
# NATIONAL OPEN UNIVERSITY OF NIGERIA

## SCHOOL OF BUSINESS AND HUMAN RESOURCE MANAGEMENT

**COURSE CODE:MPA777**

**COURSE TITLE:HEALTH CARE STRATEGIC PLANNING AND MATERIAL MANAGEMENT**

**COURSE GUIDE**

# MPA777
# HEALTH CARE STRATEGIC PLANNING AND MATERIAL MANAGEMENT

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## Introduction

MPA777: Health Care Strategic Planning and Material Management is a course of intensive 12 study units. It will introduce the students to health planning and planning techniques, health care strategic planning process, effective leadership and control. The learners will further be exposed to health care financing, cost analysis in health care service and health economics. In the course, the students shall examine management of drugs and consumables, equipment and space in the hospitals including how to evaluate health services.

At the end of the course, the learner is expected to demonstrate clear understanding of health care strategic planning and material management that will enhance a better performance in the real life experience as hospital managers to meet the needs of the teeming health consumers in our society.

This course guide provides you with what to expect in the course, how to work through the course material as a distance learner burdened with self-studying. Your tutorial sessions will be of tremendous assistance to you for necessary support.

## The Course

The Course is on health care strategic planning and material management. You will understand the process of planning health care services and managing materials and consumables in the hospital set-up.

## Course Aim

The course aims at providing students with an in-depth knowledge of health care strategic planning and material management so that the scarce resources available can be maximised for the benefits of health consumers.

## Course Objectives

To meet the course aim, the following objectives are set for the learners:

- explain the term health planning
- describe health planning techniques
- discuss health care strategic planning process
- explain health plan implementation
- describe maintenance of health personnel through effective leadership and control
- define health care financing

i. explain cost analysis in health service

ii. discuss fundamentals of health economics
iii. describe management of drugs and consumables in hospitals
iv. explain how health services are evaluated

## Working through the Course

In order to effectively complete this course, you are to study all the units, avail yourself with the recommended textbooks and other relevant materials. Each unit has tutor-marked assignment which you are required to answer and then submit for your in-course assessment.

## Course Materials

Major components of this course are:

i. Course Guide
ii. Study Units
iii. References/Further Reading

## Study Units

### Module 1

| | |
|---|---|
| Unit 1 | Health Planning and Planning Techniques |
| Unit 2 | Health care Strategic Planning Process |
| Unit 3 | Health Plan Implementation |
| Unit 4 | Maintenance of Health Personnel through Effective Leadership and Control |

### Module 2

| | |
|---|---|
| Unit 1 | Health Care Financing |
| Unit 2 | Cost Analysis in Health Service |
| Unit 3 | Fundamentals of Health Economics |
| Unit 4 | Management of Drugs and Consumables I |

### Module 3

| | |
|---|---|
| Unit 1 | Management of Drugs and Consumables II |
| Unit 2 | Managing of Equipment and Space in the Hospital |
| Unit 3 | International Health |
| Unit 4 | Evaluation of Health Services |

## Textbooks and References

DHSS (1976). *The NHS Planning System (The Blue Book).* London: HMSO.

Knox, E. G. (1979). *Epidemiology in Health Care Planning: A Guide to the uses of a Scientific Method.* Oxford: Oxford University Press.

Olumide, E. A.; Okediji, S. O. and Asuzu, M. C. (1986). *Action Plan for the Proposed Primary Health Care Programme in Ibarapa Local Government Area of Oyo State.* Unpublished Monograph, Department of Preventive and Social Medicine, University of Ibadan.

Parker, R. L. (1981). *Functional Analysis.* Unpublished Monograph, Department of International Health, John Hopkins University, School of Public Health, Baltimore.

Waterson, A. (1987). *Development Planning Lessons of Experience.* Baltimore: John Hopkins Press.

W.H.O. (1981). *Managerial Process for National Health Development* Guiding Principles for Use in Support of Strategies for Health for All by the Year 2000. Health for All Series. No. 5.

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## Assessment

There are two aspects to the assessment of the course. Tutor-Marked Assignment and, written examination at the end of the course. You are expected to answer the Tutor-Marked Assignments and submit at the appropriate time to your counsellor as this makes up to 30% of your total course work hence, the need to do it properly.

At the end of the course, you are expected to write a final examination of three hours, this examination counts for 70% of your total course work.

## Tutor-Marked Assignment (TMA)

There are 12 Tutor-Marked Assignments in the course booklet and it is expected that learners should answer these questions thoroughly and submit the assignments at the stipulated time to the Study Centre.

## End of Course Examination

The final examination at the end of this course will be a two hours thirty minutes written paper which has a value of 70%. Ensure that you cover all the units for the examination as all the areas of the course will be evaluated.

## Summary

MPA777: Health Care Strategic Planning and Material Management is to prepare you to meet the changing needs of health consumers for effective health planning and service delivery. You will be able to realise the following objectives:

i. explain the term health planning
ii. describe health planning techniques
iii. discuss health care strategic planning process
iv. explain health plan implementation
v. describe maintenance of health personnel through effective leadership and control
vi. define health care financing
vii. explain cost analysis in health service
viii. discuss fundamentals of health economics
ix. describe management of drugs and consumables in hospitals
x. explain how health services are evaluated

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# MODULE 1



## UNIT 1 HEALTH PLANNING AND PLANNING TECHNIQUES

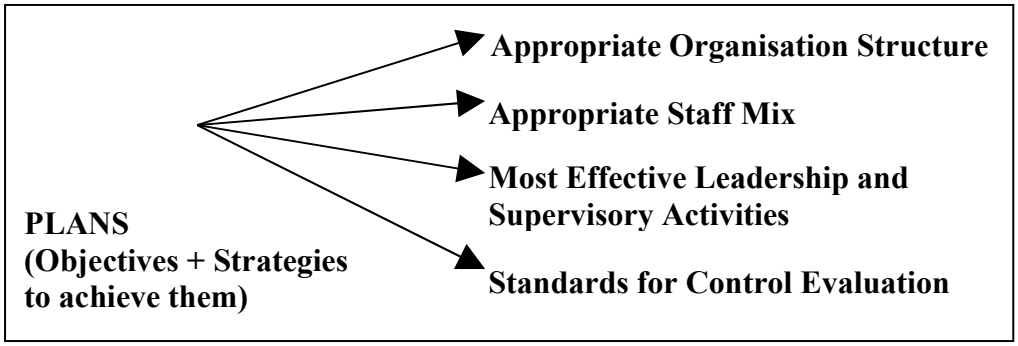
### CONTENTS



## 1.0 INTRODUCTION

This course is titled Health Care Strategic Planning and Material Management. It is intended to look at various ways health care delivery is planned and delivered to the consumers, and how resources are managed to the benefits of the masses. This unit is looking at Health Planning and Planning Techniques and it is hoped that you will diligently go through the unit to improve your knowledge and skills in order to meet the daily changing needs of the consumers of health services. Planning is essential for the efficient achievement of all human endeavours. Individuals, as well as organisations, need to plan because of the uncertainties in a constantly changing environment. Whether we plan for a party, a workshop, a health facility or a health service, planning is that process which we use to select our goals and objectives and to determine how best to achieve them. Put very simply, the process involves taking decisions on what needs to be done in future to attain objectives in view of past and prevailing circumstances.

Planning is the most basic of all management functions and precedes all the others. Indeed, it is considered to be the most strategic of all management functions as it establishes institutional objectives and determines how the other major functions of the manager will be executed towards the attainment of the objectives. The concept of planning is depicted in the figure below. The manager, in order to ensure the attainment of objectives which have been expressed in health plans, organises resources appropriately, decides what types of staff are required to fulfill the objectives of the organisation, chooses the most appropriate leadership and supervisory activities and controls and evaluates all activities in accordance with planned standards.




**The primacy of the planning in the process of management**

Furthermore, there is a particularly close relationship between planning and evaluation. These planning and evaluation, have been called the Siamese twins of management because, unplanned action can neither be controlled, monitored nor evaluated. The processes of monitoring and evaluation emanating from plans keep activities on the planned course of action and seek to ensure that objectives are attained. It is impossible to tell if one is on the correct route to one's destination (monitoring) or indeed if one has reached that destination (evaluation) unless one had decided before starting the journey what the destination would be and had given thought as to how to reach it (planning).

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define health planning
- explain its role in the practice of management
- identify and describe the specific elements of the planning process
- list the major techniques used in planning.

# 3.0 MAIN CONTENT

## 3.1 Background, Rationale, Purpose of Health Planning

Efforts at health planning have been traced to the beginning of this century when the National Tuberculosis Association of the United States of America began to stimulate the development of programmes for the control of tuberculosis. These early efforts consisted largely of intuitive, spontaneous and subjective projections of activity based on past experience (Waterston, 1987). Since that time however, health planning in the developed world has now progressed to become a much more deliberate, systematic, objective and scientific process of mobilising exact information and deciding how best to organise resources (Reinke, 1972; Knox 1979).

Modern health planning is a systematic decision making process during which objectives are set and decisions are taken on how, when and where to deploy resources in order to achieve these objectives. The purpose of health planning is to facilitate the accomplishment of the objectives of the organisation in the most efficient manner i.e. without undue wastage of resources. The health planning process involves an assessment of health needs and of tasks which must be accomplished or to satisfy the identified health needs. In order words, health planning is deciding in advance, what to do, who is to do it, how to do it and when.

Planning, bridges the gap between the present health situation i.e. where we are and the desired health situation i.e. where we want to be with regard to health. Planning makes the desired health situation more certain by not leaving it entirely to chance. Furthermore, planning ensures that the most cost-effective and cost-efficient health care activities are pre-selected and thus rationalises the use of scarce resources. Figure 2 illustrates the differences in what is likely to be achieved in terms of improvement in health status by an unplanned health programme whose outcome is left to chance (A) and a planned one (B). It is assumed that both programmes are carried out within the same period and using the same resources.

The marked fall in disease incidence attained by the well-planned programme (B) as compared with the unplanned programme (A) is attributable to good planning.

From the foregoing, it should by now be obvious that the primacy of health planning in the management of health programmes at all levels cannot be over-emphasised. Health planning minimises the negative effects of future uncertainty and of change in both the external and internal management environment. Secondly, the act of planning focuses

attention on the objectives to be attained, and galvanises purposeful action towards the attainment of those objectives. Thirdly, it minimises cost, and establishes standards, planning facilities, monitoring and evaluation.

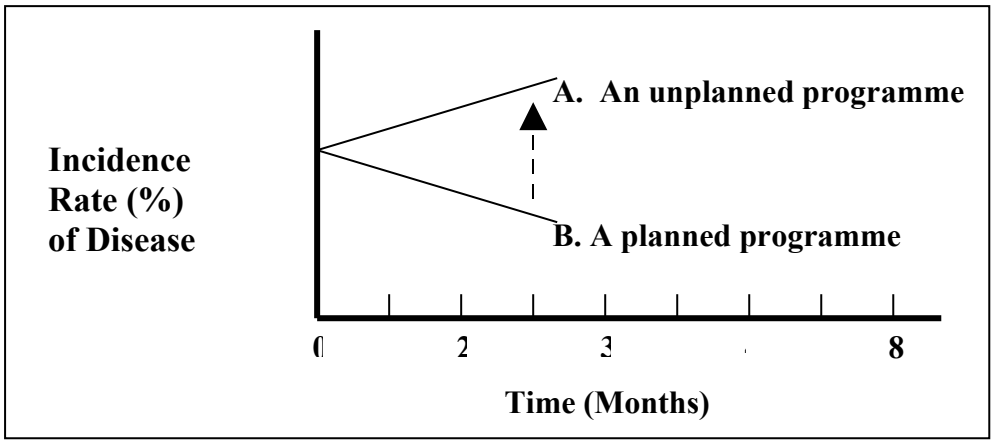



**Fig. 1 Planned and Unplanned programmes**

## 3.2 Classification of Health Plans

Several criteria have been used for the classification of formal health plans. The major criteria of practical significance include:

i. the flexibility of the plan,
ii. the duration of the period covered by the plan,
iii. the nature and scope of the plan.

**i. Flexibility of the Plan:** plans may be classified as fixed plans or rolling plans.

- Fixed plans cover a rigid period of time, and have fixed aims and objectives. The resources inputs for the implementation of the plan are also fixed and rigid.

- Rolling plans are flexible and are continuously revised and updated so as to remain current with the prevailing conditions. They cover a fixed period which is sub-divided into units which dove-tail one into the other. For instance, a three-year rolling plan may be revised yearly, modified as necessary and extended into the following year. This is repeated for the duration of the plan. The targets and resource inputs are flexible and are dictated by prevailing circumstances. Rolling plans are paramount in health planning.

**ii. Duration of the Plan:**

- Long-term plans are also known as perspective plans which cover a fixed period of ten or more years.

- Medium-term plans cover a period of three and ten years, usually 5 years.

- Short-term plans are operational covering a period of one or two years. They may be fixed or rolling plans.

iii. **Nature and Scope of the Plan:** planning is a function of all health managers. However, the nature and scope of planning vary according to the level of management at which the plan is being formulated i.e. whether a top (strategic) management level, middle (tactical, executive or administrative) management level or at junior (operational or supervisory) management level. Accordingly, two broad categories of health plans have been distinguished.

- Strategic, corporate or comprehensive health plans, and
- Operational, tactical or functional health plans (DHSS, 1976).

Like management itself, each type of health planning takes place at all levels of management, but at varying degrees. While top and middle-level management is primarily concerned with strategic planning, the supervisory management level is more pre-occupied with the formulation of operational health plans prepared at the department of unit level. It must be emphasised that strategic and operational planning are not two separate and entirely unrelated processes. On the contrary they are closely inter-related. Strategic health planning is the process of determining the health goals and general objectives (intended achievements) of the health service. The organisation has the responsibility of formulating policy guidelines to aid decision-making and selecting strategies or general approaches by which the goals can best be attained in the light of current circumstances and future projections. A strategic plan provides a general framework and a sense of direction for more detailed tactical and operational planning. Specific functional programmes have specific operational targets at the lower levels of the health service organisation, thus creating a hierarchy of plans. Thus the two levels of planning are complementary. Each will be described in greater detail in the next section.

## 3.3 Strategic Health Planning

Strategic or comprehensive health planning involves the preparation of broad policies and strategies. Strategic planning takes a broad overview over an extended period of time, usually ten years or more. Also,

strategic planning usually covers a large health service in a country. In other words, they are long-range plans made for comprehensive health development, covering a broad scope and extending over a long period of time. Strategic health plans set priorities for general health development and plot the general course of action (strategic) to be taken towards the attainment of health goals.

The British National Health Service Planning System (DHSS 1976) described strategic health planning as a system which poses and answers the following questions:

Q 1 Where are we now?
Q 2 Where do we want to be?
Q 3 How and when do we get there?
Q 4 How are we doing?

| PLANNING LEVEL | SUBJECT MATTER | EXAMPLES OF GOALS OBJECTIVES |
|---|---|---|
| STRATEGIC | Broad Goals, Policies, Strategies, Outcomes, Impacts. | 1. To increase the well-being of the rural population within 20 years through primary health care.<br>2. To reduce the health problems of the rural population.<br>3. To reduce mortality and morbidity of the rural poor.<br>4. To reduce material and infant death in the rural poor by 50% in 10 years through the promotion of the health of mothers and children under 5 years. |
| TACTICAL OPERATIONAL | Service Output Targets Service Processes Resource Inputs. | 1. To increase the proportion of pregnant women attended by trained health workers by 50% in 5 years.<br>2. To recruit and train at least 2 traditional birth attendants for 20% of all villages within 1 year.<br>3. To design manuals of procedures for traditional birth attendants within 1 month. |

**Fig. 2 A Hierarchy of Plans and Objectives**

Translated in the West African context, these questions would be reconstructed by the health planners in the Ministries of Health as follows:

Q 1 What is the present health status of our citizens and what are the common health problems of the major population groups in our country or state?

Q 2 What improvements should be made in the health status of our citizens?

Q 3 How and when can these improvements be attained i.e. what strategies (approaches to solving the problems) are most cost-effective and by what date should the desired improvement in health status occur?

Q 4 How well?

The National Health Policy and Strategy of Achieving Health for All Nigerians (FMOH, 1986) is a strategic health plan. The answers to the questions above are provided by the documents as follows:

Q 1 What is the present health status of our citizens and what are the common health problems?

Ans. The limited health strategies indicate the general poor of health of the population. Most of the deaths and serious illnesses which occur among Nigerians are due to conditions which are easily preventable or which can be treated with simple remedies Communicable diseases, especially those which are associated with inadequate environmental sanitation and poor personal hygiene are predominate.

Q 2 What is the future goal of the National Health Policy and Strategy in Nigeria?

Ans. The goal of the national health policy shall be a level of health that will enable all Nigerians to achieve socially and economically productive lives… Health for all by the year 2000 shall be accepted as a challenging target

Q 3 How and when do we get there?

Ans. The current high rates of morbidity and mortality can be substantially reduced by a more rational application of available resources…" The national health care system shall be developed at three levels".

Q 4 How well are we doing?

Ans... A national health information system shall be established by governments of the federation. It shall be used as a management tool... To monitor progress towards stated goals and targets of the health services... Health status indicators shall include:

i. nutritional status
ii. infant mortality rate
iii. child mortality rate... etc.

The goals, policies and strategies contained in a strategic health plan could not have been formulated without the process of "premising or fore-casting". This involves a consideration of both the prevailing and anticipated future environment in which the plan will operate. Thus, both strategic and operational health planning involves a scanning of factors in the environment which might affect the operation of the plan i.e. economic, political, social, ethical, technological, legal, etc. Effective plans anticipate these factors and make adequate provision for them i.e. the good planner is one who can forecast obstacles or constraints imposed by changes in the planning environment and takes appropriate action by formulating strategies which are like to be effective.

As demonstrated in the Nigerian National Health Policy document, strategic health planning uses information which emanated from the lowest level of the health system in the local government, in health planning context, and filters information upward through the Ministries of Health in the various states and to the health planners at the Federal level. The desirability of this "bottom-up" type of planning must be emphasised. 'Bottom-up" planning as opposed to "top-down" planning guarantees that local realities are fully taken into consideration by the top managers in formulating strategic plans. By providing an opportunity for peripheral units to provide not only information, but also ideas and suggestions, "bottom-up" planning enhances the relevance of strategic plans for solving health problems at the local level.

In order to ensure that strategic health plans formulate strategies which will indeed be effective, the following key requirements should be fulfilled.

i. Corporate self-appraisal on a regular basis to asses the impact of current and past health policies and strategies on health development and on the health status of the nation. This enables strategic health planners to learn from experience and ensures that costly mistakes made in the past are not repeated.

ii. Forecasting should be carefully done in order to determine major changes in the future environment which are likely to have an impact on health and health development. For example, the current depression in the economy, the AIDS pandemic, etc. The more accurately the organisation can foresee the future environment, the better she is able to establish policies and strategies which are likely to be able, to operate effectively within the future environment. For example, is a system of voluntary village health workers likely to succeed in a situation of rapidly escalating goods prices and galloping inflation?

iii. An organisational structure which allows for participation at the lower levels. In scanning the environment and assessing the national health needs and priorities, it is emphasised once again that information should be obtained from the lowest possible level within the grass-roots so as to ensure that policies and strategies are relevant to local health needs.

iv. Alternative contingency strategies should be formulated since planned strategies are expected to operate in a future which is always subject to uncertainty. Such alternative strategies must be supported by contingency operational plans which can be put into effect quickly, if the need arises so as avoid crisis management.

## 3.4 Operational Health Planning

As described in the foregoing, the main function of strategic planning is to give a united direction to national health development. Strategies and policies furnish the framework for further planning. To be effective, they must be followed by operational planning which considers the detained activities, the very “nuts and bolts” as it were, required for the execution of the health programmes at the local level. A strategy may be good but could fail woefully because of poor “tactics”, a military term which is defined as “the action plans by which strategies are executive”. There are many examples of excellent strategic plans which have failed because of poor planning of the tactics or actions required for their execution. Operational planning is thus also known as “tactical”, “action”, “implementation” has also been used (WHO, 1981).

Operational planning has been described as a “process by which decisions are reached on the actual changes in the pattern of service” (DHSS, 1976). They contain very detailed proposals for the provision of specific health programmes and services. Such plans formulated detained objectives and timed targets as opposed to general goals proposed by strategic pans.

Operational planning requires the use of "functional analysis" techniques by Reinke et al in 1973 and further refined by Parker (1981).

## A. Functional Analysis Technique

This is a very detailed and systematic analysis which examines the following questions.

i. What type of services would be required to fulfill the targets set?

ii. What health activities and specific tasks are involved in providing the identified services (i.e. the activities are carefully dissected out into the component tasks)?

iii. Who should be assigned to carry out the tasks and when should the tasks be executed?

Functional analysis breaks down the health service activities systematically into their component procedures and tasks. To reduce the incidence of protein energy malnutrition by 50% in children less than 5 years old in Ibarapa Local Government Area, the health service components or "functions" required are nutrition education, general health education, maternal and child health care (MCH), simple curative services, environmental health services and communicable diseases control. With regards to the MCH component, all the three subjects of that function contribute to the objective – immunisation, maternal care and child care. With regards to the latter two, distinct service activities are required – home visiting and clinic care. Further analysis reveals the array of procedures which are carried out during the clinic visit. Each procedure can be broken down into multiple specific tasks. For example, "counseling and education" require counseling about routine care of the child, the need for immunisations, an appropriately balanced diet, and personal hygiene and what to do to obtain prompt treatment if the child falls ill. This is not illustrated in the service procedure and in the service task; these include activities such as training, supervision record-keeping, maintenance of equipment, etc. The analysis considers and formulates output objectives. These are quantitative estimates of the services required in terms of volume and coverage i.e. number of visits to be made, frequency of contacts e.g. daily, weekly, etc. This is followed by an allocation of activities and tasks among the different category of health facilities and manpower. Thus, a major bye-product of the exercise is the development of procedures, standards of performance and of job descriptions for all categories of staff. The analysis also facilities the identification of training programmes if necessary.

