerative Diseases

The incidence of chronic and degenerative diseases is not high and they are not regarded as an important feature of the national morbidity and mortality.

Specialized Units

Maternal and child health services are provided at three centres where 1356 pregnant women and 2062 pre-school children attended in 1964. In addition 246 children received domiciliary care. In the same year 1434 deliveries (62 per cent. of all births) were attended by a doctor or qualified midwife. Five dental health units recorded 57 717 attendances. Special services for tuberculosis, leprosy, maternal and child health, X-ray and laboratory work, public health and family planning are provided at two general hospitals. There is an ophthalmic clinic at one of the main hospitals.

Major Public Health Problems

The major public health problems are the high incidence of infectious diseases, the low standard of environmental sanitation in the villages, and the inadequacies in facilities and personnel of the main government hospital. It is considered that the building of a new modern hospital should have first priority.

Social and Economic Developments of Significance for the Health Situation during the Period 1955-1964

The 1956 census showed that over 61.5 per cent. of the population aged 15 years and over were engaged in work on the land, 2.23 per cent. in commerce, 1.02 per cent. in transport and communication services, 1.84 per cent. in manufacturing or processing activities and 5.77 per cent. in other forms of services. Educational facilities at all levels are needed, as Tonga has a great number of children to educate.

National Health Planning

A health section has not been included so far in any long-range overall national plan. There have been national health plans which have been approved by the government; but they have been more or less independent of any long-range overall national plan. These health programmes covered environmental

sanitation, education and training of health personnel, yaws control, maternal and child health and nursing education.

International Collaboration

Tonga closely collaborates with the South Pacific Health Service of which it is a member, with the South Pacific Commission, the United States Public Health Service, the Pathfinder Fund of the United States of America, and with WHO.

Government Health Expenditure

In the fiscal year 1963/64 the total general government expenditure on capital and current account was an estimated £T 754 361 of which an estimated £T 100 107 (i.e. 13.3 per cent.), were devoted to health services. This is equivalent to an expenditure of £T 1.4 per head on these services.

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CURRENCIES

A list of national units of currency and US dollar equivalents is given below with the reservation that the rates are those that prevailed in December 1964—the end of the period covered by the report.

Owing to variations in exchange rates any attempt to express national expenditures over the whole of the four-year period covered by the report in terms of a single currency might give rise to certain anomalies. In the country reviews, therefore, expenditures are expressed in the national currencies only.