Functional analysis continues with a quantification of all material and financial resources needed per service and supportive activity, including the time requirements of each activity. Thus, another useful bye-product is a detailed schedule of activities i.e. time-table. It should be obvious from this description that such a detailed functional analysis provides the health planner with an opportunity to confront situational realities by responding appropriately to local circumstances.

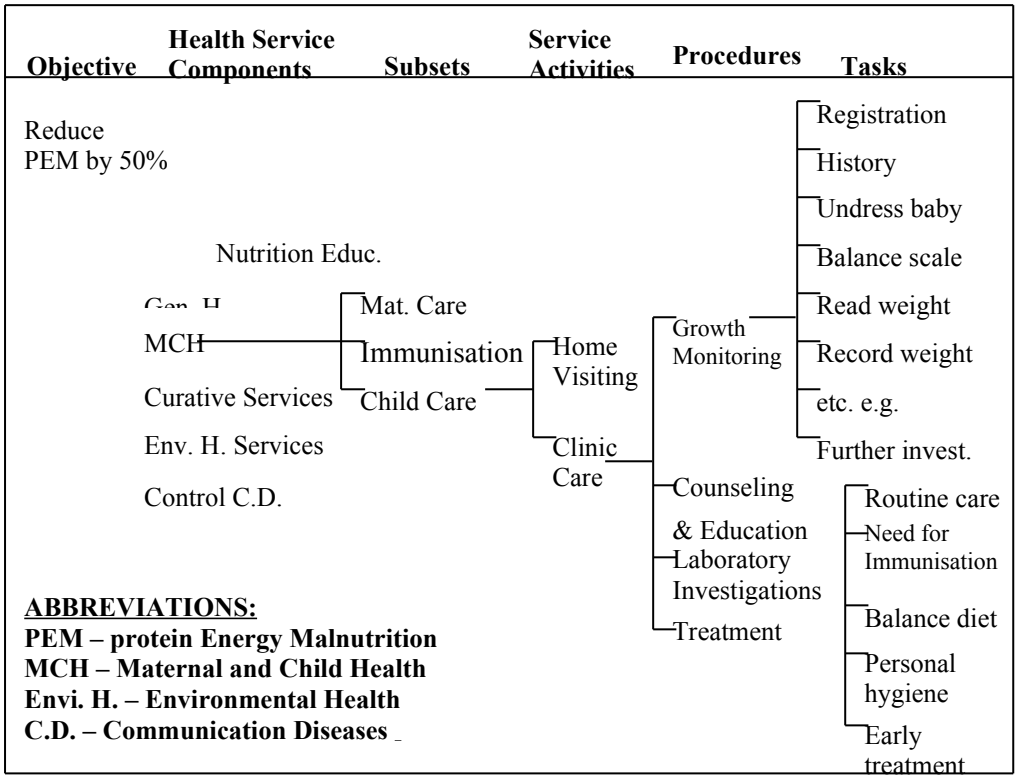



**Fig. 3 A functional Analysis of Service for Malnutrition**

## B. Operational Planning at the Regional Level

Under the guidance of strategic national planning, health planners in the middle or intermediate level such as regional Ministries of Health faced the challenge of formulating tactical operation plans which attempt to reconcile the political and financial responsibilities of the central government with the needs of the local health services. In other words, national strategies are translated into action plans to solve regional problems. At this level, operational plans also seek to establish mechanisms for forging intersectoral coordination between various governmental agencies in the same geographical region.

### C. Operational Planning at the Local Level

it is at the local level (be it within the health sector or in the community) where policies and practical realities meet that the need for detailed operational planning becomes most pressing and crucial. Operational planning for primary health care, for example, should ideally be formulated at the local government level. This district level is most sensitive to local health needs, can respond more readily and to changes in local circumstances and can most effectively ensures the participation of the community in the planning process and so ensure "bottom-up" planning. This is equally true for operational planning with health facilities. For instance, in planning for a new diabetic clinic in a hospital, it is the planners within the hospital itself who will be most familiar with local hospital needs, hospital policy, local hospital culture and practices and the demands of the local internal environment milieu within which the clinic will operate.

## 4.0 CONLUSION

Planning is essential for the successful management of health programmes. It is the most basic of management functions, preceding all others as all health managers plan. A manager that fails to plan, is planning to fail.

## 5.0 SUMMARY

In this unit, we have gone through the basic elements of management which is planning, it is expected that the knowledge acquired from this unit should influence your personal life positively in four daily endeavours.

## 6.0 TUTOR-MARKED ASSIGNMENT

How can inadequate health planning affect its implementation?

## 7.0 REFERENCES/FURTHER READING

DHSS (1976). *The NHS Planning System (The Blue Book).* London HMSO.

Knox, E.G. (1979). *Epidemiology in Health Care Planning: A Guide to the Uses of a Scientific Method.* Oxford: Oxford University Press.

Olumide, E. A.; Okediji, S.O. and Asuzu, M.C. (1986). *Action Plan for the Proposed Primary Health Care Programme in Ibarapa Local*

*Government Area, Oyo State.* Unpublished Monograph, Department of Preventive and Social Medicine, College of Medicine Ibadan: University of Ibadan.

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# UNIT 2 HEALTH CARE STRATEGIC PLANNING PROCESS

## CONTENTS



## 1.0 INTRODUCTION

This unit 2 is the concluding series of health planning and planning techniques. It is also looking at planning as a process. Since planning is a process, and if these processes are followed, then the manager will achieve his goals. No doubt you are going to study some basic things that will change your performance drastically. It is good for you to pay a keen attention to the subject matter.

The planning processes are essentially the same for both strategic and operational health plans. Planning requires a systematic approach i.e. the process involves a series of systematic stages. However, we must caution that planning does not consist of moving rigidly up a static stairway of steps. In practice, the continuity of the process may be constrained at any points by environmental factors, and may not therefore proceed in the cyclical form. Steps may be carried out simultaneously, some may be omitted entirely due to obstructions while others may be delayed or may be repeated more than once. In other words, planning is a dynamic movement back and forth between various stages of the process, culminating in a purposeful projection of actions

to achieve pre-determined goals. It is however necessary to describe it in stages, in order to provide a general framework or outline of what needs to be done to ensure a systematic approach.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define health care strategic planning process
- describe the health care strategic planning process
- discuss how to make planning effective
- explain the troubles of innovation as a manager.

## 3.0 MAIN CONTENT

### 3.1 Organising for Planning

The first stage in the process consists of organising for planning, also known as "planning the planning". During this stage, the planning team is assembled and prepared for the task ahead.

The detailed composition of the planning team will vary with the level at which the plan is being formulated. Invariably however, members of the team should include individuals who are familiar with the community for which the plan is being made. The team requires individuals with expertise in planning, preferably with a background in epidemiology and the social and behavioural sciences (Knox, 1979). Some expertise in Health Economics would also be useful. Also required are individuals with sufficient power and authority to ensure that the decisions taken will be implemented. When planning at the local level, it is particularly important that the local community be represented on the planning team. This brings an important realism into planning and ensures local commitment right from the start. For instance, when an operational plan was being drawn up in 1986 for the implementation of primary health programmes in Ibarapa Local Government Area, Oyo State, the core planning team consisted of the Chairman of the local government, the most senior community midwife, nursing sister, the most senior health superintendent, a community leader and a consultant community health physician (the author), who served as Chairman of the team. It was found that it was easy to gain consensus in such a small team. Other specialists could be co-opted as required, if necessary (Olumide et al., 1986).

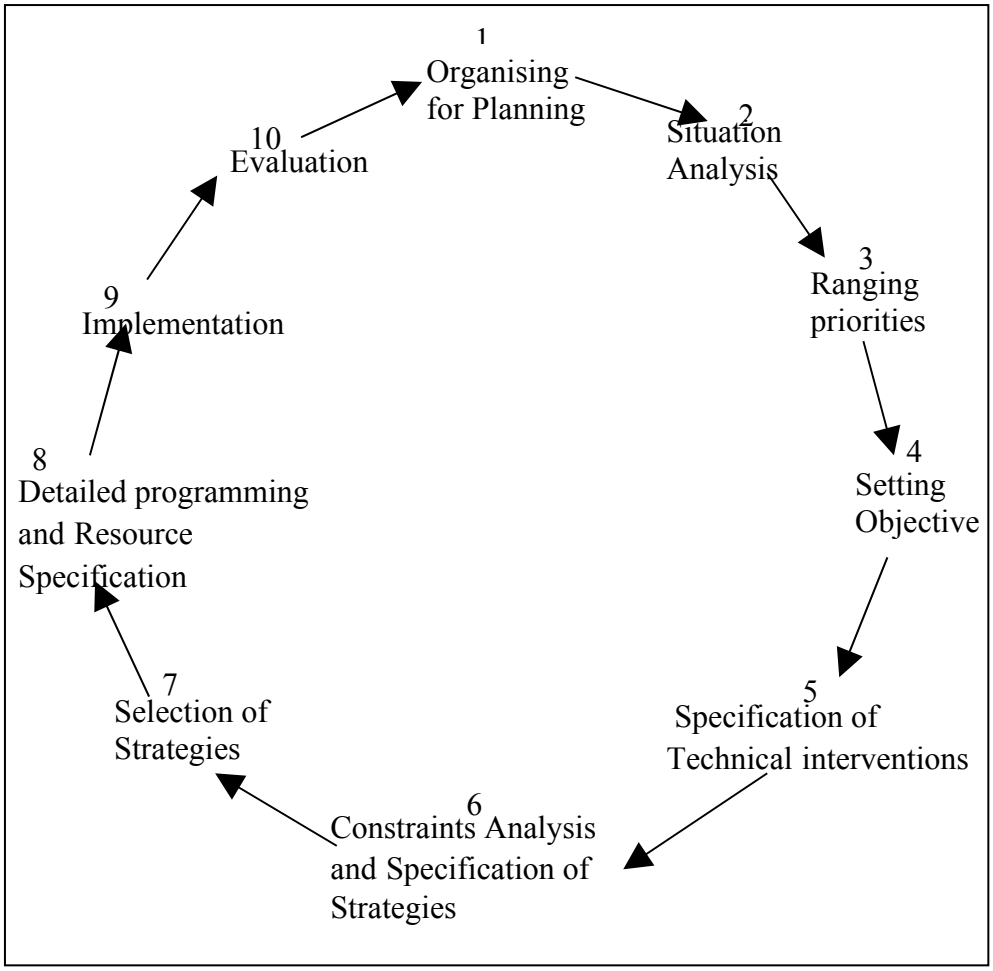


**Fig. 4 The planning cycle**

During this stage in the process, steps should be taken to ensure that the team is familiar with the methodology of planning through workshops and short training programmes if necessary.

### 3.1.1 The Situation Analysis

The main purpose of this stage of the process is to determine the most common health and health related problems and the population groups which they affect, the factors which contribute to the development of the problems and to identify obstacles and constraints to the improvement of health care. The situation analysis requires a definition of the common health problems in quantified team, for example, incidence and prevalence rates. As was previously described, it also requires forecasting of situations which are likely to have direct or indirect implications on health and health care in future e.g. changes in the economy, building of a new dam, etc.

Depending on the planning level, the situation analysis involves an appraisal of the past and current national, regional and local health policy. These are the problems areas to receive priority attention and the desired focus of programmes, and should serves as guidelines.

**Descriptive information is also collected on the:**

- Demographical situation i.e. population size, distribution and characteristics e.g. literary levels, common occupation, etc.

- Socio-economic situation e.g. principal economic activities, agricultural and food production patterns and distribution, levels of income etc.

- Geographic situation i.e. physical characteristics, water use patterns, communication, transportation, etc.

- Epidemiological situation i.e. pattern of disease distribution, rate of occurrence, cultural and behavioural determinants of disease, sickness and health behaviour, etc. specific health services and facilities, their accessibility and utilisation i.e. coverage (the proportion of those who need a service who actually receive the service), management of the health services, presence of intersectoral linkages. etc.

**Sources of Data**

In Ibarapa, the required information was obtained over a period of about four months from several sources. We examined existing records in health facilities, records in the birth and death registry at Igbo-oral, census records, as well as data from specific studies which had been conducted previously for other purposes. We also mounted a special cross-sectional descriptive survey during which relevant information was collected from the community. The establishment of a formal system for the collection of such information on a regular basis would reduce the need for such special surveys and would ensure that the required information is readily available at all levels. A detailed description of the survey techniques used for the collection of data is outside the scope of this presentation.

Having obtained comprehensive information on the prevailing health situation in Ibarapa, our next task was to arrange the identified health problems in order of importance.

### 3.1.2 Specification of Priority Health Problems

This step was informed by the fact that the resources which we were expecting for the implementation of our plans were presumed to be insufficient for us to address all the health problems which we had discovered.

We use the following criteria to set health problem priorities.

i. Disease prevalence.
ii. Social importance i.e. who sees the health problem, the health worker, community or both?
iii. Age group commonly affected.
iv. Sequelae (severity complications).
v. Feasibility of technical intervention required.
vi. Cost of control.
vii. Economic importance i.e. effect on national productivity.

An appropriate scoring system was devised to "weigh" each health problem with respect to each of the above criteria. At the end of the exercise, the following emerged as the top ten health problems requiring priority attention, in order of importance in Ibarapa.

xi. Diarrhoea diseases
xii. Malaria
xiii. Acute respiratory infection
xiv. Measles
xv. Poliomyelitis
xvi. Malnutrition
xvii. Onchocersiasis
xviii. Dracontiasis
xix. Tuberculosis
xx. Intestinal helminthiasis

To this list we added maternal problems associated with child-bearing. We were constrained by funds to address the rest of the planning exercise to the first six priority problems only.

### 3.1.3 Specification of Desired Objectives

For each priority problem, we set objectives in terms of the specific results to be achieved e.g. proportional reduction in incidence of the disease. These were guided by our own personal experience of the disease control in the field, given the prevailing conditions. We were also guided by reported experiences of other workers in similar

situations. We took care to see that our objectives were realistic, specific, measurable, and expressed a time element e.g. “to reduce the mortality rate due to diarrhea diseases in children fewer than five by 40% by the year 1990, at the rate of 10% reduction annually”. Our next task was specifying how this would be achieved.

### 3.1.4 Specification of Technical Interventions

For each desired objective, alternative technical interventions which were required to make the prescribed impact on the health status of the community were specified in terms of desired proportional increase in coverage e.g. “to increase coverage with potable water from 22% to 50%”. These technical interventions consisted of appropriate promotion, preventive, curative and rehabilitative services which would result in the desired changes.

### 3.1.5 Identification of Constraints to Implementation and Alternative Strategies for Circumventing the Constraints

For each technical intervention specified, the major obstacles, problems, bottlenecks and constraining factors which were likely to impede its implementation were identified. These generally were resources and operational deficiencies which had been identified in the health system during the situation analysis.

We then identified various management and other strategies or approaches which could be used to circumvent or neutralise the effect of the identified constraints. In general, these were well-accepted approaches to the provision of Primary Health Care (PHC) e.g. community mobilisation, intersectoral collaboration, appropriate technology, the use of village health workers, home visits, mobile clinics, improving training improving supervision, introducing community financial schemes, etc.

### 3.1.6 Selection of Priority Strategies

The strategies were evaluated and selected on the basis of their perceived cost-effectiveness, feasibility, cost-efficiency, logistical requirement, etc. Economic evaluation techniques are invaluable tools for the objectives selection of priority strategies.

This marked the end of our macro-planning activities. We then embarked on detailed programming and resources specification, otherwise known as micro-planning, action, operational or implementation planning.

### 3.1.7 Detailed Programming and Resource Specification

This stage involved the translation of the interventions and strategies through the techniques of activity analysis and task analysis into specific activities and tasks to be carried out by the health system, and other sectors and the community i.e. we identified the activities required for the execution of each strategy and we clearly specific what exactly was to be done, by whom, where it should be done when and with what resources.

For each direct health activity, for example, growth monitoring, we considered the support services which would be required in terms of training, supervision, monitoring, and logistics.

### 3.1.8 Out-Put of the Planning Process

The exercise produced a detailed plan of work which clearly specified the objectives to be attained, activities to be executed, standards and procedures, who was responsible for each task, the time of execution and completion and the resource and budgetary requirements for each direct task and support activity.

Planning does not really end at this stage. It is important, particularly at the local level that the planners should also participate in the implementation and evaluation of the programmes. The planning cycle thus continue through implementation and evaluation, during which valuable information is collected. These are fed-back for the improvement of the next planning cycle (figure 4).

## 3.2 Making Planning Effective

Ineffective planning has been ascribed to various factors including the following:

- Lack of real commitment to planning by managers at all levels: it is so much easier and probably more interesting to manage crises than to think rationally by planning.

- Lack of meaningful, feasible and verifiable goals and objectives.

- Lack of a hierarchical approach to the development of plans for example plans at different levels do not “fit” each others i.e. they are not formulated under a unified direction, there is a hierarchy of plans and objectives.

- Non-participation in the planning process. Consultations should be made with appropriate officers when plans are formulated for programmes which come under their jurisdiction.

- Failure to develop sound strategies based on an accurate scanning of the environment.

- Excessive reliance on past experience and failure to take account of current and future changes in the environment i.e. failure of accurate premising. There is indeed a limit to which change can be predicted since the future cannot be known with total certainty.

- Resistance to change. It has been said that to plan is to change. Indeed, it is well known that people resist change. The eternal words of Machiavelli as stated below, throws some light on the subject.

## 3.3 The Problems of Innovation

"It ought to be remembered that nothing is more difficult to take in hand, more powerless to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things. This is because the innovator has for enemies, all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents who have the law and tradition on their side, and partly from the incredulity of men who do not really believe in new things until they have had a long experience of them."

This is equally true for the health manager as it is for the recipients of the services. In order for the health system to survive and to be relevant in the changing needs of the society at any point in time, it must itself respond to change. Thus, health care managers have the important responsibility to nurture among their subordinates a welcoming attitude towards innovation (the use of new ideas) and towards creativity (the ability to develop new ideas). Creativity facilitates the total process of management but it is particularly useful in planning and particularly in developing countries where obstacles and constraints to effective planning are boundless.

## 4.0 CONCLUSION

Change is necessary and it must happen. A manager must welcome change at any time because innovation is a criterion to the survival of any organisation. Planning should always be made to meet the changing demands of the consumers if health service must be relevant.

## 5.0 SUMMARY

Two major types of plans may be distinguished by their nature and by the scope which they cover. Strategic health planning is largely concerned with general considerations such as the establishment of health priorities, practicality and feasibility of various types of investment proposals over a long period of time. They provide a policy framework for the formulation of short-term operational plans. The latter which is problem oriented, pay greater attention to detailed programming of activities, indicating how resources are to be utilised within a short period of time.

In order to be useful as a management tool, planning must be approached in a thorough and comprehensive manner. It is an exciting, dynamic and a challenging process, requiring considerable creativity particularly in a developing nation such as ours. However, it is a time-consuming and laborious process which must not be under-estimated.

Attempts have been made in this module to simplify the planning process by reducing it methodically to its very basic elements. The process consists of a series of systematic and dynamic stages – organising for planning the situation analysis, specification of constraints to implementation and alternative strategies for circumventing the constraints, selection of priority strategies, detailed programming and resource specification. The unit describes how each stage was carried out in a real-life setting at the local level.

A successful, effective and well-managed programme cannot be achieved without meticulous planning.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Why should the manager of health planning make his plan relevant to his health consumers?
2. How can a health manager makes his health plan effective to the members of the society and the health workers in that location?

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## UNIT 3 HEALTH PLAN IMPLEMENTATION

**CONTENTS**



## 1.0 INTRODUCTION

The process of planning helps the health manager to decide on the best course of action to take and the various tasks to be undertaken towards the attainment of the goals and objective of the organisation. Several health plans have been formulated in the countries of the West African sub-region dating from the colonial era. However, experience in many countries in the sub-region has shown repeatedly that many well planned health programmes fail to meet expectation because of failures in implementation. Putting a plan into action through implementation is a delicate process, requiring paying careful attention to the implementation functions - organising, staffing leading, and controlling the activities of the health team. Successful implementation also depends on adequate budgeting and funding of the programme. This module introduces the various management activities required for successful implementation of health programmes and discusses the organising and control functions in detail. Budgeting and staffing activities are discussed in greater detail in another unit of the text.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify the function of management which deals with the execution of activities
- outline the role of organisation, staffing, leadership, supervision and control in the efficient implementation of activities
- discuss how to organise and coordinate the activities of a health team
- describe the common obstacles to effective organisation and coordination and discuss how to avoid them

- identify the elements of the staffing function.

## 3.0 MAIN CONTENT

As described in a previous units, a well- formulate health plan specifies the detailed resource requirements for implementations of the programme. The first stage of plan implementation is to mobilise and deploy all these resources effectively. This is the organising function of management which concerns the development of a formal structure of relating people and other resources in such a manner that they all contribute maximally and cohesively to organisational effectiveness.

## 3.1 Organisation and its Purpose

The planning process produces a detailed plan of work to be done by the various members of the health team. When more than one person is involved in achieving a common objective, their group effort must be organised or pre-arranged if it is to be maximally successful. Thus, in order to ensure an equitable division of labour and co-ordination of the efforts of all members of the team for maximum effect, order is imperative in the assembly of personnel. In a typical health facility, these personnel belong to a variety of different professional groups, with their diverse skills, carrying out various and often quite complex activities to meet the needs of patients and clients who come with various demands. In such a complex organisation, order is absolutely imperative. This order is the result of the process of organising human resources. There should be an organisational structure or organogram, which is the network of relationships among personnel. The organogram is a diagram indicating the various departments and how they relate to each other.

The purpose of organising, therefore, is to arrange or place resources in the best possible position to obtain maximum corporate benefit from individual efforts. Good organisation reduces friction, promotes harmony, avoids duplication and conflict, optimises the utilisation of talents and facilitates the cost-efficient realisation of the goals of the organisation.

The organisation's functions of management principally involve the:

- delineation of authority or power,
- delegation, assignment or distribution of responsibility for carrying out specified tasks,
- deployment of the resources required for achieving the assigned responsibilities,

- development of formal mechanisms for coordination of the various activities.

The result of the process is "the organisation" the personnel employed and the network of relationships among them.

The organisation has been described as a social system in which people interact with one another and there is the division labour, authority structure, the personality and attitudes of personnel, etc. thus, the formal organisation of resources and activities provides a formal framework through which each human organisation develops a culture of its own, that is, its own customary and traditional way of doing things which new members must learn in order to gain acceptance. It is a well- known fact however, that human interaction can and does develop outside this framework without any influence. The phenomenon, of the "informal organisation" might develop side by side with the formal organisation and might impede the attainment of the formal objectives.

In the designing an effective formal organisational structure the health care manager must try to minimise the development of a potent informal organisation. Guidance is provided by the well-known principles of organisation.

## 3.2 The Principles of Organisation

Organisation theorists have taken two main approaches to the subject, the classical approach and the newer approach, each placing emphasis on different aspects of the organisation. The classical theorists like Fayol (1937), Urwick and Gulick, (1937) have provided the following principles:

i. **Objective -** the organisation should have clearly confined objectives and the objective of each group of tasks must contribute to the objectives of organisation as a whole. These objectives range from the more general objectives at the higher levels to narrower and more specific objectives at the lower levels.

ii. **Authorities -** each person in charge of a group of task must be given enough authority to enable him achieve his objective, that is, he must have the right to act or exact action from others. This authority must be commensurate with the responsibility. In addition, the organisation should have one supreme authority. There should be a chain of superiors with clear lines of authority running from the supreme authority, down through the various levels of the organisation (the scalar chain of command).

iii. **Responsibility -** the person in charge is answerable to someone in authority. This is responsibility –an obligation created by the use of authority. The manager is accountable to his superior for the execution of the assigned duty.

iv. **Unit of command -** each group of tasks must have only one person in charge, and each person should be accountable to only one superior, that is, an individual must be accountable to only one superior and no more.

v. **Specialisations -** related functions or tasks should be grouped together. The group of activities engaged in to form organisational units is called "departmentation". Division could be done on the basis of purpose (function) (e.g. Health, Education, Agriculture), or (e.g. Secretarial Services, Finances, Engineering), or persons served (e.g. infants, under 5, mothers) or area serviced (Oyo, Lagos, Delta) and combinations of these. The various units must have one manager in charge. Specialisation facilitates work efficiency.

vi. **Span of control -** in general, no person is expected to control more than six immediate subordinates whose work is inter-related. In reality, the span depends on several factors e.g. the levels, type of activities, ability of personnel; etc.

vii. **Short chain of command -** the chain of command runs from the supreme authority at the higher organisational level through the various levels to the lowest. This principle is direct and there should be few levels of supervision between the supreme authority and the distortions of communication.

viii. **Balance -** reasonable balance must be maintained between the functional units of the organisation flexibility, centralisation as opposed to de-centralisation; etc.

ix. **Co-ordination -** health workers do not individually perform all the activities required to get the work done, and it is therefore necessary to fit together all the sub-tasks necessary to accomplish the overall work objectives. This is done through the process of co-ordination. The purpose of co-ordination is to integrate the tasks which are separated by the division of work such that the tasks are performed in logical sequence, that is, in synchrony. The activities of each member of the team, e.g., an EPI programme are more successful if community mobilisation proceeds by sterilisation of the bowel, etc.

Co-ordination may be achieved through various mechanisms which may be grouped into two:

- Voluntary co-ordination in which each team member co-operates and adjusts his activities to synchronise with those of others. This requires a high level of commitment and motivation.

- Directed co-ordination in which team members are persuaded to integrate their efforts through the use of hierarchical structures, and the application of administrative measures which are usually supplemented by creating special lateral integrating committees.

In hierarchical coordination, activities are linked by putting the health workers who perform them under the authority of one supervisor. Thus the district team leader wields authority over the members of the district primary health care team and thus co-ordinates their work. The same applies to the head of a clinical department in teaching hospitals, etc. This is usually supported through the use of administrative mechanisms in the from of rules, regulations, and formal manuals of procedure to guide the performance of routing activities and save efforts in finding solution to routine problems e.g. admission and discharge procedures, accounting procedures, procedure for the requisition of drugs and supplies, etc.

When the inputs of many departments are required, the use of lateral integrating committees at various levels promotes communication between the various sectors and department or units involved. For example, the finance and management committee of a teaching hospital in Nigerian on which the principle officers in the various division of the hospital are represented provides strategic lead ship for the hospital, supervising the use of allocated resources and providing central co-ordination and control. Similarly, all heads of departments of the hospital are members of the medical advisory committee, physicians and non-physicians alike. This type of arrangement allows each member of the team to contribute to decision-making and problem-solving, thus enhancing their commitment to the decisions taken and facilitating the accomplishment of planned objectives.

Application of these principle results in what is essentially a pyramidal hierarchical line-staff organisation which is governed by strict rules and regulations.
The line organisation is made up of personnel whose work contributes directly to the organisation goals, (e.g. A, B, C, D, E, F, G, and H). The staff organisation is situated in an off- line position as adjuncts to the office of the executives (e.g. I, J,). They assist the line in various ways

either by providing general " house – keeping" services such as secretarial, statistic, legal, purchases and supplies, accounting, etc. or administrative services e.g. planning, budgeting and personnel management. Personal assistants, advisers etc. are examples of staff offices.

The New Approach to administrative theory may be broadly classified as:

iv. the behavioural approach,
v. the decision- making approach,
vi. the mathematical or biological approach.

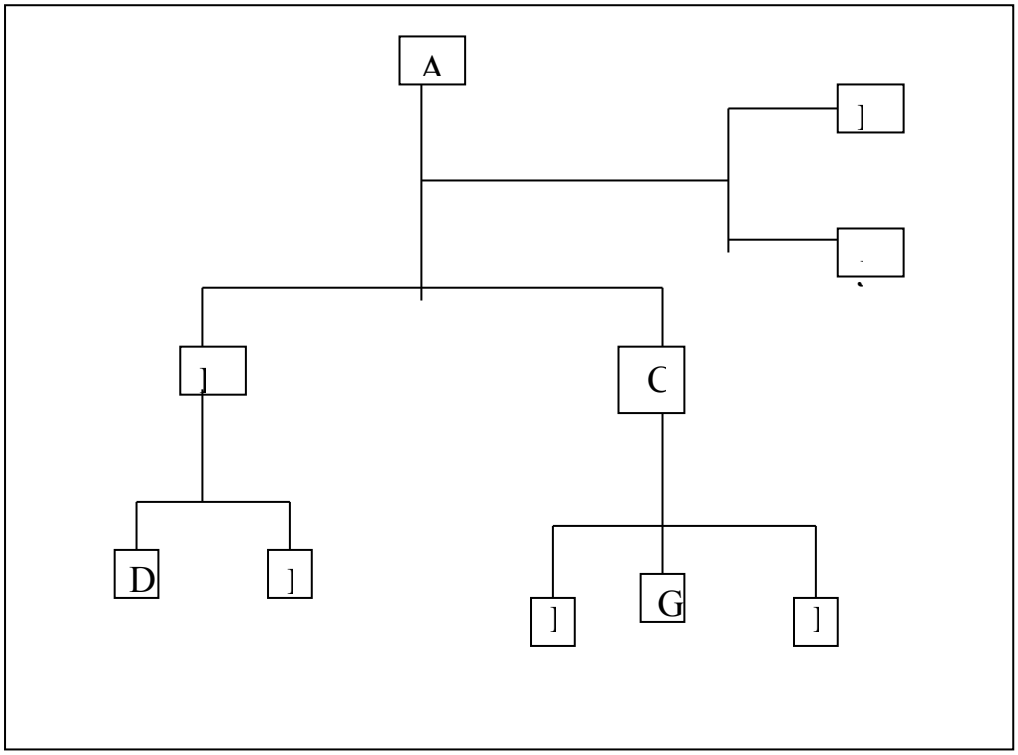


**Fig. 5 A pyramidal Hierarchical line-staff Organisation**

**The Organisational Structure of a Teaching Hospital: A Case – Study**

The University College Hospital (UCH), Ibadan, the premier teaching hospital in Nigeria, was commissioned in November 1957. the main function of the hospital are to provide facilities for teaching of health personnel, to conduct research into the health problems of the nation and to provide services at an appropriate level to facilitate the performance of its basic functions of teaching and research. In collaboration with the College of Medicine of the University of Ibadan, UCH runs

undergraduate medical programmes and provides comprehensive facilities for training and clinical exposure of postgraduate resident doctors in all specialties of medicine. The hospital also training and clinical exposure of postgraduate medical programmes and provides comprehensive facilities for training and clinical exposure of postgraduate resident doctors in all specialties of medicine. The hospital also trains nurses, midwives, medical laboratory technologists and medical records officers. It runs various courses including programmes for a variety of health tutors, community health officer, post-registration courses for nurses and continuous education courses for nurses and midwives in administration and management. There are 812 in-patient beds, with an annual turn-over in excess of 10,000 patients yearly, and 75 consultative out-patient clinics which serve well over 200,000 patients a year. The total staff strength is about 3,500. The Federal Ministry of Health is the supervisory ministry for UCH.

The supreme authority for strategic management of the affairs of the hospital is vested in the Board of management which by decree Act of parliament (No. 74, 1952, Decree No. 741979, Decree No. 10, 1985) is empowered to formulate hospital polices, direct, supervise and control the administration of the hospital and facilitate the execution of the functions of the hospital. Members of the administration, representatives of various interests in the community, the Federal and State Ministries of Health, the professional groups (Nigeria Medical Association, etc. are Board Members of the University of Ibadan. The Chief Medical Director, the Chairman and the Hospital Medical Advisory Communities and the Director of Administration also serve on the Board, the latter serves as secretary to the Board. Currently, the Chairman of the Board is a senior distinguished public health physician.

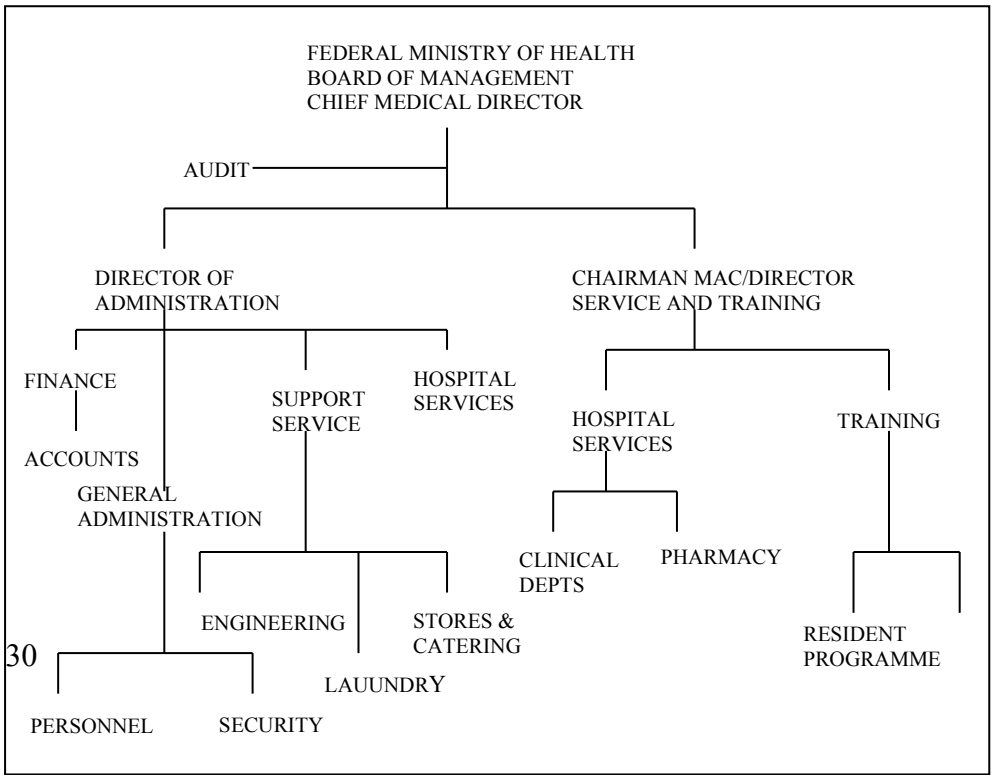

**Fig. 6 Organisational Chart of the University College Hospital, Ibadan**

The Chief Medical Director (CMD) is the Chief Executive and the Chief Accounting Officer. Reporting directly to the CMD are the Chairman, Medical Advisory Communities (CMAC) who is also the Director of Clinical services and Training and the Director of Administration (DA). The CMAC is assisted by an Assistant Director of Administration of Clinical Services and Training. The CMAC supervises the administration of all clinical and training activities in the hospital. As shown in the organogram, he oversees other paramedical departments. The postgraduate residency DA is responsible for supervising the general administration of the hospital. He/She is assisted by several Assistant Directors in charge of the various departments and units as indicated in the organogram e.g. Finance, General Administration, Hospital Services and Support Services including Engineering, Laundry, Stores and Supplies and Catering.

As in most modern health care organisations, departmentation in UCH is done on the basis of function e.g. Medicine, Surgery, Engineering; Laundry etc. without exception, all heads of the departments are professionals with specialist qualifications in their area of expertise. Some departments are subdivided into specialised units headed by specialists e.g. Department of Preventive and Social Medicine with eight specialised units, each reporting to the head of Department.

The organogram indicates that the Nursing Services Department is supervised directly by the DA to be and not by the Director of Clinical Services. It is assumed that the aberration dates back to the days when the chief executive of the hospital was a non-physician in hospital

administration, the "House Governor" to whom all units reported, and to the increasing agitation of nurses to be seen as professionals in their own right, separate from and independent of supervision from doctors.

There are several lateral integrating committees designed to co-ordinate the work of the various departments and units. Apart from the Board of Management, the other major coordination committees include, the Hospital Finance and Management committee, the Medical Advisory Committee, the joint UCH/ UI Manpower Development Committee, the Revolving Fund Committees, the Tenders committee and the Residency Training Committee. In addition to these statutory committees, the principal officers of the hospital hold ad-hoc meetings with heads of departments, consultants and the various unions as the need arises. The need for good organisation and effective coordination of activities is no less in smaller health facilities such as general hospitals and the health centers as is explained in the next section. Another case study will clarify the important points.

## 3.3 Organising and CO-Ordinating a Health Programme – A Case Study

Dr. Elcro is surprised by the high number of new cases of measles reported among pre-school children in Ilaje – Ese in Odo Local Government Area. Most of the cases were located in the town of Itebu-Manuwa and its environs, a town which had served as a center for the Expanded Programme on Immunisation for the LGA during the past two years. Together with the District Team Supervision in the LGA and other health workers, Dr. Elecro drew a health plan to control the epidemic. The objective of the plan was to immunise all pre-school age children in the LGA against measles.

In implementing the plan within Itebu-Manwa health district Mrs. Adetomi, the community health officer in charge, preceded as follows:

i. She called a meeting of members of the district health team. The team critically reviewed all aspects of the plan and found that was no need to make any changes.

ii. Mrs. Adetonu and her team prepared an action or implementation plan. They carefully itemised the planned objectives and wrote out the detailed activities required to attain each of them e.g. health talks to all expectant mothers on measles, immunisation, etc.

iii. Using the job description of each staff as a guide, Mrs. Adetomi wrote out an activity schedule or time-table, stating what should be

done, who should do it, when it should start and when it should be completed.

iv. For technical activities such as storage and injection of the vaccine, the team agreed on the procedure to be followed.

v. She assigned responsibilities to staff based on their job description.

vi. She directed that weekly reports be sent to her on each Friday by the staff.

vii. She arranged for a staff meeting for review of progress made and for coordination of activities every Tuesday.

viii. She communicated all the decisions taken in a memorandum to the staff.

Mrs. Adetomi's task was to organise the team's activities and to ensure that these activities were carried out in the correct sequence so as to achieve the timed targets. Her work was facilitated by the use of the job descriptions and by the preparation of an activity schedule. Coordination would have been impossible if her directives were not communicated, understood and acted upon by her subordinates. This is facilitated by clear channels of communication which should be depicted on an organisation chart. The weekly reports and meetings also provided valuable information for a feed-back, sharing of ideas, clarifying roles and preventing conflicts, collective decision-making and effective coordination.

## 3.4 Obstacles to Effective Organisation

The theories described in the fore-going are widely used as guidelines rather than as immutable principles. In organisation just as in managing, there is no "best way". What works well will depend on the contingencies of the situation, that is, the objectives, the work entailed in reaching them and the quality of personnel available to carry out the job.

To organise effectively, health managers must strive to avoid common mistakes such as the following.

i. Failure to plan programmes and specify objectives and strategies.

ii. Failure to clarify organisational relationships and roles so as to avoid conflicts and chart should be clearly understood by all

personnel and through the use of clearly written job descriptions for all personnel.

iii. Hoarding of authority and failure to delegate it. Delegation has been described as "the process of entrusting sub-ordinates with task, the subordinate exercises his own initiative. To do so, he requires to be given some authority, that is, the manager must entrust the sub-ordinate with the power which he needs to get the work done. However, many managers fail to delegate authority. This could be due to the various reasons such as mistrust of the ability of sub-ordinates, non-receptiveness to their ideas, insecurity and so on. The good organisation must learn to delegate authority while still sharing accountability and maintaining control, though remotely. The advantage of delegates far outweighs its disadvantages, if any.

iv. Granting of responsibility without commensurate authority.

v. Over-organisation leading to bureaucratic "red-tapism".

vi. Organisational inflexibility when there is an adaptation to a changing environment and new situations.

vii. Failure to design formal mechanisms for co-ordination of the activities of various departments.

All these alone will not ensure that the programme will be successfully executed. For effective implementation, the functions must also receive due attention i.e. staffing, leading and controlling the activities of the team.

## 3.5 Staffing

The definition of management which states that management is "getting things done through "PEOPLE" seeks to emphasise the importance of the human element in management. Its importance cannot be overstated. While it is essential to have an appropriate organisational structure for effective management, it is even more vitally important to fill the position on the organisation chart with the right people and to create a work environment which will ensure that people work harmoniously as a team towards organisational goals while also accomplishing their own personal goals. There is no doubt that the quality of a health programme is greatly affected by the resources which are available. However, while money and materials may be available, the personnel though often scarce are important because neither money nor materials alone can provide health care. It is only people who can make things happen. Only people can set action in mot or to perform the required

health care tasks. Only people can use the material and financial resources which are available to provide health care. Thus, there is no doubt that people are essential resources. Further more, the largest proportion of most health programme budgets are usually spent on salaries and personal emoluments. This underscores the importance of acquiring the skills which will ensure cost-efficiency and cost-effectiveness in the use of this most important and expensive resources.

Managing people is much more complex than managing financial and material resources. It is an understatement to say that getting the best out of people demands much patience, understanding and great skill.

All the basic processes of management are involved in managing people- planning organising staffing, leading, controlling, and evaluating. These are all inter-related, each function forming part of a large system, the human resource management function.

The last figure demonstrates the elements of human resources management and illustrated how these elements relate to each other, and to the overall management function as a whole. As shown in the diagram, human resources management is an open system. The major components of the system include manpower planning, organisation, staffing, leading and controlling of human resources.

## 4.0 CONCLUSION

Many well-planned health programmes fail to meet expectation because of failure in implementation, organisation, staffing, leading and supervision which play crucial roles in the successful execution of the planned activities. Effective organisation is guided by classical and modern principles.

## 5.0 SUMMARY

This unit deals with organising the health team's activities, principles of organisation, organising and coordinating a health programme, obstacles to effective organisation and staffing. It is hoped that the unit must have enhanced your knowledge.

## 6.0 TUTOR-MARKED ASSIGNMENT

Discuss the factors which contribute to leadership effectiveness with special reference to the regular problems of the health sector.

## 7.0 REFERENCES/FURTHER READING

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## UNIT 4 MAINTENANCE OF HEALTH PERSONNEL THROUGH EFFECTIVE LEADERSHIP CONTROL

**CONTENTS**

## 1.0 INTRODUCTION

This unit is on maintenance of health personnel through effective leadership and control. Achieving the goals of health sector is a team approach so the significance of a virile team leader cannot be undermined.

## 2.0 OBJECTIVES

At the end of this unit should be able to:

- outline factors which contribute to leadership effectiveness with special reference to the particular problems of the health sector
- explain the concept of supportive supervision
- describe how to apply appropriate managerial tools and techniques for the supervision of the health team
- list the factors that contribute to poor work performance in the health sector and describe how to avoid them.

## 3.0 MAIN CONTENT

### 3.1 Leading the Health Care Team

The maintenance component of human resource management is concerned with creating and maintaining a work environment which will stimulate individuals working together in groups to perform maximally on the job and to remain highly motivated and committed to attaining the objectives of the organisation.