Country or territory	Units of currency per US dollar (December 1964)	Country or territory	Units of currency per US dollar (December 1964)
Albania	50.00 leks	Gabon	245.00 CFA francs
Algeria	4.90 dinars	Ghana	0.3571 pounds
American Samoa	1.00 US dollars	Gibraltar	0.3571 pounds
Angola	28.75 escudos	Gilbert and Ellice Islands	0.4464 Australian pounds
Antigua	1.70 WI dollars	Greece	30.00 drachmas
Argentina	150.00 pesos	Grenada	1.70 WI dollars
Australia	0.4464 pounds	Guam	1.00 US dollars
Austria	25.83 schillings	Guatemala	1.00 quetzales
Barbados	1.70 WI dollars	Haiti	5.00 gourdes
Basutoland	0.7142 rand	Honduras	2.00 lempiras
Bechuanaland	0.7142 rand	Hong Kong	5.70 dollars
Belgium	50.00 francs	Hungary	23.48 forints
Bolivia	11.90 pesos	Iceland	43.00 krónur
British Guiana	1.70 WI dollars	India	4.762 rupees
British Honduras	1.43 dollars	Indonesia	517.50 rupiah
British Solomon Islands	0.4464 Australian pounds	Iran	75.00 rials
Brunei	3.03 Malayan dollars	Iraq	0.3571 dinars
Bulgaria	1.17 leva	Ireland	0.3571 pounds
Burma	4.762 kyats	Israel	3.00 pounds
Cambodia	35.00 riels	Italy	625.00 lire
Cameroon	245.00 CFA francs	Jamaica	0.3571 pounds
Canada	1.08 dollars	Japan	360.00 yen
Canal Zone	1.00 US dollars	Jordan	0.3571 dinars
Cape Verde Islands	28.75 escudos	Kuwait	0.3571 dinars
Cayman Islands	0.3571 pounds	Laos	240.00 kips
Ceylon	4.762 rupees	Liberia	1.00 dollars
Chad	245.00 CFA francs	Luxembourg	50.00 francs
Chile	3.20 escudos	Macao	5.23 patacas
China (Taiwan)	40.00 dollars	Madagascar	245.00 francs
Colombia	12.25 pesos	Malawi	0.3571 pounds
Comoro Archipelago	245.00 CFA francs	Malaysia	3.03 Malayan dollars
Cook Islands	0.3596 New Zealand pounds	Maldivian Islands	4.762 rupees
Costa Rica	6.62 colones	Mali	245.00 francs
Cuba	1.00 pesos	Malta	0.3571 pounds
Cyprus	0.3571 pounds	Martinique	4.90 French francs
Czechoslovakia	7.20 korunas	Mauritania	245.00 CFA francs
Denmark	6.907 kroner	Mauritius and Dependencies	4.762 rupees
Dominican Republic	1.00 pesos	Mexico	12.50 pesos
Ecuador	18.50 sucres	Montserrat	1.70 WI dollars
El Salvador	2.50 colones	Mozambique	28.75 escudos
Falkland Islands (Malvinas) and Dependencies	0.3571 pounds	Nauru	0.4464 Australian pounds
Federation of South Arabia	7.14 EA shillings	Nepal	7.62 rupees
Federal Republic of Germany	4.00 marks	Netherlands	3.62 guilders
Fiji	0.3952 pounds	New Caledonia and Dependencies	89.77 CFP francs
Finland	3.20 new markkas	New Hebrides	{ 89.77 CFP francs 0.4464 Australian pounds
France	4.90 francs	New Zealand	0.3596 pounds
French Polynesia	89.77 CFP francs	Nicaragua	7.00 córdobas
French Somaliland	214.00 Djibouti francs	Niger	245.00 CFA francs
		Nigeria	0.3571 pounds

Country or territory	Units of currency per US dollar (December 1964)	Country or territory	Units of currency per US dollar (December 1964)
Niue	0.3596 New Zealand pounds	St Christopher (St Kitts)-Nevis-Anguilla	1.70 WI dollars
Norway	7.143 kroner	St Lucia	1.70 WI dollars
Pacific Islands Trust Territory	1.00 US dollars	St Pierre and Miquelon	245.00 CFA francs
Pakistan	4.762 rupees	Sudan	0.3482 pounds
Panama	1.00 balboas	Surinam	1.886 guilders
Papua and New Guinea	0.4464 Australian pounds	Sweden	5.173 kronor
Paraguay	124.00 guaranés	Switzerland	4.32 francs
Peru	26.80 soles	Syria	4.00 pounds
Philippines	3.86 pesos	Thailand	20.80 baht
Poland	24.00 zlotys	Togo	245.00 CFA francs
Portugal	28.75 escudos	Tonga	0.4464 pounds
Portuguese Guinea	28.75 escudos	Trinidad and Tobago	1.70 WI dollars
Portuguese Timor	28.75 escudos	Turkey	9.00 liras
Puerto Rico	1.00 US dollars	Union of Soviet Socialist Republics	0.90 roubles
Republic of Korea	255.00 won	United Arab Republic	0.4348 pounds
Republic of Viet-Nam	73.50 piastres	United Kingdom of Great Britain and Northern Ireland	0.3571 pounds
Réunion	245.00 CFA francs	United Republic of Tanzania	7.14 EA shillings
Romania	6.00 lei	United States of America	1.00 dollars
Rwanda	50.00 francs	Upper Volta	245.00 CFA francs
Ryukyu Islands	1.00 US dollars	Venezuela	4.48 bolívares
São Tomé and Príncipe	28.75 escudos	Virgin Islands of the United States of America	1.00 US dollars
Saudi Arabia	4.50 riyals	Yugoslavia	750.00 dinars
Seychelles	4.762 rupees	Zambia	0.3571 pounds
Singapore	3.03 Malayan dollars		
Somalia	7.14 shillings		
Southern Rhodesia	0.3571 pounds		
Spain	60.00 pesetas		