A health care team consists of a group of individuals working together to provide health care to individuals families and the community. There are many different kinds of health teams but in general the team is heterogeneous, being made up of different cadres of health workers-professionals, auxiliaries and ancillary staff who have no direct health

care functions. It is no small task to create a harmonious, willing and purposeful work team out of such a heterogonous group. This requires the skills of leadership. Leading is concerned with developing good interpersonal relationship between health team managers and members of the team. A good leader therefore must understand human behaviour patterns as well as what motivates people to strive willingly to perform maximally.

**Human Behaviour:** it must be understood that while health organisations exist to provide health care the individuals health workers in the organisation also have their own individual needs while at the same time they are contributing to the objectives of the health care system that requires a deep understanding of human behaviour on the part of health managers.

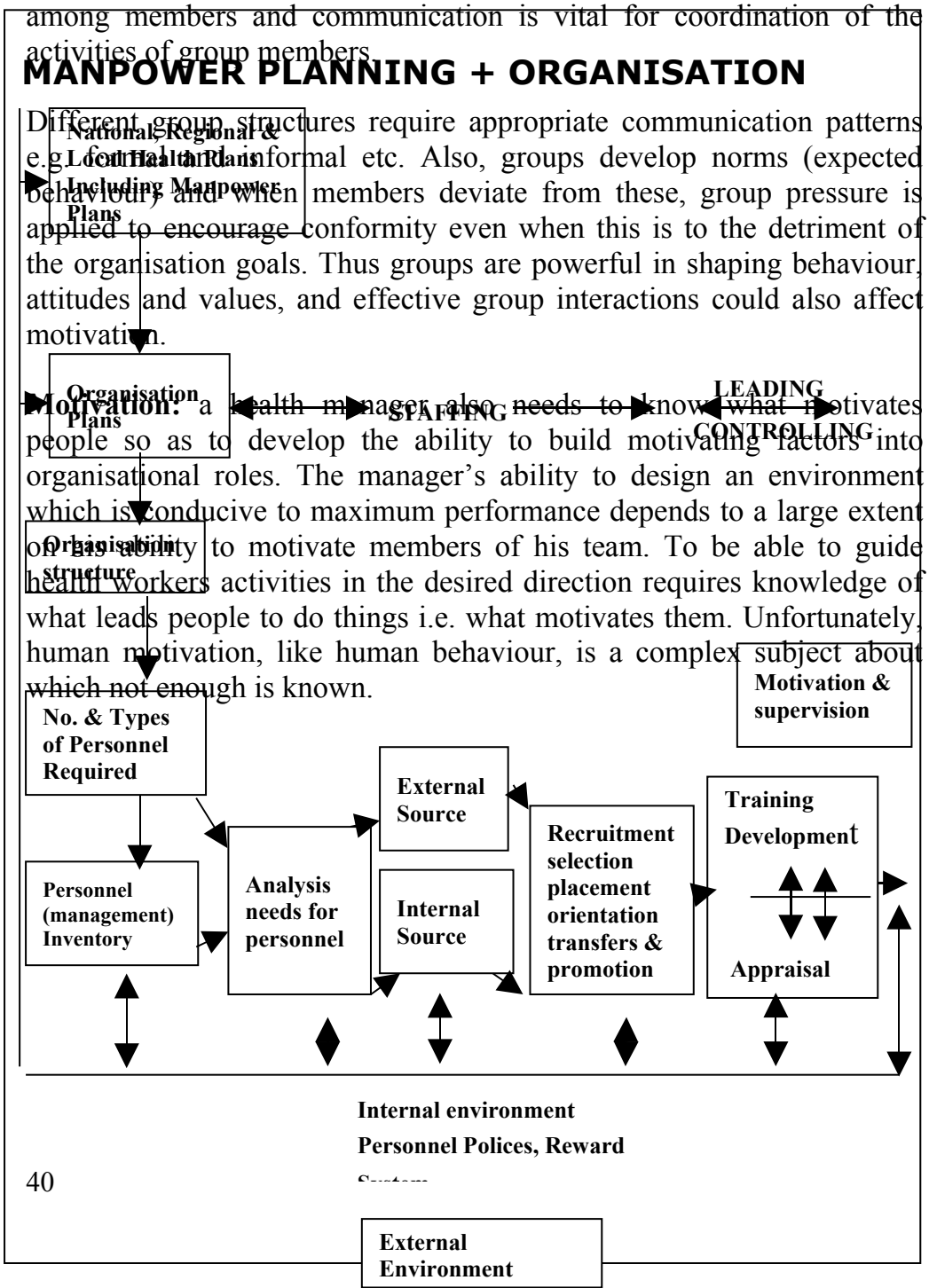
Health workers are human beings and have various roles to pay as member of a broad social system. There is no average person. Each person is a unique complex individual, each with his own unique personality, needs, ambitions, potentials, etc. Thus, principles and concepts although generally true, have to be adjusted to fit specific situations. People value their individual's dignity and like to feel important. Therefore, people must be treated with respect to matter what their position is. Each person has his own contribution to make and each is indeed important. Furthermore, each employee is a total person who is influenced not only by the work environment but also by the external environment. Managers are well advised to adopt this holistic approach of considering the whole person when dealing with health workers.

A variety of contrasting human behaviour pattern has been described by Portez, Sohein and several other researchers. Douglas McGregor, professor of Management at the Massachusetts institute of Technology believed that the human relations approach to personnel management failed because most managers believed in what he called Theory X.

Theory X assumed that people dislike work, people must be forced to work and with punishment to get them to work; people prefer to be directed and do not willingly assume responsibility. He urged managers to adopt a different assumption which he called Theory Y i.e. that people like to work and that work is as natural as play or rest; people work best under self-direction and self-control; people like to assume responsibility and seek responsibility and many have a high capacity to exercise ingenuity and creativity in the solution of problems. Adoption of Theory Y encourages participative leadership with emphasis on teamwork. This approach encourages a free flow of communication upwards, downwards and laterally. Time does not permit a description of the large number of other models which have been proposed.

No single model is sufficient to explain the full range of human behaviours. People behave differently in different situations and even in the same situation at different times. Neither do all people react in a uniform manner when given the same situation. Furthermore, people often want more than money from a job, preferring to develop their capabilities and potential in addition to other rewards.

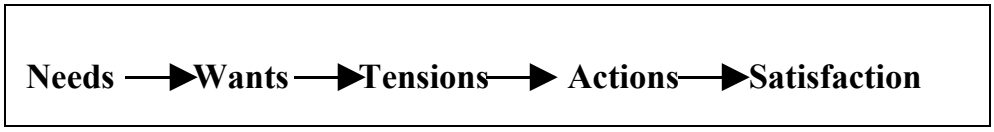
It has already been stated that a health care team consists of individuals working together as a group to achieve a common goal. An understanding of group behaviour is therefore required for effective management and particularly for its leadership component. The health manager must remember that a group though small is a complex social system, and it exhibits many of the characteristics of a larger social system. Groups normally required interaction and communication among members and communication is vital for coordination of the activities of group members.




**Motivation:** a health manager also needs to know what motivates people so as to develop the ability to build motivating factors into organisational roles. The manager's ability to design an environment which is conducive to maximum performance depends to a large extent on his ability to motivate members of his team. To be able to guide health workers activities in the desired direction requires knowledge of what leads people to do things i.e. what motivates them. Unfortunately, human motivation, like human behaviour, is a complex subject about which not enough is known.

**Fig. 7: A System Approach to Personnel Management (Adapted from I. Koontz, O' Donnel and Weihrich, McGraw-Hill, 1980)**

Motivation is the inner impulse which drives a person to act in a particular way. Human motives are based on needs whether consciously or sub-consciously. Reduce to its simplest terms; motivation involves a chain reaction. An individual's felt needs give rise to wants or goals, which in turn create sufficient tension which drive the individual, culminating in action to satisfy the needs. In reality, the chain is not really as simple as the diagram portrays.



## The Need -Want - Satisfaction Chain

A word must be said about the "carrot and stick" approach to motivation i.e. the use of rewards and penalties to induce desired behaviour. It is often forgotten that rewards and punishment are still strong motivators. However, it must be emphasised that they are not the best kind. Punishment often gives rise to retaliatory negative behaviour such as indifference, dishonesty, etc. On the other hand, the "carrot" in the form of money is still considered to be an important motivator. This is more so in these days of structural adjustment. Unfortunately, however, almost everyone gets the "carrot" through automatic seniority rise in salary and other monetary bonuses which are not really based on performance. Furthermore, money will motivate only when the amount is far in excess of a person's income. If not, money is more likely to prevent dissatisfaction than to act as a motivator.

**Nature of Leadership:** one approach to motivation is to achieve it by providing inspiring leadership. Leadership has been defined as the ability of a manager to influence people to work with a sustained zeal towards the achievement of group goals. Leaders guide, direct and precede members of a group. They place themselves in front of the group so as to facilitate and inspire the progress of the group towards its objectives. They do not stand behind to push forward. If employees always work to their maximum capability, there would be no need to develop the art of leadership. Unfortunately, few work with sustained zeal in the absence of leadership. The function of leadership is to persuade employees to contribute willingly to the objectives of the organisation to their maximum capability. Leadership and motivation are closely interrelated. While it is difficult to describe the nature of leadership, it is clear that effective leaders seem to have the ability to inspire and motivate their followers. They usually have charismatic qualities which induce devotion, zeal and loyalty from their followers.

**Leadership Styles:** considerable work has also been done on leadership behaviour and styles. Leadership styles have been popularly classified on the basis of how leaders use their authority. Based largely on the work of Rensis Likert, three broad leadership styles are now recognised.

i. Autocratic (Exploitative Authoritative)
ii. Democratic (Benevolent Authoritative)
iii. Anarchic (Laissez-faire)

Most people prefer to work under a democratic leadership. Autocratic leadership tends to discourage initiative. However, situational factors

dictate which type of leadership is most appropriate. The work to be done and the kind of people who are expected to carry out the work decide which style is appropriate. Highly technical tasks, emergency situations, unskilled and unreliable workers usually require an autocratic leadership style. An anarchic style may be used when leading a highly competent, reliable and dependable team. The skilled leader varies his style to suit the particular circumstance.

**Team Building:** this section of the discussion must not be concluded without a mention of the importance of the team development process. The word 'team" conjures an exciting image of energy and skill, a flowing energy of the skills of individual members of the team working together synergistically to achieve goals which would be beyond them as individuals. Team-work is extremely important in health care. It is most unlikely that one person can acquire all the skills necessary or even have enough time to do everything that has to be done to provide care even at the primary level. The response of a casualty unit to a major accident is a fine example of team-work. Effective teams have clear goals, competent and committed members who collaborate in a continuing effort to improve their performance in achieving organisational goals. The team development process is a conscious effort on the part of managers to harness this potential of people to work cooperatively together. This can only be achieved by managers who take into consideration the various points which were made earlier.

**Communication:** communication is involved in all components of management and integrates the managerial functions. As already mentioned, it plays a particularly important role in the leading function.

## 3.2 Controlling Human Resources

The plan of works to be done on a health programme provides an invaluable framework for directing and controlling the activities of the health team. By specifying targets as well as responsibility for programme activities, it makes it easy to direct and to control. Control cannot be achieved without plans, the more comprehensive the plan, the easier it will be to control the programme.

**Objectives of Control:** in general, control activities ensure that the work as expected and the expected amount and quality of work are done. Specifically, control is undertaken in order to:

- ensure that the work is done according to the objectives set and the activities planned within the time allotted and with the resources provided
- ensure that the resources provided are adequate and are being properly used.
- identify the causes of work deficiencies
- recognise gaps in health workers knowledge and understanding
- recognise and reward good work

**The Control Process:** the control process consists basically of four steps:

- establishing standards
- measuring performance against these standards
- feedback of information on the deviations found, if any, and
- correcting the deviations

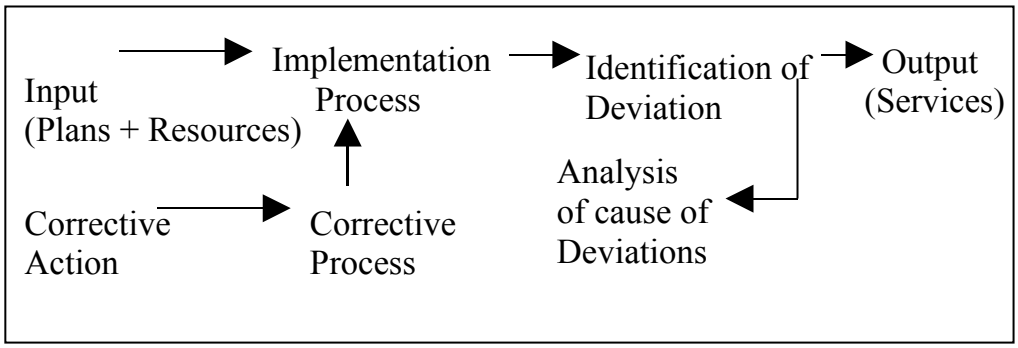



**Fig. 8 Control process**

Standards are criteria of performance i.e. they express the level of performance which is desired. Standards are verifiable objectives which may be expressed in qualitative or preferably, in quantitative terms and are normally to be found in a well written plan of work.

Performance is measured and deviations from standards are identified during the process of supervision. Effective control depends very much on achieving quick feed-back of information on the deviations found so as to facilitate early correction. The modern concept of control emphasises the need for an "early warning" control system which will provide prompt indication that corrective action is required before too much damage has been done. In other words, modern managers need a control system which can anticipate errors before they occur. Newer techniques are still being refined for future direction. So-called "freedforwarding" control.

**Some Tools and Techniques for Control**

A variety of traditional and modern tools and techniques are usually employed in the various elements of the control process. These include the following:

**A. Traditional**

i. Plan of work – weekly, monthly, and annually, medium-term, etc.
ii. Clear instructions, preferably written.
iii. Work schedules – shows what a worker is to do, and they day and time it is to be done.
iv. Job description.
v. Staff lists.
vi. Check lists.
vii. Records of usage and activity (clinic attendances, inventories, immunisations given, etc.
viii. Reports of progress and activity – weekly, monthly, quarterly, annually, etc.
ix. Visits by the supervisor – nothing can take its place! Unannounced visits used routinely on a regular basis are not good management practice. During the visit, the supervisor can make:
a. personal observations (use check-list)
b. personal consultation
- with staff members
- with the community

x. Budgets and expenditure against budget
xi. Operational (Internal Audit)

**B. Modern**

i. Operations research.
ii. Time – event network analysis e.g. PERT (Programme Evaluation and Review Technique).
iii. Standing orders.

Most of these tools are used during the process of supervision to achieve control.

**Effective Supervision:** supervision is the process of keeping surveillance over the performance of assigned tasks. Supervision is supposed to improve the functioning of the supervised person and consists of a variety of functions besides the "control" aspect so often associated with limited interpretations of supervision. The supervisor

derives authority from superior knowledge, more access to pertinent information and logistical support. The supervisor represents the point of contact between the workers and the "system".

The studies of several researchers, notably Rensis Likert and Daniel Katz have provided valuable information on the type of supervision which is likely to prove most effective. The researchers compared the type of supervision used in highly productive work groups as opposed to work groups whose productivity was low. One of the most outstanding differences found was that supervision of the former was more 'employee-centered" and the supervisors spent more time in informal discussion with their subordinates than in the later group. In other words the supervisors were much more supportive in the highly productive group.

It is very important that the health manager understands the various styles of supervision (autocratic, democratic and anarchic) so as to be able to choose an appropriate style. These various supervisory leadership styles have been described earlier. In general, the democratic style is usually preferable. However, it has been found that it is best to vary one's style to suit the particular circumstances of the moment as discussed earlier. These characteristics of the personnel involved and the nature of the work to be done should determine the supervisory style employed. Complex and difficult work or situations which require quick decision-making such as an emergency for instance usually demand the autocratic style. On the other hand, personnel who are highly skilled, reliable, experienced and are willing to take responsibility usually respond very well to an anarchic style of supervision.

**Preparing for a Supervisory Visit:** supervisory visits should not be undertaken without careful planning before-hand. The effective supervisor should:

i. prepare a time-table of supervisory visits i.e. prepare a yearly schedule and plan carefully for the visit before going,
ii. before leaving for the visit, review records and reports from the unit of district to be visited and identify any special, areas in which special assistance is required,
iii. prepare a check-list of things to be specially checked.

**During the visit**

i. observe activities being carried out,
ii. discuss with the health workers,
iii. discuss with the community, if necessary,

iv. discuss your finding with team, analyse together and problem discovered and suggest solution,
v. take action to correct the work that has been poorly performed bearing in mind the common causes of poor work performance.

**Some Causes of Poor Work Performance**

Effective health managers must be aware of the fact that poor work performance is not always the fault of the health worker. Common reasons include the following factors:

i. insufficient training,
ii. insufficient resources,
iii. no clear job descriptions,
iv. unclear instructions,
v. no reward for good work,
vi. non-supportive supervision,
vii. team members may not be working well together due to inter-personal problems and conflict,
viii. personal problems of the health worker which may not be readily discernible to the casual observe.

As prevention is usually more cost-effective than cure, even in management, an effective supervisor should be very well-prepared to pre-empt the occurrence of the common impediments to effective performance.

In conclusion, supervision entails a wide range of responsibilities and requires substantial resources, including time, effort and materials. Several factors contribute to the weakness of existing supervision system. The least of which is the failure to identify the various components of supervision, e.g. who will accomplish each task and what method will be used. Other factors include the dearth of appropriately trained supervisors and shortage of resources, especially transportation which is particularly important for supervision of primary care programmes in outlying districts.

Finally, the most effective control is to ensure that only well-trained managers are put in charge of health programmes. Learning should start at the undergraduate level as management skills are required. More deviating from plans will not occur if an enterprise is well-managed. Well-trained managers make fewer mistakes and achieve health programme objectives most effectively and efficiently.

## 4.0 CONCLUSION

Supervision entails a wide range of responsibilities and requires substantial resources, including time, effort and materials. Several factors contribute to the weakness of existing supervision systems. Failure to identify the various components of supervision, who will accomplish each task and what method will be used are some of the factors.

## 5.0 SUMMARY

Many well-planned health programmes fail to meet expectations because of failure in implementation. Organisation, staffing, leading and supervision play crucial roles in the successful execution of planned activities. Effective organisation is guided by classical and modern principles. The effective organiser ensures that organisational relationships and roles are clarified, delegates authority and responsibility freely whenever necessary, based on the job descriptions of staff, is flexible and readily adapts to a changing environment, and ensures that formal mechanisms for coordination are put in place.

Effective manpower planning, recruitment, selection, placement and orientation ensure that the right people are available and are assigned to execute the tasks to be done. Enthusiasm and sustained commitment to the work is stimulated and maintained through skilled leadership which depends on a good understanding of human behaviour and group behaviour. The effective leader ensures that sustained zeal and commitment is stimulated through the application of motivators, avoidance of dissatisfaction, the use of appropriate styles of leadership and a cultivation of empathy and objectivity.

Effective execution also depends on the use of modern and traditional control tools and techniques to ensure that the planned work is done correctly and is of the right quality. The importance of supervisory visits and of adequate preparation so as to make the visits effective is highlighted. Finally, it is emphasised that the resources needed for supervision are quite substantial and require special budgetary provision.

## 6.0 TUTOR-MARKED ASSIGNMENT

The effective leader ensures that sustained zeal and commitment are stimulated through the application of motivators, avoidance of dissatisfaction, the use of appropriate styles of leadership and a cultivation of empathy and objectivity. Discuss.

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## MODULE 2

Unit 4 Management of Drugs and Consumables I

# UNIT 1 HEALTH CARE FINANCING

## CONTENTS



## 1.0 INTRODUCTION

Health care is a basic human need, but in most developing countries the prospect of achieving even minimal adequacy of health and health services is a distant goal. The basic health needs of vast numbers of people remain unmet and the pursuit of improving the standards of health has become a primary concern over recent years. In response to the array of problems besetting the health sector, member states of the WHO declared in 1977 that the main social target of governments and WHO should be “the attainment by the citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life”. The following year, a conference in Alma-Ata, in the former USSR, declared that Primary Health Care (PHC) was the key to attaining this target.

The Nigerian Government has embraced the main propositions of these two concepts and accorded them a place of primacy in the National

Health Policy which was adopted in 1988. Similarly, other governments in the West African sub-region have adopted PHC and given it a pivotal role in their health policies. The attainment of the objectives of the policy, in line with Health For All by the Year 2000 (HFA 2000), will require not merely significant increases in the resources made available to the health sector, it will also require that those resources are used to the best effect.

The global economic situation has changed drastically for the worse since the goal of HFA was adopted. The recession has had important implications for adjustment policies which governments had to adopt in order to maintain a reasonable balance between economic growth and social development. This has not been an easy task. With mounting external debts, resources used to service these debts have been diverted from other areas of government expenditure and hence dividing foreign exchange earnings, the ability of government to import drugs and medical equipment has been severely limited.

The state of health sector financing has frequently been presented in the form of its most obvious problem – pervasive underfunding and insufficiency of financial resources to provide pertinent services for everyone who needs it. For example, in Nigeria, only about 2 percent of the total federal budget is allocated to health. The proportion of the budget allocated to health increases at lower levels of government, reflecting differing levels of responsibility. In absolute terms, the yearly amount is grossly insufficient to run the projects and programmes of the sector, a situation compounded by the inability of the sector to get yearly increases that keep pace with the inflationary rate. Thus, in real terms, what the health sector gets for its activities has been on the decline over the years. Added to this is the problem of low budget realisation. The actual disbursement of allocated funds at the federal level averages only about 70 percent. The rate is far less at the state and local government levels. Health managers not only have to contend with very meager financial resources, but also do not know how much will be released and when. A crowning problem of health sector financing in Nigeria is the inefficiencies in the application of the limited and scarce resources at the disposal of the sector.

Gross resource deficiency, however, is merely a symptom of the interplay between more complex problems. Health planners and policy makers are currently beset with seemingly intractable problems of reconciling powerful conflicting pressures and trends. Some factors contribute to the need for reduced expenditure on health services. For example, ambitious promises inherent in the HFA and PHC initiatives, have led to expectations of rapid improvement in health conditions. The situation is exacerbated by a reluctance to shift resources away from

established programmes and improve the way in which scarce resources are utilised.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify factors contributory to the underfunding of the health sector in West Africa
- list the sources of finance available to government for funding the health sector and the contribution of each in sustainable health sector funding
- list the private sources of funds available to the health sector
- evaluate the effectiveness of the different sources of finance for sustainable health care delivery.

## 3.0 MAIN CONTENT

### 3.1 Health Financing Mechanisms

The various mechanisms by which the health resources are generated are conventionally classified in the literature as either public or private sources of finance.

#### 3.1.1 Public and Quasi-Public Sources of Finance: General Tax Revenue

General tax revenues are used in almost every country of the world to finance certain components of health care. They are the most important sources of financing in developing countries of West Africa. Despite the relative importance of taxes as source of revenue in Nigeria for instance, the low tax ratio has meant that it is insufficient by itself to be sole source of support for health care. Indeed it is only in the last few years, with the introduction of VAT, that tax revenues became substantial.

General tax revenues are not the most reliable source of finance. This is largely the result of such factors as the low political priority frequently given to the health sector in national budgetary determination, the instability of the national economy (being dependent upon taxes from our imports and exports), the frequent use of public expenditure as a tool of macroeconomic policy and the fluctuating relationship between budgeted funds and their actual availability.

There is a limit to what can be collected in tax revenues without damage to the wider economy, and without conflict with wider health policy

objectives. Taxes, which make the poor poorer, could seriously damage their health status. There are many other fields of socioeconomic developments which compete with health sector for funds, and which can give substantial support to health policy objectives.

### 3.1.2 Deficit-Financing and the Use of Inflation

Many governments supplement the use of general tax revenues by deficit financing, that is, the decision to borrow and spend funds in the present, and repay them over some period of time, more often than not from general tax revenues. Deficit finance may be raised nationally or internationally, through mechanisms as the issuing of bonds or certificates or long-term low interest rate that needs to be paid on the loan.

Deficit financing is typically used for specific projects (e.g., hospital construction) or for the construction of health-oriented environmental projects (e.g., water and sewerage systems). Unless such projects contribute directly to increased output which can be taxed to serve the debt, the deficit must be repaid from general tax revenues. Thus, the agency doing the deficit financing must be endowed with the authority to impose additional taxes or fees, or be able to reallocate current tax revenues in order to service the debt.

Deficit finance may be raised from abroad in the form of bilateral or multilateral aid loans. Although useful for many developing countries in helping to develop and expend health structures, excessive reliance on deficit financing in the past for the economy as a whole is burdening many countries with the problems of debt repayments in the present.

Inflation may also be employed as an alternative means of financing health services. When governments spend more than their revenues, they may finance this deficit by printing more money. However, without a simultaneous expansion in output, the increased volume of money leads to price increases (i.e. inflation). While generally seen as being more attractive than the use of direct taxation, the burden of this form of financing is highly uneven, falling more on the elderly with fixed incomes and those with inflexible wages.

In principle, it is possible to use inflation as an effective means of financing health activities. In practice, however, many countries lack the ability to keep inflation under control, and the use of such mechanisms often results in hyperinflation with serious consequences for economic growth savings and investment.

### 3.1.3 Earmarked Taxes

Most general tax revenues and most deficit financing are collected, organised or utilised at national level. In addition, national, state and local governments may obtain funds for the health sector from some form of tax "earmarked" for the health sector. The problem with this form of taxation is that it is often difficult to administer, may be politically unpopular and may be regressive if taxes are levied on items such as beer, cigarettes, recreational events or foodstuffs. Such taxes may be progressive if they are imposed on luxury products that are purchased primarily by the more affluent sections of society.

An advantage with the source of finance is that it is possible to assign a tax to the funding of certain activities or sectors. Not a major source of finance in most countries, it is observed that it is practical to earmark tax revenues for health on certain goods or activities which may have adverse health implications (e.g., alcohol, tobacco, etc.).

### 3.1.4 Social Insurance

Social insurance is a system of financing health care, and invalidity and old age support for employed workers by imposing mandatory insurance payments as a percentage of their wages, and by imposing on their employers a similar or somewhat higher payroll tax. The payments are referred to as social insurance contributions and qualify those covered for a range of benefits. Governments may, in some instances, also contribute to the schemes. Workers may have to pay a user fee in addition to their wages deduction. In their capacity as employers, governments may either run their own social insurance schemes or contract such schemes out to private insurance companies.

Premiums may be calculated on measure of income or wealth other than wages, such as the value of harvests in some countries. In countries, where economics are largely agrarian based, problems can result from the fact that cash income is available only at certain times of the year.

The total contribution is (in theory) determined actually, on the basis of the incidence of illness, the conditions of eligibility for benefit and the value of those benefits. Individual contributions are not determined, however, on the basis of expected risks or claims, but in proportion to income.

The principal problem with this approach is that, it is easiest to cover the population in regular paid employment, which in developing countries, may be as little as 5 – 15 percent of the schemes that will first extend coverage to include the families of workers already covered. If conditions of eligibility for benefit or the value of those benefits do not

change, this will require an increase in the total premiums paid into the scheme. These extra funds may be found from increased employee or employer contributions. Alternatively, the burden of support may be transferred from employment-base contributions to general tax revenues, in which case social insurances schemes may evolve into national health insurance systems approaching universal coverage. Although initial coverage of insurance schemes is usually small, the tendency is almost always towards expansion.

Critics of social insurance argue that it creates inequalities in the availability of medical care, and undermines both public and private health care by competing with these sectors for limited supplies of real medical resources. Another problem with insurance is its tendency to promote or reinforce high cost, hospital-based, doctor-centred, curative health care (a particular problem in the countries of Latin America where social insurance has come to play an increasing dominant role in health sector development).

It is often argued that social insurance reinforces the poor distribution of resources between rural and urban areas since it provides extra funds for the health care of employed workers concentrated in the larger cities and that consequently the large rural populations of developing countries are even further handicapped. Social insurance schemes frequently result in marked inequalities in the quality and the quantity of services available to those covered by the schemes and those who are not. Some development economists comment that there is usually a separate and well developed medical service for those covered by social securities; it is generally provided through special hospital and health centres in which the quality of service is higher than that available to the non-insured population. Insured workers and their dependants obtain more resources per capita than those not covered by insurance, since the funds for these schemes originate from taxes on the most productive sectors of the economy (e.g., industry, commerce or mining), rather than the poorer agricultural sector in which the majority of the population is employed.

However, on the positive side, social insurance can channel extra funds into organised health services, and to some extent, by relieving the pressure on ministries of health to devote resources to urban workers; it can indirectly make more resources available to those in rural areas. Governments have, in many instances, shown an increasing favourable attitude to the development of this approach to financing. Nigeria is at the verge of starting a national scheme.

Although many variants are in existence today, medical care under social insurance is often identified as falling into one of two categories:

the indirect system in which the services of pre-existing public or private facilities and medical staff are purchased on a fee-for-service, capitation or reimbursement basis, and the direct system which provides treatment through staff employed by and facilities operated by the social security system.

### 3.1.5 Lotteries and Betting

These may be employed as sources of earmarked income for health and social services in developing countries. Often administered by quasi-public bodies under national or local government regulation, these typically non-profit making schemes rarely constitute an important component of overall health sector finances. Frequently supported largely by the incomes of the poor, and thereby constituting a form of regressive taxation, these schemes, with their high administrative costs, often have low net yields (once prices are deducted).

## 3.2 Private Sources of Finance

### 3.2.1 Private Health Insurance

Private Health Insurance differs from social insurance in two basic ways. First, private health insurance typically does not include pensions for invalidity or old age. Secondly, the premiums charged for private health insurance are not based on pooled risks, but on personal risk characteristics and the determined likelihood of illness in the individual or group covered. As a result, premiums are likely to vary for different individuals or groups.

Schemes may be profit making or non-profit making, and may be organised by groups, the latter often benefiting from lower premiums from lower per capita administration costs as well as a degree of risk sharing. In many countries employers act as an organising body for health insurance, and may even pay part of the premium as a fringe benefit. However, in order to reduce the excessive utilisation that may result from insurance coverage, individuals are often required to pay for part of the cost of medical care on a direct fee-for-service basis. Private health insurance schemes are much more common in developed than in developing countries. A few insurance firms in Nigeria offer health policies to their clients. The problem associated with this form of finance include low coverage due in part to the high cost of premiums in relation to income, or the exclusion of certain groups from coverage as “bad risks”

### 3.2.2 Employer-Financed Schemes

In some instances, employers may directly finance health care for their employees. They may, for instance, pay for private sector health services, employ medical personnel directly and provide necessary facilities and equipment. Whatever options are adopted will depend to a large extent on the type of employer or industry and the geographical location of the employer. Oil companies, mining and mineral industries are examples of the types of industries in Nigeria which provide for the health needs of their workforce. The services provided by these schemes can take many forms and may include personal preventive services, environmental sanitation and general medical services.

Employers often offer these services as fringe benefits to their workers and so, once established they may be difficult to withdraw. Benefits are seldom extended to families since employers are primarily concerned with maintaining the productivity of the workforce. In many cases in Nigeria, the primary focus of these forms of schemes is on accident prevention and occupational health.

Problems with employer-financed schemes relate to the quality of care provided, the possible fragmentation of services, difficulties in enforcing employer liabilities and the fact that viability depends upon the performance of the employing agency. This is not a predominant source of support for health in any part of the world, although employer schemes are often a precursor to national social insurance schemes.

### 3.2.3 Charitable and Voluntary Contributions

Charitable or voluntary contributions can take the form of financial support or individual donations (e.g., personal services, physical facilities, equipment and supplies) and may originate from business enterprises, wealthy families, religious organisations or private individuals. In most instances, these resources are channeled through foundations or religious bodies.

There are problems with this source of finance. For example, donors may have priorities different from those of the recipient government and may not recognise the most urgent health needs of the latter. They may prefer to finance visible evidence of their support such as physical facilities and equipment, and thereby commit the recipient government to the recurrent costs of those facilities in the future. Charitable contributions may also displace other sources of finance. For example, contributors may be eligible for tax relief and may thus reduce general tax revenues for use elsewhere.

This is not a very important source of finance any more except in the case of a few mission hospitals. They may however be useful in times of emergency and as a supplement to organised forms of health care.

### 3.2.4 Community Financing and Self-Help

PHC and HFA stress two major themes in the reorientation of health services: the mobilisation and effective application of underutilised national and local resources (e.g., organisation skills, manpower and cash) and the development of affordable and culturally appropriate delivery systems so that basic health care will become universally accessible. Consequently, government and some non-governmental agencies are turning to communities for participation in both organisation and financial support. Communal self-help is thus an increasingly important source of financial support for health services in many developing countries. Following the example of China, many countries now provide low-cost services through community-based paramedical personnel and are actively encouraging local initiatives, self-reliance and local control as important features of health service finance.

Self-help can take many forms, such as community labour, local insurance, support for volunteer health workers and drug cooperatives, while the most common forms of community financing in practice include fees, drug sales, prepayment, community or individual labour, and ad hoc contributions and fund raising. The most frequent uses of community financing are for compensation of community health workers, payment of essential drugs and construction and maintenance of health and sanitary facilities.

Community financing has been criticised on the grounds that it puts the burden of financing on those least able to afford it. It is often seen as a diversion for governments lacking the political will to generate new sources of revenue, or to reallocate existing ones. Although in some cases it may be substantial contributions, community finance is unlikely to generate sufficient resources by itself to meet the country's health needs, and should be seen as complementary to, rather than as a substitute for, other sources of finance.

### 3.2.5 Direct Household Expenditure

Ultimately, it is the household income that is the source of most health care expenditure, direct payments constitute a specific category of financing, and may be usefully considered separately. In this category are payments a consumer may make directly to health care providers for services or goods. Recent studies have revealed that this form of financing is far more common and considerably more important than was hitherto thought. The studies have also identified a significant willingness and ability to pay for health services.

Direct payments are not limited to high income groups and in many instances low income groups have been observed to devote a proportion of their income to health care, sometime displacing expenditure for other basic necessities of life.

Direct household expenditure is not independent of other sources of finance. Even with insurance coverage, there is often a requirement for some degree of co-payment, which tends to increase the amount that would otherwise have been spent on health. Health insurance benefits may also have an upper ceiling, and households may have to pay directly for their health care requirements in excess of this level.

## 3.3 Issues in Health Care Financing

Issues in health care financing centre on the dual nature of any health service. It is for both public and private good. This makes allocation of costs and benefits of health care difficult: if a particular commodity is for public good, economic theory suggests that all those concerned should bear the cost of providing such commodity. Once this type of goods (i.e. public goods) are supplied, the benefits go to all those who are willing to enjoy it. It is therefore, not subjected to any rationing procedures. It is therefore reasonable for government to provide such services on behalf of the people.

As health service is quasi public good, its cost should be borne by both the government, representing the general populace and the particular individuals involved. The central question here is: at what proportion must the burden of the cost of health care be shared between the government and the individual? Where the benefits are quantifiable, the ratio of the benefits accruing to the public and to the individual should be used.

The problem of measurement is manifested in the following. How we measure the benefits and costs to individual and the society in a good health care system will result in increase in life expectancy and increased output. Ethical issue also raised the problem of apportioning benefits and costs. For example, what is the benefit of treating a cancer

patient who has a terminal disease? Thus, intrinsic values of treating some patients are beyond the realms of economic analysis. In spite of measurement problems, cost benefit analysis is useful in some areas of health care delivery e.g. in the use of new drugs which long-run effects have not been tested beyond trial runs.

The decision on how much to charge an individual to cover his part of the costs depends on some factors among which are:

- the size of government revenue,
- the ability of consumers to pay.

While the relative size of the government revenue and hence allocation to health sector will relief/increase the burden of individuals, the ability to pay criterion may be adopted as a price discriminatory strategy, where the rich subsidise the poor.

In practice, modern resource allocation in health care is based on techniques such as operation research particularly linear and goal programming and other mathematical and statistical based techniques. Health care services in Nigeria are yet to apply some of these criteria.

## 4.0 CONCLUSION

Under-funding and inefficient resources to providing pertinent health services for everyone are common problems in West Africa and the contributory factors include:

i. inadequate budgetary allocation,
ii. dwindling foreign exchange earnings of government,
iii. competing needs for economic growth and social development.

Public and Quasi-Sources of funds are:

i. general tax revenues, which may not be reliable because of low tax ration,
ii. competition from other sectors and limit to which it can be increased without damage to health status of the citizen.

## 5.0 SUMMARY

In this unit, we have looked into health care financing especially health financing mechanisms both in public and in private with some pertinent issues related to health care financing. It is hoped that you have learnt greatly.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the factors contributing to underfunding of the health sector in Nigeria.
2. List the sources of funding health sector in West Africa.

## 7.0 REFERENCES/FURTHER READING

McMahon, R.; Barton, E. and Piolot, M. (1980). *On Being in Charge* – A Guide for Middle Level Management in Primary Health Care. Geneva: W.H.O.

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# UNIT 2 COST ANALYSIS IN HEALTH SERVICE

**CONTENTS**



## 1.0 INTRODUCTION

Collection and analysis of data on programme costs can provide considerable useful information on health services of all kinds. In addition to indicating the amount of funds (from all resources) likely to be required to continue the programmes, they can help you to assess the use of personnel in delivering the services and the efficiency of putting supplies, transport resources and other inputs to work. These results can apply to entire programmes or to specific components of specific centres, posts and other units that deliver services. While you and your associates are estimating costs, you will probably also derive additional information of practical use – for example, vaccine wastage rates in immunisation programmes.

When cost data can be related to existing or readily available information on programme performance, such coverage of the target population by a programme or by a specific delivery site, useful assessments of efficiency in an input/output sense can be made. Similarly, while examining what you are getting for the resources you use, you can often make at least preliminary judgements about who is being helped by the health programme, which will tell you something about the equity (fairness) of the health scheme.

## 2.0 OBJECTIVES

At the end of this unit you should be able to:

- explain costs
- discuss the essence of using cost data
- explain how efficiency is assessed
- describe how to assess equity and priorities.

## 3.0 MAIN CONTENT

### 3.1 Cost Classification

To estimate a health programme's costs, it is necessary to classify its components. Cost elements can be broken down into several ways, as illustrated below. A good classification scheme depends on the needs of the particular situation or problem, but there are three essential elements viz:

i. it must be relevant to the particular situation,
ii. the classes (categories) must not overlap,
iii. the classes chosen must cover all possibilities.

Economists define cost as the value of resources used to produce something, including a specific health service or a set of services (as in a health programme). Resources used for health service programmes can be described in many different ways. For example, a diarrhoea control programme might be described as using the following resources: personnel, money from external sources and mass media. These categories are well defined and their meaning is clear. However, they do not constitute a very useful way of thinking about the resources used in this programme. The main problem is that the categories overlap; money from external sources can be used to pay for personnel, and personnel are likely to be involved in mass media operations. If we add up the value of these three categories, they may come to more than the total cost of the programme.

One reason why the categories above are difficult to use is that they confuse different dimensions of sources, mixing activities (in this case "mass media") with sources ("money from external sources") and physical inputs ("personnel"). Obviously, several different classification schemes are involved here. These and others need to be looked at separately, starting with the most basic resource inputs. Examples of resources inputs include personnel, supplies and equipment.

**Classification by Inputs**

This type of classification of costs is useful and widely applicable. It groups inputs into categories in which the elements have recognisably similar characteristics, for example vehicles, personnel and supplies. If used properly, this scheme has many merits, including the following:

i. It involves a manageable number of categories, and these categories are general enough to be applied to any health programme.

ii. It distinguishes two important categories of resources, those that are used up in the course of a year and are usually purchased regularly (i.e. recurrent costs) and those that last longer than one year, such as buildings, vehicles and equipment (i.e. capital costs),

iii. It focuses attention on the operating (recurrent) cost of investments in vehicle equipment and buildings by making these into distinct categories.

Any classification requires basic definitions and avoidance of confusion. For example, more than one word can be used to refer to a single group of resources. "manpower" and "personnel" are two such words. Secondly, there are differences in the degree of details. "Personnel" can be further subdivided into doctors, nurses, administrators, and techniques. A scheme for classifying costs by inputs (with examples of each category) is shown in the chart below:

**Classification of Costs by Inputs**

**Capital Costs**

1. Vehicle: bicycles, motorcycles, four-wheel-drive vehicles, trucks.
2. Equipment: refrigerators, sterilisers, manufacturing machinery, other equipment with a unit cost (price) of $100 or more.
3. Buildings, space: health centers, hospitals, training schools, administrative offices storage facilities.
4. Training, non-recurrent: training activities for health personnel that occur only once or rarely.
5. Social mobilisation, non-recurrent: social mobilisation activities, e.g. promotion, publicity campaigns that occur only once or rarely.

**Recurrent Cost**

1. Personnel (all types): Supervisors, health workers, administrators, technician, consultants, casual labour.
2. Supplies: Drugs, vaccines, syringes, small equipment (unit cost of less than $100).
3. Vehicles, operation & maintenance: petrol, diesel, lubricants, types, spare parts registration, insurance.
4. Building, operation & maintenance: electricity, water, heating, fuel, telephone, telex insurance, cleaning, painting, repairs to electrical appliances, plumbing, roofing and heating.
5. Training, recurrent (e.g. short in-service courses)
6. Social mobilisation: operating costs.
7. Other operating costs not included above.

**Some Possible Secondary Classifications**

Describing the resources used in terms of physical inputs, as we have done above is one way of dividing them up. However, it is not the only way. Resources have other characteristics that are important. There are four other characteristics that you might find helpful in describing and assessing the costs of your programme. They are usually less important than the inputs scheme, and are explained briefly below.

### 3.1.1 Classification by Function/Activity

The first of the secondary classifications involves the kind of activity or function for which the resources are used. A Maternal and Child Health (MCH) programme, for example, encompasses a wide range of activities, such as tetanus toxoid vaccinations for pregnant women, prenatal care, supervision of deliveries and immunisation and weighing of children. For each of these activities, groups of physical inputs are required. For example, infant weighing requires personnel to do the

weighing and record the results, scales, tables, charts, building space and possibly vehicles.

The activities mentioned above for MCH are a limited set. They include only the service provision activities. Other essential activities that support and complement these which you are likely to find in most health programmes include:

- training
- supervision
- management
- monitoring and evaluation
- logistics and transport

In most cases, identifying the different functional components is straight-forward. However, it may be easy to miss some functions that are handled separately from the rest of the programme, either institutionally or financially. For example, the communication aspect of your programme may be funded or implemented outside the ministry of health and could be overlooked. If you are looking at the whole health sector and not just at single programmes, the functional breakdown may be in terms of preventive or curative programmes by the type of institution – hospital, health centre or staff training institution.

There is one other thing to be careful about when estimating the costs of multiple-activity programmes. You will have to allocate resources that are shared among the activities so that each is charged only for its proper share. This is especially important for personnel in some cases.

### 3.1.2 Classification by Level

Another way of dividing up resources is according to the level at which they are used. For most health programmes, there is an obvious hierarchy of operations. In a national programme for example, some resources are used at the central or national levels while others are used at the provincial, regional or district levels. Some are further decentralised to health facilities or to the community, village or household level. You may be responsible for, or involved in, a national programme at the central level or at any of the other levels. Where several levels are involved, you must decide for each cost analysis to decide whether you want to classify the results by level or not i.e. according to where the output takes place.

### 3.1.3 Classification by Source

The source of the resources is another very important characteristic. Contributors may include the ministry of health, other national government departments; local government bodies, international donors, bilateral donors, independent non-governmental charitable or private organisations, community groups and individuals.

You might wish to break down your cost according to source (perhaps tied to specific activities or inputs) for financial reporting, including reporting to donors, or for predicting calls on national funds in the future. From such data, you could also estimate the "multiplier effect" of external assistance, which shows whether a boost in total health spending is associated with the aid. This kind of classification is quite straight forward in principle.

### 3.1.4 Classification by Currency

Closely associated with the source of the resources is the type of currency required to purchase those resources. Bilateral and international donors, for example, very often supply goods and services that need to be purchased in foreign currency (i.e. foreign to the recipient). The distinction between resources requiring domestic currency and those requiring foreign currency is an important one, particularly in those developing countries where there is a shortage of foreign (or convertible) currency. Donor contributions are a way of causing foreign exchange shortages. However, donors may not be able to continue their support indefinitely, and it is useful to know what foreign currency burden would then fall on the government.

In a few cost studies, the initial estimates are adjusted to correct any distortions in exchange rates caused by artificially set official rates. You might need a classification of findings by type of currency to make such adjustment, along with some expert advice. The topic of exchange rates raises a question that goes beyond classification; when and how should cost values in a local currency be converted to some kind of international medium, such as the United States dollar? For internal uses of cost data, such a conversion should not be necessary, and some countries' studies have been left entirely in the national currency. However, if the results of an analysis of programme costs are to be compared with those of programmes in other countries, conversion to a common monetary measure will be necessary. To avoid possible errors from using an official exchange rate, you should consult economic specialists or officials of other agencies – for examples, the Ministry of Finance or the Central Bank.

**Using Cost Data**

Cost analysis can be helpful in meeting requirements for accountability and judging (and promoting) programme efficiency as well as achieving other goals.

**Accountability – Keeping Track**

It should come as no surprise that, as an employee of the government or of a non-governmental organisation (NGO), you are accountable to your employers (and they, in turn are usually accountable to the public) for your expenditure or the resources you use.

To meet the obligation of accountability, you need, at the very least, to:

i. know how you have spent the finances available to you,
ii. ensure that the money you control has been spent as intended.

All this might seem like a simple exercise in financial housekeeping, but failure to acknowledge its consequences can have unfortunate results. No one can just assume that budgeted funds have been spent exactly – no more and no less – and that they have been used properly. Most government and private organisations have mechanisms to protect their funds from misuse and waste. As well as responding to questions from higher levels of the administration, you can do several useful things at the district level to achieve greater accountability.

Take a moment to consider the kinds of accounting mechanisms that you have in your programme for keeping track of expenditure and minimising waste and misuse. Which of these mechanisms appear to work well and which poorly? Now, we will show you some specific steps to help you to achieve accountability, starting with a look at your budget.

At the level of the overall programme, the budget provides guidelines on how resources should be used. The budget is a document which sets out in general terms how much money should be spent on different inputs or activities. It describes planned expenditure over a defined period – usually one year, sometimes longer.

Even if you ignore this plan, others will not. Failure to stick reasonably closely to your budget is likely to cause you considerable problems. If your expenditure begins to exceed the budget, you will need to look for additional resources. This can be a time-consuming and frustrating task. And if it is not successful, the effectiveness of your programme may be seriously jeopardised. For example, if a malaria programme cannot afford to buy drugs, it will not be very successful in controlling malaria.
You may also have problems if you fail to spend the entire amount budgeted. The Ministry of Finance or other authority that controls

budget allocations may automatically reduce your future budgets on the assumption that you will be unable to use all the resources you have requested.

For all these reasons, it is desirable for budget and expenditure to be closely linked. It is, therefore, essential to keep track of what you are spending throughout the year. If you find that expenditure on a particular item is too slow, or that the budget allowance is being consumed too rapidly, you may be able to take appropriate action early to avoid a major mismatch between budget and expenditure. You might derive some guidance from past experience. Are your budgets and expenditures better or more poorly matched now than in the previous years?

There are several possible explanations or a mismatch between budget and expenditure. One is that the budget is poorly prepared; perhaps it reflects an inadequate understanding of the resources required to achieve particular stated objectives, so that it simply does not allow sufficient resources to achieve them. This may be because the total allocation is inadequate, or because the distribution of allocation resources is wrong (e.g. too much for salaries but not enough for fuelling of vehicles) and the budget is not flexible enough to be realistic. Either way, the manager is in the impossible situation of attempting to reconcile over-ambitious objectives with inadequate resources. This situation is all too often the manager's own fault, since he or she usually has the opportunity to comment on, if not design, the budget.

Another possible explanation is that the programme itself is being poorly implemented: resources are being squandered, used inefficiently, and even diverted to other uses. Finally, the mismatch may be due to unexpected changes, such as a sudden devaluation of the national currency, a rise in the price of a major input or a natural disaster.

In order to identify possible causes of mismatch between budget and expenditure, look at your expenditure in detail. First of all, study each major category of input. You might notice, for example, that expenditure on personnel has been much higher than allowed for in the budget, and realise that this can be attributed to an unexpected increase in wages. Or you may note that there has been under-spending on equipment and discover that there have been problems with importing particular items of equipment, or perhaps a shortage of foreign exchange. Perhaps, you may realise that the amount you allowed for fuel was inadequate.

If your budget is also broken down by functions (activities), you can analyse each functional budget in the same way. Did any particular function, (e.g. training) account for the total budget being over-spent or

under-spent? You might also have separate budgets for different levels in your programme (national, regional, district), or for each contributor to your programme, or for local and foreign currency. You can examine each set of budget to find out where to focus you attention when trying to improve the situation next year. In other words, there are many possible steps you can take to interpret a situation in which the budgeted and the actual expenditure are too far apart.

**Assessing Efficiency**

A health programme or service delivery unit is more efficient when it provides more beneficial effect from the use of a given set of resources. Details of effects as well as cost are found in later modules. Here, the aim is to allow health officials to make some judgments about efficiency by examining fairly simple cost presentations. They are based on "cost profiles", which show each input in terms of an absolute value and as a percentage of the total cost. (Similar profiles might break the total down by activity or by level). An example of a cost profile is shown below:

| INPUT CATEGORY | ANNUAL COST (CURRENCY) | SHARE OF TOTAL COST (%) |
|---|---|---|
| **Capital** | | |
| Vehicles | 5000 | 10 |
| Equipment | 5000 | 10 |
| Buildings, space | 5000 | 10 |
| Training, non-recurrent | 0 | |
| Social mobilisation, non-recurrent | 0 | |
| **Subtotal** | **15000** | **30** |
| **Recurrent** | | |
| Personnel | 20000 | 40 |
| Supplies | 5000 | 10 |
| Vehicles, Operation & Maintenance | 5000 | 10 |
| Buildings Operation & Maintenance | 1000 | 2 |
| Training, recurrent | 0 | |
| Social mobilisation, recurrent | 0 | |
| Other operating inputs | 4000 | |
| **Subtotal, recurrent** | **35000** | **70** |
| **Grand Total** | **50000** | **100** |

You can use cost profiles in two different, but related, ways. Firstly, cost profiles highlight the categories that you should focus on in further studies of efficiency; the larger the cost category, the more the attention it should be given, because the potential for savings is greater. For example, in the above case, if it were possible to reduce personnel costs by a certain percentage, this would have a much larger impact on total costs than the same percentage reduction in any other input. A 20% reduction in personnel costs would reduce total costs 8% (20% of 40%), but the same percentage reduction in vehicles as a capital input would reduce total costs by only 2% (20% of 105). The relative sizes of the categories might also tell you how much effort to put into estimating their costs. However, you must be careful. The inputs that seem to have the most potential for cost reduction are not necessarily those that should be cut. They may be the inputs that are already being used most efficiently, so that cutting back on them may have a drastic effect on the outputs. Even if they are not being used efficiently, it may be difficult to change them. For example, salaries may be an important input and one that is not being used optimally, but altering staff arrangements may be impossible in the short term. Nevertheless, despite these necessary qualifications, identifying the major inputs is a useful starting point for exploring the efficiency of a programme.

The second way you can use cost profiles is to compare the profiles of similar units. It may be reasonably assumed that similar units should have similar cost profiles. The units may be different health centres of different geographical areas, such as districts. Major differences in the cost profiles of similar units should prompt you to investigate further. Significant differences indicate that there may be ways of restructuring some units to improve their efficiency. In other words, you need to do further studies to establish the reasons behind any cost profile differences before you can draw any firm conclusions about what action might be appropriate.

One explanation for the differences in spending on drugs by different health centres could be that the members of staff of the health centre, with a high expenditure on drugs, are over-prescribing (prescribing more than necessary). One of the centres may have a high wastage rate because of problems of storage or theft. A look at the drugs inventory, the storage facilities and the treatment records of that centre should show you which of these the problem is. Improvements in prescription habits and drug management would be necessary to remedy these problems.

A second, equally plausible explanation is that the difference in drug expenditure is not the result of inefficiency at the high – expenditure health centre: the other centres, far from being efficient, may in fact be

unable to treat all their patients adequately, because of an irregular supply of drugs. Drug inventory checks would readily establish whether this is the explanation. The appropriate remedy would be to increase the reliability of drug supplies to those centres, which would obviously involve remedial action above the health centre level

A third possible explanation is that there are differences in the pattern of disease, or the cost of transporting drugs, or the size of the population served which explains why one health centre has relatively high drugs costs. The observed cost differences may thus be justified by the circumstances, in which case there may be little that can, or should, be done to improve efficiency.

This line of analysis points to the need for preparation of cost profiles for many or all of the service delivery units, such as health centres, within a district. Likewise, programme profiles should be drawn up within each district. If a programme covers more than one district, a total programme profile will consist of the sum of the relevant programmes in the districts. That probably sounds like large task, but in fact it should not be too burdensome. The possible benefits in the form of greater efficiency, and better health of the population, make the efforts worthwhile.

Cost analysis to improve efficiency does not stop within the use of profiles. It will also be helpful to calculate average (unit) costs, for example, cost per patient visit to a centre or cost per vaccine does in an immunisation programme. There, too, examination of "outline" – that is, the centres with the highest or the lowest cost values – can lead to useful profiles.

**Assessing Equity**

Equity means fairness: for instance, equal availability or use of health services for everyone who needs them. The distribution of health resources is one very important indicator of equity and examination of this is a necessary first step towards more detailed analysis. If one district receives twice as much of your programme expenditure as another, there might well be a case for better balance of resources on grounds of equity. Of course, total cost is not a very helpful guide. One of the major determinants of cost is the number of people. A better measure is the cost per person (that is, the total cost divided by the number of people in the target population). When analysing the equity of health services, you may need to take into account services provided by other organisations, such as other government programmes, NGOs and other private providers of primary care.

The comparisons you can usefully make are between people served by different facilities or in different geographical areas. You might wish to focus on urban vs. rural or on income differences; variations in per capital expenditure between different ethnic groups or other sectors of the population might also be worth examining in some cases.

If you identify major differences between two districts in the cost per person, there are several possible explanations. Suppose that the cost per head in district A is much higher than that in district B. It may be that:

1. The authorities are aiming for equity in the nature of the services delivered. To do this they have to spend more per head in district. A, because the highly dispersed population and the rugged terrain there make it more expensive to deliver the same level of services as district B is receiving.

2. The authorities are aiming for equity in the nature of the services delivered, but there is more waste in district A, which makes it more expensive.

3. The authorities are attempting to ensure that both districts `have equally good health. Because the population in district A, is less healthy than in district B, (because of the terrain, the type of employment, genetic factors, the age structure, etc.), makes more demands on the health facilities and thus requires more services persons.

4. The authorities are trying to guarantee the maximum improvement in health from their investment. They are putting more resources per head into district A, either because it is cheaper to provide services there or because the population is less healthy.

5. The authorities are vulnerable to the stronger influence and lobbying power of district A. District A is favoured politically and has more health resources put into it, although there may be no significant differences in population or terrain.

Clearly, it is important to decide which of these explanations is valid before you take action. You might consider that the first three explanations are acceptable, but you would perhaps wish to challenge discrimination on political grounds or because of the difficulty of providing services in some areas.

## Assessing Priority

At least in the case of vertical or special-purpose programmes, e.g. the Expanded Programme on Immunisation (EPI), the value of the resources devoted to a programme reflects some measures of the national priority accorded to it. You may find it useful to know what is being spent on your programme in comparison with other programmes. Are the results compatible with previously state priorities? You may be able to use the results to negotiate for further funding. Some of the questions to consider are these:

i. What is government expenditure per person on your programme?
ii. How does it compare with government expenditure per head on other health programme?
iii. Has expenditure per head on your programme increased or decreased since last year? Why?
iv. What percentage of total government health expenditure is directed towards your programme? Has this been increasing or decreasing over time? (You might need some in finding the answer to these questions).

The answers to all these questions can then be related to the priority that the government claims to give your programme. Planning documents and policy statements are useful sources of information about stated priorities. You could also put these questions to other non-governmental contributors to your programmes, and use the results to encourage contributors to "put their money where their mouths are".

## Making Cost Projections

Knowing what you are spending on your existing programme can also be very important for judging future costs. Expenditure is not a self-contained item; what you spend this year is likely to affect what you will need to spend next year. In particular, expenditure on capital goods generally implies a need for continued funding of the associated recurrent costs if the capital items are to be used properly. By studying past relationships between the costs of capital items and their associated operating and maintenance costs, you will be in a better position to estimate the future financial requirements of you programme.

You can also use your experience of what a certain kind of programme actually costs to estimate what a similar programme might cost in the future.

## Considering Cost Recovery

The cost of a health service or programme is one of the pieces of information that must be known if a country is considering introducing user charges (fees imposed on patients or on the agency supporting them) as one of the sources of financing. The aim might be to recover the cost of drugs or (much less likely) of all recurrent inputs, or the full cost of the service. If, for example, you are required to cover all local recurrent costs through fees, then the average local recurrent cost per unit of service will be a good guide to the price you should set.

Especially if the policy-makers of a programme are attempting to recover more than minor recurrent costs, they will need to consider the effect of user fees on the demand for services. A fall in demand may lead to an increase in average cost per beneficiary. (Even if the aim is to recover only a small portion of total cost, the price charged might affect the quality of services demanded). Of course, equity should also be taken into account, in terms of the patients' ability to pay for care. Assessment of this is sometimes a difficult task that goes well beyond cost estimation.

## 4.0 CONCLUSION

If you look at small enough pieces of the resource input picture, it is possible to describe each resource (and to estimate its cost) both in terms of the type (category) of physical input and in terms of any one of four secondary classifications, i.e. function or activity, level at which resources are used, source or contributor, and currency.

You should be aware of these distinct features of the resources used in your programme. Avoid mixing different characteristics in the same list, or you may have problems deciding how to categorise some resources. For example, if you have personnel (a physical input) and mass media (an activity) in the same list, where do you classify staff members who are involved in mass media activities? The danger is that you may count things twice, or perhaps even forget them altogether.

Sometimes, it may be justifiable to include an activity within a list of inputs. If one activity is clearly separated from the others, both financially and administratively, it may be easier not to attempt to break it down into its component physical inputs, but merely to record the total cost. For example, training and social mobilisation activities are treated above as categories of inputs and included along with personnel, vehicles and the like. When this is done, it is assumed that all the resources required for the activity (e.g. personnel and vehicles) are included in that category (e.g. training) and not under the separate categories of personnel, vehicles, and so forth. Thus, the full cost of all

inputs used for training is estimated and used as the value for that category

## 5.0 SUMMARY

This unit has taken you through cost analysis in health service and you have studied cost classification, use of cost data, assessment of efficiency equity and priorities, making cost projections and cost recovery. No doubt you have learnt greatly to the point that the knowledge acquired will influence your managerial skill positively.

## 6.0 TUTOR-MARKED ASSIGNMENT

Why is cost analysis essential in health service delivery?

## 7.0 REFERENCES/FURTHER READING

Creese, A. and Parker D. (1994). *Cost Analysis in Primary Health Care.* Geneva: World Health Organisation Publications.

## UNIT 3 FUNDAMENTALS OF HEALTH ECONOMICS

**CONTENTS**



## 1.0 INTRODUCTION

This unit is looking at the fundamentals of health economics and the focus will be the origin, definition and scope of health economics, economy and health, micro-economic principles, elementary theory of demand and supply and finally issues of resource allocation in health care delivery.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define health economics
- describe the role of economics in the development of the health sector
- explain the role of economics in the allocation, monitoring and control of resources in the health sector.

## 3.0 MAIN CONTENT

### 3.1 Origin, Definition, and Scope

The nature of health economics is best explained by first defining economics: it has been defined as "the study of how people and society end up choosing (with or without the use of money) to employ scarce productive resources that would have alternative uses, to produce various persons and groups in the society. It analyses the costs and benefits of improving patterns of resources allocation.

This definition emphasises economics as the study of scarcity and choice, of how to choose the best combination of resources to deliver in-patient care for instance, or how best to allocate given quantity of resources between alternative ways of improving health. The definition does not restrict economics to any one kind of human activities: it applies to all activities where scarcity and choice exist. Its relevance to the health sector of a developing country, where resources are extremely scarce is thus evident.

Health economics has emerged as a result of renewed cost consciousness within the health field at large and a shift from an exclusively humanistic approach to one incorporating an increasing use of managerial techniques and quantitative research methodologies. As an independent area of theory, its main function is to apply economic theory to practical problems of rationing the use of resources for the supply of effective services in response to demand using modern techniques.

"Health economics" can be broadly defined as the application of the theories, concepts, and techniques of economics to the health sector. It is thus concerned with such matters as the allocation of resources between various health-promoting activities; the quantity of resources used in health services delivery; the organisation and funding of health service institutions, the efficiency with which resources are allocated and used for health purposes; and the effects of preventive, curative, and rehabilitative health services on individuals and society.

Although, health care managers must frequently interact with economists, members of the two professions have considerable difficulty communicating, causing the economist to continually seek to justify his intrusion into the health field. Whereas the health professional perceives the economists as "hard-nosed" and "materialistic" individuals who are unable to understand the moral priority that life-saving health care activities should be accorded, the economist believes there is no reason why health care should be excluded from the glare of economic analysis.

Since independence, many African governments have channelled a substantial proportion of public funds to the health sector, but faced with recent fiscal pressures, the health sector share of government budgets has often contracted. Even in those countries that have managed to protect the health sector share, the real resources for health have commonly declined.

Nevertheless, health services still absorb a significant proportion of both government expenditure and family budgets. They also demand scarce

foreign exchange for drugs, equipment, and transport, while overall medical costs are escalating. Governments are actively seeking ways of containing costs and increasing efficiency. Health economics is attractive to them as it can help improve the allocation of health resources, increase their efficiency, identify more cost-effective technologies and reduce wastes.

Although, economists normally have faith in the ability of the market place to provide and allocate services efficiently, the characteristics of health care are such that such a market solution is unlikely to be a good one. These characteristics relate to externality, public goods, monopoly, uncertainty or imperfect information and equity. For these reasons, governments all over the world have been directly involved, in varying degrees, in the provision of health care services.

## 3.2 The Economy and Health

The role which health plays in the socioeconomic development of a nation cannot be over emphasised. An economy is made up of many sectors of which health is one. Every sector of the economy has a health component of such importance that it cannot be disregarded in any major socioeconomic development. There is a great deal of interaction between the health component and the other components of the total system. Health not only affects, but is itself also affected by the remainder of the socioeconomic complex.

Health has important bearing on economic development, indeed, both are inextricably linked. From an economist's viewpoint, improvements in health status represent both gains in welfare and an investment in future growth. Health affects development prospects: healthy individuals can be more productive at their jobs, perform better at school, and can earn more than those who are unhealthy. They require less medical care and therefore have more resources available for consumption and investment in other activities. On the other hand, a nation hobbled with diseases and illness cannot be expected to achieve much. Poor health lowers development prospects.

Economic considerations play a key role in all aspects of life: in agriculture, housing industry, trade, and in health. In addition, the nature and level of a country's economic development can be shown to be a major determinant of its epidemiological profile, and it is clearly associated with the level of health service and health-related activities a country can support. Its ideological commitment, economic philosophy, and organisational structures will then shape how much of and where, such activities are provided. Health policy and its implementation are thus strongly influenced by macroeconomic consideration.

General economic development and growth influence the health system through the amount of investments that could be made in the health sector, the supply of modern medical technology, increased access of the population to basic health services through housing, sanitation, food supply and nutrition, etc. Health improvement could be fostered by economic growth especially at the early stages of such a development process. At a higher level of economic development, however, a developing country could begin to experience health problems that are common to developed countries, e.g. cardiovascular diseases, hypertension, cancer, drug addiction and mental disorders, among others.

Economic development is usually followed by changes in production which impact on the health of the population. Some of the production changes that accompany economic development area shift in the balance of the importance of both agricultural and manufacturing sectors of the economy in favour of manufacturing; agricultural production for cash sale rather than for subsistence; and rising levels of energy consumption associated with more capital intensive technologies. These production changes, due to economic development, could have direct adverse effects on the health of the people as in the case of the Bhopal chemical disaster in 1984, and the Chernobyl nuclear disaster in 1986. On the other hand, many other developments on the economic front have indirect effects on the health of populations. For example, irrigation leads to increased agricultural output but can lead to an increase in prevalence of diseases such as schistosomiasis.

Consumption pattern also changes during the course of economic development. Low income and high prevalence of disease are strongly and positively correlated. In addition, epidemiological transitions tend to mimic transitions in the country's economic development profile. First, as countries become developed and people's socioeconomic status improves, poverty and ignorance linked diseases decrease. However, other forms of illnesses and diseases become significant. At lower levels of the economic development, children commonly contend with infectious diseases (gastrointestinal and respiratory), diarrhoea, malnutrition and malaria, while adults contend with maternity related problems, malaria, STDs, injuries and tuberculosis.

In those countries that have transited to higher development levels, children are more likely to live with mental retardation, growth failure, and injuries, while adult predominantly live with drug and alcohol abuse, diabetes and other metabolic disorders, cancer, cardiovascular diseases, neurological and psychiatric conditions.

| Age category | Pre-Transition | Post-Transition |
|---|---|---|
| Children | Diarrhoea, acute respiratory infections, intestinal helminthes, micro-nutrient deficiency, malnutrition, malaria | Congenital defects, growth failure, injury, mental retardation, AIDS, environmental risks |
| Adults | Tuberculosis, malaria, STDS, chronic parasites, injury, maternity-related problems | Neurological/psychiatric illnesses, cardio-vascular diseases, cancer, pulmonary diseases, diabetes/metabolic disorders, AIDS. |

**Epidemiological Transition and Disease Pattern**

## 3.3 Microeconomic Principles

### Resources and Scarcity

The resources of a society are commonly divided into three main groups.

i. All those free gifts of nature, such as land, forests, minerals, etc. commonly called natural resources and known to economists as LAND;

ii. All human resources, mental and physical which economists call LABOUR; and

iii. All those man-made aids to further production, such as tools, machinery, plant and equipment, including everything man-made which is not consumed for its own sake but is used in the process of making other goods and services which economists call CAPITAL. These resources are called factor of production because they are used in the process of production.

iv. Often a fourth factor, entrepreneurship is distinguished. The entrepreneur is someone who takes risks by introducing both new products and new ways of making old products. He organises the other factors of production and directs them along new lines.

The things that are produced by the factors of production are called commodities, which are divided into goods and services. Goods are tangible, as are cars or houses; services are intangible, as are a cruise on an ocean liner or health care. This distinction however becomes blurred

when one understands that goods are valued because of the services they confer on their owners. A car, for example, is valued because of the transportation that it provides – and possibly also for the flow of satisfaction the owner gets from displaying it as a status symbol. The total output of all commodities in one country over some period, usually taken as a year, is called gross national product.

In most societies, goods and services are not regarded as desirable in themselves; no great virtue is attached to piling them up endlessly in warehouses, never to be consumed. Usually, the end or goal that is desired is that individuals should have at least some of their wants satisfied. Goods and services are thus regarded as means by which the goal of the satisfaction of wants may be reached. The act of making goods and services is called production, and the act of using these goods services to satisfy wants is called consumption. A producer is anyone who helps to produce goods or services, while anyone who consumes them to satisfy his or her want is called a consumer.

The want that can be satisfied by consuming goods and services may be regarded, for all practical purposes in today's world, as insatiable. In relation to the known desires of individuals for such commodities as better food, clothing, housing, health care, schooling and entertainment, the existing supply of resources is woefully inadequate. It can produce only a small fraction of the goods and services that people desire. This gives rise to one of the basic economic problems: the problem of scarcity. Most of the problems of economics arise out of the use of scarce resources to satisfy human wants.

**Choice and Opportunity Cost**

Choices are necessary because resources are scarce. Because we cannot produce everything we would like to consume, there must exist some mechanisms to decide what will be done and what will be left undone; what goods will be produced and what will be left unproduced; what quantity of various goods will be produced; and whose wants will be satisfied and those that will be left unsatisfied. Individual consumers, business organisations, labour unions and government officials all exert differing levels of influence on these choices.

If you choose to have more of one thing, then, where there is an effective choice, you must have less of something else. Consider an individual with a certain amount of income who contemplates buying bread. We could say that the cost of this bread is ₦20 per loaf. A more revealing way of looking at the cost, however, is in terms of what other consumption he must forgo in order to obtain his bread. Let's say that he decides to give up attending a film show, if the price of the loaf is one

fifth of the price of the cinema seat, then the cost of five more loaves of bread is one cinema attendance foregone or, put the other way around, the cost of one more cinema attendance is five loaves of bread foregone.

At the societal level, if a state government elects to build more roads, and finds the required money by cutting down on its hospital construction programmes, then the cost of the new roads can be expressed as so many hospitals per kilometer of road. If the government decides that more resources must be devoted to defence, then less will be available for social services and a choice will have to be made between "guns and butter". The cost of one will be expressible in terms of the amount of the other foregone. The economist's term for expressing costs in terms of foregone alternative is opportunity cost.

**Marginal Values**

Economic theory makes much use of what are called "marginal" concepts. Marginal cost, marginal revenue, marginal utility and marginal propensity to consume are a few examples. Marginal means on the margin or border and the concept refers to what would happen if there were a small change from the present position. Let us illustrate this with the utility concept. The satisfaction a household receives from consuming commodities is called utility. Total utility refers to the total satisfaction gained from consuming some commodities, and marginal utility refers to the change in satisfaction resulting from consuming a little more or less of those commodities.

The concept of utility is extremely important in economics. Whereas real choices concern a little more or a little less, which is most often the situation that decision units face from the household level to central authorities, they are influenced by marginal utilities not by total utilities. The basic hypothesis of utility theory is sometimes called the "law of diminishing marginal utility' which states that the utility that any household derives from successive units of a particular commodity will diminish as total consumption of that commodity increases, the consumption of all other commodities being held constant.

Consider the case of water. Some minimum quantity of drinking water is necessary to sustain life and a household would, if necessary, give up all of its income to obtain that quantity. The marginal utility of that quantity is extremely high. Much more than this bare minimum can be drunk, but the marginal utility of successive glasses of water drunk over some time period will decline steadily.

## 3.4 Elementary Theory of Demand and Supply

## The Allocation of Resources

The term allocation of resources refers to the way in which the available factors of production are allocated among the various uses to which they might be put. This allocation of resources helps to determine how much of the various goods and services will actually be produced. In a market economy, millions of consumers decide what commodities to buy and in what quantities; a vast number of firms produce those commodities and buy the factor services that are needed to make them; and millions of factor owners decide to whom they will sell these services. These individual decisions collectively determine the economic allocation of resources.

But how does the market achieve the efficient allocation of resources without conscious direction by some central coordinating body? It happens because individuals take their private decisions in response to publicly known signals such as prices, while these signals respond to the collective actions entailed by the sum of all individual decisions. Because of the importance of prices in market economics, we say that they employ a price system. This term refers to the role that prices play in determining the allocation of resources and the distribution of national product.

## The Nature of Demand

The amount of a commodity that households wish to purchase is called the quantity demanded of that commodity. Note that it refers to a desired quantity, not necessarily how much is actually purchased. The quantity demanded is also a flow. Concern is not with a single isolated purchase, but with a continuous flow of purchases, and thus demand is usually expressed as so much per period of time – one bottle of coca cola per day, or five tins of milk per week.

## Determinants of Quantity Demanded

The quantity of a commodity demanded by an individual household is known to be influenced by five major factors.

- The price of the commodity
- The prices of other commodity
- The size of the household's income
- Various sociological factors
- The tastes of the household

Any attempt to understand what happens to the quantity when all these factors change at the same time will be impossible. To get around this

dilemma, economists resort to a convenient device frequently used in economic analysis referred to as ceteris paribus. The basic assumption is that all, except one of these factors are held constant; then we allow this one factor, say the price of the commodity, to vary, and consider how the quantity demanded varies if all other things remain unchanged.

**The Demand Schedule and Curve**

The relationship between the quantity of a commodity demanded and its price is presented in a table called the demand schedule. It shows the quantity of a commodity that a household would demand at different prices.

When the individual points corresponding to the different price-quantity combinations are connected with a smooth curve, the resultant curve is called the demand curve. The demand curve for a commodity shows the relation between its price and the quantity a household wishes to purchase per period of time. It is drawn on the assumption that income, tastes and all other prices remain constant, and its downward slope indicates that the lower the price of the commodity, the more the household will desire to purchase.

More often than not, we need to know the total demand for some commodity on the part of all households. To obtain a market demand schedule from the demand schedule of individual households, we merely sum the quantities demanded by all households at a particular price to obtain the total quantity demanded at the price; we repeat the process for each price to obtain a schedule of a total market at all possible prices. A graph of this schedule is called market demand curve

It is useful to differentiate between an increase or shift in demand. A movement along a demand curve occurs when the quantity demanded changes in response to a change in the commodity's own price. It is referred to as a change in the quantity demand. A shift in the whole demand curves occurs when a change in any of the other factors that influence demand causes a different quantity to be demanded at every piece. It is referred to as a change or shift in demand.

**Demand for Health Care**

In the early 1960s, economists first became interested in estimating the demand for health services. The single-equation demand models which they used came from a simple utility maximisation model of consumer behaviour. This model predicts that if people derive utility directly from consuming medical care,

i. the demand for medical services will depend on the price of that service, other prices, income, and tastes.
ii. own price elasticity will be positive, cross-price elasticity will be positive for most goods, and if medical care is good, the elasticity of demand will be positive.

Subsequent revisions included crucial demographic variables such as age, education, and health status which had been omitted in the early models. In 1988, the World Bank conducted an extensive study on household demands for outpatient services in Ogun State. The empirical model employed assumed that choice of health care is a function of:

i. price of the care,
ii. quality of the care,
iii. sex of the patient,
iv. education of the patient,
v. wealth (assets) of the household,
vi. income of the household; urban residence;
vii. symptoms of the illness,
viii. seriousness of the illness.

**The Nature of Supply**

The amount of a commodity that firms are able and willing to offer for sale is called the *quantity supplied* of a commodity. Like demand, supply is a desired flow: it measures how much firms would like to sell, not how much they actually sell; and it measures it as so much per period of time.

**Determinants of Quantity Supplied**

The quantity of a commodity that is supplied by all firms in a particular market is influenced by:

i. the price of the commodity,
ii. the prices of factors of production,
iii. the goals of the producing firms,
iv. the state of technology.

**Supply Schedule and Curve**

Ceteris paribus, the quantity of any commodity that an individual firm will produce and offer for sale will vary directly with the commodity's price, rising when price rises and falling when price falls, because the higher the price of the commodity, the greater the profits that can be

earned and thus the greater the incentive to produce the commodity and offer it for sale.

As with demand, we can imagine discovering the quantity supplied by each firm in the market at any given price and then aggregating the quantity supplied over all firms to discover the market supply at that price. Repeating this procedure for each price would yield a relation between price and the total quantity supplied by all firms in the market.

The *supply schedule* is analogous to the demand schedule in Table 2, but it records the quantities producers wish to sell at a number of alternative prices rather than the quantities consumers wish to buy.

When the data presented in Table 3 is plotted on a graph and the various price-quantity combinations are joined by a smooth curve, we have a *supply curve*. The supply curve for a commodity shows the relation between its price and the quantity producers wish to sell per period of time. It is drawn on the assumption that all other factors that influence quantity supplied remain constant, and its upward slope indicates that the higher the price, the more producers will to sell.

If both the demand and supply curves are plotted on a single graph, at their point of intersection, the market price would be ₦700; the quantity demanded would be 300 cartons and the quantity supplied would be the same. Thus at the price of ₦700, consumers wish to buy exactly the same amount as producers wish to sell. Consider any price higher than ₦700, say ₦800. At this price, would consumers wish to buy 200 cartons, while producers would wish to sell 400 cartons; thus quantity supplied would exceed quantity demanded by 200 cartons. For any price above ₦700, quantity supplied exceeds quantity demanded. Furthermore, the higher the price, the larger the excess of one over the other. The amount by which the quantity firms wish to sell exceeds the quantity households wish to buy is called excess supply.

At all prices below ₦700 the quantity demanded exceeds the quantity supplied, with the excess becoming larger with lower prices. The amount by which the quantity demanded exceeds the quantity supplied is called the excess demand

Whenever there is excess supply, the market price will fall. Producers, unable to sell some of their goods, may begin to ask lower prices for them: purchasers, observing the glut of unsold output may begin to offer lower prices. For either or both of these reasons, the price will fall. Conversely, when there is excess demand, market price win rise. Individual households unable to buy as much as they would like to buy, may offer higher prices in an effort to go more of the available goods for

themselves; suppliers, who could sell more than their total production, may begin to higher price is the quantities they have produced. For either or both of these reasons, prices will rise.

At a price of ₦700; there is neither excess supply creating a glut, nor excess demand creating a shortage; quantity supplied is equal to quantity demanded and there is no tendency for the price to change. The price of ₦700, where the supply and demand curves intersect, is the price towards which the actual market price will tend. It is called the equilibrium price: the price at which quantity demanded equals quantity supplied. The amount that is bought and sold at the equilibrium price is calling the equilibrium quantity: the term equilibrium means a state of balance, it occurs when customers desire to buy the same amount that suppliers desire to sell.

When quantity demanded equals quantity supplied we say that the market is in equilibrium. When quantity demanded does not equal quantity supplied we say that the market is in disequilibrium.

**Elasticity of Demand and Supply**

We have seen that one of the crucial factors which determine both the quantity of goods that consumers wish to buy and that which producers wish to sell is the price of that good. Whenever there is a change in price therefore, it is expected that there will be a change in both quantity demanded and supplied. However, the magnitude of this change differs for different goods and services. Whereas for some commodities a small change in price would lead to a more than proportionate change in quantity demanded or supplied, for others, a change in price leads to a less than proportionate change in quantities demanded or supplied to changes in the market factors that influence demand or supply is called elasticity.

The elasticity of demand/supply can be of different forms, but the most common types are price elasticity, income elasticity and cross elasticity.

The elasticity of demand/supply is the measure of the degree of responsiveness of quantity demanded/supplied to changes in commodity's own price, income or in the price of another commodity. Price elasticity of demand is the degree of responsiveness of quantity demand to changes in the commodity's own price. It can also be defined as the percentage change in quantity demanded divided by the percentage change in price.

$$e = (-1) \times \frac{\text{percentage change in quantity demanded}}{\text{Percentage change in price}}$$

Since demand curves slope downwards, the change in quantity has the opposite sign to the change in price, which means that the number expressing elasticity will always be negative. The minus sign in the formula for elasticity is there simply to make elasticity of demand a positive number. The value of elasticity of demand ranges from zero to infinity. When it is zero, it is said to be perfectly inelastic i.e. quantity demanded does not respond to change in price. The demand of such a commodity is said to be perfectly inelastic. More often than not, there is some positive response of quantity demanded to a fall in price, and as such elasticity will exceed zero. When elasticity is equal to one, it implies that the two percentage changes are equal to each other, a condition referred to as unitary elasticity.

When the percentage change in quantity demanded exceeds the percentage change in price then the elasticity of demand is greater than one, and the demand for such a commodity is said to be elastic. The more responsive the quantity demanded becomes to a given change in price, the higher the elasticity of demand. In the limiting case, quantity becomes infinitely responsive. For such a commodity, there exists some small price reduction that will raise demand from zero to infinity. Above the critical price, consumers will buy nothing. The demand for such a commodity is said to be perfectly elastic. When the percentage change in quantity is less than the percentage change in price (elasticity less than 1), the demand is said to be inelastic.

Let us illustrate the importance of this concept to policy makers and its relevance to health sector managers with the following worked example.

The calculated elasticity of camoquine would be + 0.37 that for Textbook is + 1.0 and that for V set is + 2.5. Based on these values, we find that the demand for T.V sets is more responsive to a price change than the demand for camoquine tablets and textbooks. The percentage change in the quantity of T.V sets demanded is two and one-half times as large as the percentage change in the price that brought it to about (e = 2.50; but the percentage change in the quantity of camoquine tablets demanded is less than half as large as the price change that brought it to about (e = 0.37). We concluded that where the demand for T.V sets is elastic that for textbooks is unitarily elastic, while that for camoquine tablets is inelastic.

## 3.5 Resource Allocation Issues in Health Care

The Health Sector as an economic unit has limited resources like personnel, funds, materials, infrastructures and equipment. These resources need to be allocated to the various competing units so as to derive the best possible benefit from medical care.

We assume that the amount of the different resources allocated to the health sector as a whole is not in question. However, the total amount to be allocated to the health sectors can be influenced favourably through informal and formal contacts of individuals and pressures groups. One such example is the historic Nigerian Medical Association strike. With this as given, we can have two views of resources allocation in health care: macro and micro views. The macro view is aggregative while the micro view relates to the sub-units and hence is disaggregated.

On the macro level, a major issue relates to deciding how much of each of the scarce resources is allocated to preventive and curative health care. The determination of which amount is allocated can depend on a number of reasons. For example, a government might decide to allocate more to preventive health care delivery because it is cheaper to the society in the long-run if the populace is healthy. A healthy population will be more productive and can increase the national wealth. An unhealthy population will tend to deplete the national wealth than be contributive to its increase, flock the existing health care delivery units and stretching them beyond their elastic limits. Thus, from basic economic analysis point of view, it is better to pay more attention to preventive rather than curative health care.

The resource allocation issue also comes into play when deciding the choice of which techniques to adopt within each of the two sectors of health care delivery. Economic analysis suggests that the best choice of technique relates to those whose benefits outweigh their costs. Each sector has different technology matrices made up of different technologies. For example, one method of preventive medical care is to increase the level of health education of the population: as regards the type of water to drink, the types of food to eat, their sleeping and eating habits, their standard of hygiene etc. This can be done informally or formally through the educational system. In relation to choice of technique, the choice of which medical and other health personnel to use in informal health education of the populace is also an economic analysis issue. In a country like Nigeria, where the doctor/population ratio is very low, it might be more rewarding to use doctors for training other medical, nursing and paramedical staff who will then go to train the populace in basic health education.

The provision of the basic infrastructure like potable water versus hospital is an economic issue that impinges on both preventive and

curative health care delivery. Economy-wise, the allocation of resources to other sectors of the economy impinges on health care delivery. For example, the allocation of resource to the education sector impinges on the health sector. The contemporary emphasis on the Arts and Social Sciences inadvertently affects the number and quality of science students available for training in the medical and other health professions.

An important resources allocation issues in curative health care relates to allocation to the various levels of our health care delivery system. The pyramid of curative health care delivery in Nigeria has as its base, the primary care level; the first point of contact with the patients consists of public health clinics and centres, dispensaries, private clinics and maternity centres. The next level is the secondary level whose components are general, cottage and mission hospitals. At the apex is the tertiary level consisting mainly of the teaching and specialist hospitals.

Ideally, because the primary health care level is the closest to the people, it should be the first port of call, adequate resources in terms of personnel, funds, equipment and materials should be allocated to this level. If this is done, the secondary or the tertiary levels will be more favourably disposed to handle more complicated cases and will not spend a lot of energy and effort in dealing with cases that might otherwise have been treated by a better funded and resource based primary health care level. A possible index of how resources are allocated or utilised between the various health care delivery levels will be the number of simple cases that get reported to higher level. The more this number, the less efficient the system would seem.

Another important resources allocation issue relates to the special distribution of health facilities and health personnel between communities. How further apart should health facilities be? What is the optimal distance? What is the optimal health personnel/population ratio? The use of Western trained health personnel versus traditional health personnel in health care delivery is another vexing resource allocation question. How much of government funding should go into either?

## 4.0 CONLUSION

Health services absorb a significant proportion of both government expenditure and family budgets. They also demand scarce foreign exchange for drugs, equipment and transport. The overall medical costs escalating on a daily basis should be explored. So, Health Economics is now attractive to the society as it can help improve the allocation of

health resources, increase their efficiency, identify more cost effective technologies and reduce wastes.

## 5.0 SUMMARY

In this unit we have looked at the origin, definition and scope of health economics, health and economy, principles of micro-economy, elementary theory of demand and supply and issues of resources allocation in health care.

## 6.0 TUTOR-MARKED ASSIGNMENT

Discuss the relevance of studying health economics to health care managers.

## 7.0 REFERENCES/FURTHER READING

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# UNIT 4 MANAGEMENT OF DRUGS AND CONSUMABLES I

## CONTENTS



## 1.0 INTRODUCTION

While drugs alone are not sufficient to guarantee good health, without them there can be no meaningful health care delivery possible. Drugs make health care delivery. Drugs make health care credible because they can prevent and cure diseases, relieve symptoms and alleviate sufferings. However, the increasing cost of health care and services calls for the need to utilise the available resources for health care delivery to achieve maximum efficiency, cost effectiveness and cost benefit.

Given the present economic climate, it would not be difficult to predict that for the foreseeable future, funds for drugs would not be enough to enable doctors prescribe as they would like to for patients in the public sector of the health care system. Nevertheless, we should be able to meet the minimum needs of the majority of the patients attending the various levels of health care institutions. Even to satisfy these minimum needs, our priorities in drug requirements would have to be carefully defined and determined.

As many as 70% of the pharmaceuticals in the world market today represent duplicative or non-essential products, many are minor variations of a prototype drug and offer no therapeutic advantage. Other drugs represent sub-optimal choices of treatment because of high toxicity relative to their therapeutic benefit. In some cases, drugs which

are newly released have insufficient information on efficacy or toxicity. Finally, many, if not most of these new products are from therapeutic indications, not relevant to the basic needs of the developing countries.

It is, therefore, important that in selection/formulary development, which is the first step in drug management, the basic drug needs should be explicitly listed.

The formulary should take into cognisance the special situation of the health care system for which it is meant. For instance, a formulary for a teaching hospital must recognise the needs of this kind of hospital as the pinnacle of the health care pyramid where rare and even common but difficult diseases requiring specialised forms of treatment are handled. It must also take cognisance of the position of such a hospital as a centre where the frontiers of drug treatment have to be continually explored through the controlled use of new and unfamiliar drugs. .

The logistic cycle for proper management of drugs and consumables consists of four main functions namely: selection, procurement, distribution and use.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- discuss the concept of essential drug list
- describe the procedures for procurement and storage of drugs.

## 3.0 MAIN CONTENT

### 3.1 Criteria for Selection of Drugs

When selecting drugs for use in a health institution the following criteria should be employed:

- the pattern of prevalent diseases,
- the treatment facilities available,
- the skills, training; capability and experience of the available personnel,
- financial resources,
- physical infrastructure available,
- genetic, demographic and environmental factors,
- demonstrated efficacy and safety,

- quality (including bio-availability) and stability of dosage forms under the anticipated conditions must be established,
- duplication of drugs for the same indication should be avoided by prioritisation based on relative efficacy, safety, quality, costs, availability, pharmacokinetics, pharmacodynamics etc.
- multiplicity of dosage forms should be based strictly on indication,
- preference should be given to old well-tried drugs over new, inadequately evaluated one'). Single compounds should ordinarily be preferred to fixed dosage combinations,
- drugs with unproven or doubtful therapeutic effect, even when hallowed by long usage should not be selected.

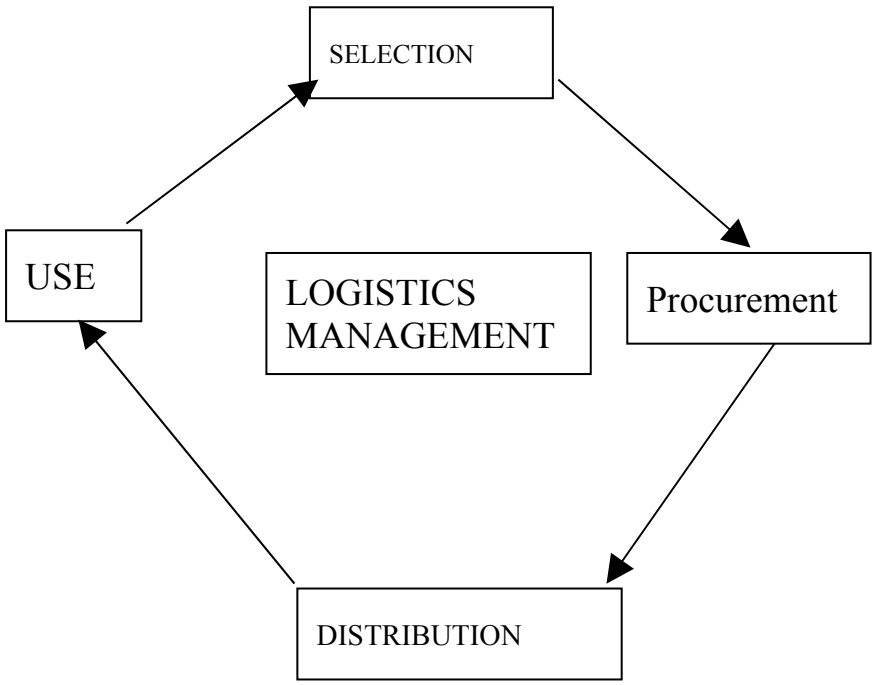


**Fig. 8.1**

It is necessary to set up an appropriate Drug Committee for the management of the formulary. The tasks to be performed by the Committee include the following.

1. Regular revision of the formulary using well-defined guidelines and criteria similar to those used in drawing up the essential drug list.
2. Producing and regularly revising prescription information on the drugs included in the list.
3. Periodic evaluation of quality of drugs on the list.
4. Drug utilisation surveys.

5. Research and Development on pharmaceutical, clinical and educational aspects of rational drug use.

**Advantages of an "Essential" Drugs List**

1. Reduction in the number of drugs used in the health care system. This will simplify the administrative processes involved in procurement, storage and distribution.

2. With the limited number of drugs and the use of generic rather than proprietary names, it would be easy to provide concise, accurate and comprehensive information on all the drugs on the essential drugs list.

3. It should be easier for prescribers to familiarise themselves with the pharmacological properties of the drugs, thus improving the quality of drug treatment.

4. Drug utilisation in the various sectors of the health care system can be more easily monitored. True quantitative requirement, can therefore be determined.

## 3.2 Quantification of Drug Requirements

Once' the question "What drugs to buy?" is adequately answered, the next question is "How much of each item to buy?" The purposes of estimating drug requirements are:

1. to avoid shortages which can lead to increase in morbidity and mortality and can hurt the credibility of the health institution. (Patients expect hospitals/ or dispensaries to have drugs).
2. to avoid over-stocks which may lead to drugs expiring?
3. to estimate and defend the financial requirements of the health services.

There are two well-known methods of estimating drug requirement viz the consumption method, and the morbidity method.

### i. Consumption Method

### a. Data Collection

Consumption data can be collected from existing hospital/Clinic records (e.g. stock cards or ledgers). The previous drug consumption pattern will be the basis for estimating future requirements.

**b. Data Analysis**

- **The ABC Value Analysis:** this type of analysis looks at drugs from the economic impact point of view. According to ABC analysis, "drugs are not created equal". Some drugs consume a large proportion of the budget (Class A Drugs), others consume a very small proportion of the budget (Class C Drugs) and some drugs are in between (Class B drugs). Class A items are usually few (1-20% of drug items)and they consume most of the budget (70=90% of the budget) Classes B and C items are in the majority of items (80-90%) but they consume a small proportion of the budget (10-3-%).

- **V.E.N. Analysis:** 111is type 0': analysis looks at drugs from the health point of view. Some drugs are vital (V) others are Essential (E) and the rest are Non-essential (N). The drugs which treat a significant proportion of the population or are potentially life-saving are considered vital e.g. vaccines. Drugs which are considered the first line of treatment for certain diseases but not life-saving are considered essential e.g. antibiotics. While drugs which do not play important roles in modifying the course of diseases are considered Non-essential e.g. tonics and lozenges.

- **Therapeutic Alternative Analysis:** here, drugs are grouped into therapeutic categories (e.g. anti-hypertensive, diuretics etc.) Then, the proportion of budget spent on each therapeutic category is calculated. Therapeutic categories that consume significant share of the total budget should be identified (e.g.' anti-bacterial and I analgesics).

- **Anticipating Programme Growth:** anticipated change in the consumption pattern of certain drug items should be estimated. For example, if there is promotional campaign for a specific drug drug items then the consumption of these items will likely be high (e.g. immunisation campaign).

- **Order Adjustments:** the results of the ABC analysis, VEN and the therapeutic alternative analysis should be utilised to modify drug orders to achieve better drug value for allocated fund.

**ii. Morbidity Method**

The morbidity method is a more appropriate method of quantification of drug requirements especially in the following circumstances:

a. when available funds are inadequate for projected needs,
b. when available consumption information is incomplete or unreliable,
c. when prescribing patterns seem inefficient or irrational.

**Essential steps in the application of this method are:**

- **Population Coverage/Health Facility Utilisation Rat**e: First, determine the number of the people who will be seen in all the facilities supplied by this programme; as well as the age distribution of the population being served. For purposes of estimating drug requirements, the age distribution can be categorised into "Under age 5" and "age 5 and above".

- **Health problem profile:** Then the frequency of each health problem (symptom, diagnosis etc.) must be determined.

- **Standard Treatment:** Standard treatments are essential for calculating drug requirements with the morbidity method. For estimation purposes, standard treatment must be specific with regards to dosage, frequency and duration of treatment.

- **Calculation:** Quantities required are equal to the number of patients multiplied by the frequency of common health problems and multiplied by the quantity of individual drugs needed to treat each health problem.

Quantity Required = No. of patients x frequency of health problem x quantity of individual drug needed to treat each health problem.

- **Adjust for Budget:** Either use the final estimate to argue for more funds or adjust the drug order to fit the budget.

**Choosing a Method**

Although neither of the two methods is universally better than the other, there are circumstances in which one method may be preferable for quantifying drug requirements, such as:

1. where a health service is being reorganised, the past consumption data, if available ,may be irrelevant to future drug needs.

2. when there is effectively no operating drug supply system for the health facility to be served.

On the other hand, when the demand for individual drugs is fairly well established, funding is stable, and supply is dependable, then the consumption method is the more efficient method.

Thus, regardless of whether one starts with morbidity or the consumption method, the long term objective should be the combination of the two methods. The combined method should offer the management advantages of the consumption method and the public, health advantages of the morbidity method.

## 3.3 Procurement

Procurement is the process of acquiring supplies. The acquisition may be made by:

v. purchasing the needed drugs from a private or public supplier for an agreed-upon price,
vi. contracting with agencies such as UNICEF, WHO,
vii. national bilateral aid programmes for donation of needed drugs, or
viii. arranging for the manufacture of specific quantities of individual drugs, if production facilities exist.

The three procurement sources, *purchase, donation and manufacture,* may be used individually or in combination to fill the entire range of drug needs for a public health programme.

Procurement should be a cyclic process in which the same sequence of steps is followed each time new supplies of drugs are needed.

## 3.4 Quality Assurance

The quality of a drug coming off the production line is determined by the raw materials, the plant environment, the manufacturing equipment, and the technical know-how invested in developing the drug, and the manufacturing process; but the drug reaching the patient may be quite different.

The packaging, transportation conditions, storage conditions and many other factors influence the quality of the drug at the end-user level. These influences can be cumulative.

The purpose of quality assurance in public drug supply system is to make certain that each drug reaching a patient is safe, effective and

acceptable. Established quality standards are published periodically in pharmacopoeias.
However, the most important characteristics of a drug are:

- identity
- purity
- uniformity
- bio-availability

If a drug that does not meet established quality standards reaches its expiration date, or is being spoilt by the local environment, the possible consequences are:

- loss of potency
- medication errors
- toxic degradation
- contamination

A comprehensive quality assurance programme must consider:

1. that suppliers are selected whose quality standards are acceptable
2. those drugs received from commercial suppliers and donors meet specified quality standards at the time of delivery, and
3. the production had been in accordance with Good Manufacturing Practice (GMP).

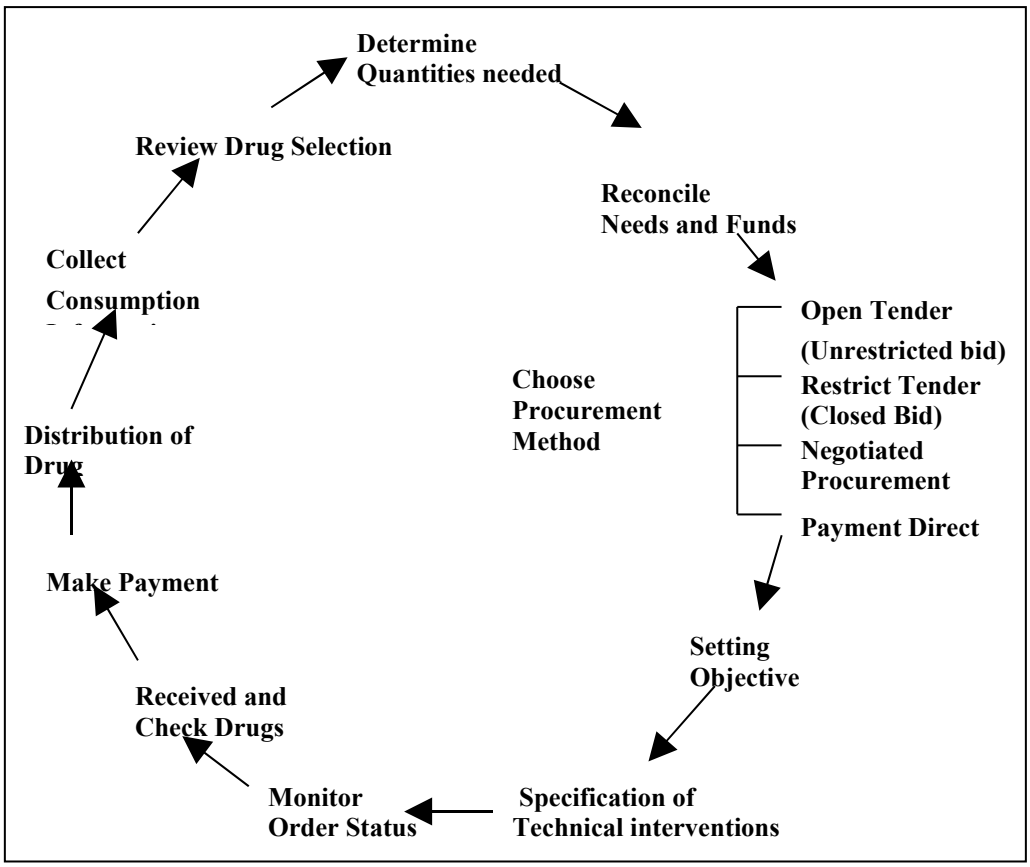

**Fig. 8.2 The procurement cycle**

With the growing menace of fake drugs in the country these days, it has become necessary to develop capability to measure quality including availability of drugs.

Were it is not possible, the WHO "Certification Scheme on the Quality of Pharmaceutical Moving International Commerce" should be applied. There should also be continuous check of quality during utilisation - including tests of bio-equivalence of generics with better brand products.

## 3.5 Storage

In many public health systems, storage and transport of supplies rank low in budgeting and priorities. This is unfortunate because improper storage can cause stock damage, drugs and a huge loss.

The size of storage facilities required depends largely on the level/size of the health care service e.g. state government, local government, hospital or clinic. For instance, a central or zonal medical store, from where many health facilities are expected to be supplied, should be built on sites that enhance their ability to receive, safeguard and redistribute supplies. Careful consideration should be given to such factors as access, drainage, security, water, electrical and telephone service. Deficiencies in any of these factors may limit the utility of the warehouse, or cause stock damage or both. The design of the store should permit sufficient internal air circulation which maximizes the shelf life of pharmaceuticals. Although air conditioning is ideal, it is expensive to operate for large storage areas. Ceiling fans provide a practical alternative especially for areas where dressings are stored. Proper positioning of shelves and use of pallets promote both air circulation and movement of stock.

## 3.6 Arrangement of Stock

Within warehouses and storerooms; drugs can be arranged in any of the following ways:

i. alphabetical arrangement based on dosage forms or formulation packages,
ii. alphabetical arrangement based on pharmacological action and uses,
iii. alphabetical arrangement regardless of dosage form or uses.

Arrangement pattern based on (dosage forms) is the most generally accepted and the best.

Generic name should be used throughout to avoid confusion (e.g. chloroquine rather than Nivaquine or Resochin instead of Pfizerquine).

### 3.6.1 Arrangement Based on Dosage Forms

For hospital pharmacies handling a variety of supplies, the following are the usual classifications:

(1) Injections
(2) Tablets and capsules
(3) Liquid dosage form
(4) Ointments and creams
(5) Gallon goods
(6) Large bulk items
(7) Alcohols and liqueurs
(8) Narcotics
(9) Biological and other thermo mobile preparations
(10) Laboratory supplies
(11) Dressings and sutures.

The shelves in which these items are located should be numbered to facilitate location during issues and while taking physical inventory.

### 3.6.2 Special Storage Conditions

Some categories of supplies require special storage conditions. These include vaccines, narcotics and combustibles.

Narcotics and other controlled substances should be kept in secure lockable rooms with only one entrance. The keys should be kept in a secure place preferably a safe. Only the warehouse director and one other person should have access to them.

Combustibles such as alcohols, ether and other inflammables must be stored in special rooms. A small, separate out building is preferable since it virtually guarantees that fire will not spread throughout the warehouse. If a special building is not available, the rooms used to store these supplies must be fireproof and well ventilated.

Vaccines require both refrigerators and freezers depending on the level of service. At central facilities and at other facilities, storing large amounts of vaccine, cold rooms, refrigerators and freezers should be backed up by auxiliary generators in case of power failures. The generators should be equipped to start automatically when power is cut. Fluctuation in ambient temperature can affect internal temperature of cold storage units.

At peripheral facilities, vaccines can be stored in cold storage units in the room in which they are administered. Thermometers are placed in freezers and refrigerators to monitor internal.
In addition to adequate storage conditions, the distribution system must also have the necessary cold storage boxes for transportation between facilities and to immunisation sites. Table 1 and 2 summarise the temperature requirements for vaccine storage and the temperature ranges of different storage items.

### 3.6.3 Storage Problems

Certain factors can create storage problems and they include the following:

i. inadequate building
ii. unnecessary accumulation of expired drugs

## 4.0 CONCLUSION

The essence of drugs in health care delivery cannot be under estimated although drugs alone cannot guarantee good health but without drugs there can't be any meaningful health care delivery. It is therefore imperative that in selection of drugs, the basic drug needs should be listed so that they are made available for effective health care delivery.

## 5.0 SUMMARY

In this unit, we have seen that it is not sufficient that basic drugs and consumables are provided for effective health care delivery, they must also be properly managed.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Critically discuss the concept of essential drug cost.
2. Describe the procedures for procurement and storage of drugs.

## 7.0 REFERENCES/FURTHER READING

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# MODULE 3



## UNIT 1 MANAGEMENT OF DRUGS AND CONSUMABLES II

### CONTENTS



## 1.0 INTRODUCTION

This unit concludes the two series (units 8 and 9) of management of drugs and consumables. While unit 8 dealt with criteria for selection of drugs, quantification or drug requirement procurement, quality assurance, storage and arrangement of stock, this ninth unit will be looking at inventory control, drug use, dispensing and finally patient use of drugs. Hopefully, the knowledge you acquire in this unit will make you a better manager of drugs and consumables wherever you practise your professional duties.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list categories of rational drug prescription

- outline factors that contribute to non-compliance of rational drug prescription
- discuss inventory control
- explain dispensing practices.

## 3.0 MAIN CONTENT

### 3.1 Inventory Control

Inventory, i.e. the stock in hand at any given time, is an essential part of any supply system. Total amount of inventory held at any time and at all points in the supply system is essential; therefore, efficient inventory management is crucial. Inventory levels systems are designed to ensure that stock administration meets predetermined levels consistently.

**Keeping an Inventory Control**

Accurate records of receipts and issues must be kept. The Tally/Stock/Bin card and ledger obtained method is generally well accepted. Every item has a bin card and at least a double page ledger. Each issue is entered immediately on the bin card and the ledger is posted with the inventory book or the Stores Issue Voucher (SIV) later. The bin cards are usually kept usually with the corresponding items. Other information recorded in the bin card include the name of the drug (generic), strength, pack size, expiry date, price etc. Recently, the use of computer has been introduced into inventory control.

**Physical Inventory**

Physical stock of drugs and pharmaceuticals in the various sections of the stores must be recorded regularly, e.g. every two or three months and twice yearly for complete stock taking.

Regular stock taking is valuable in checking stock level and monitoring dated pharmaceuticals which are about to expire. Issuing of drugs should be on the principle of First In, First Out, except in unusual cases where a recent stock may have a shorter shelf-life than previous existing stock. This frequently happens with donated drugs.

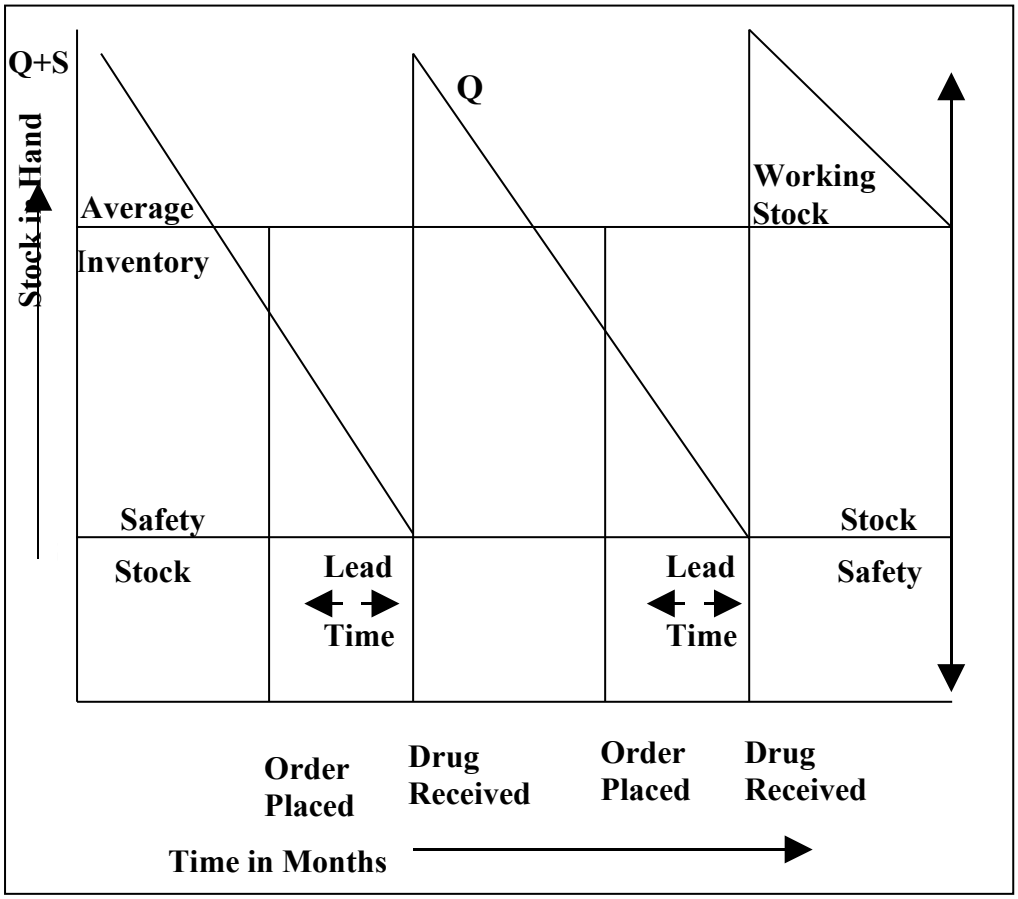


**Fig. 9.1 An Ideal Inventory Model**

## 3.2 Drug Use

### Prescribing

Rational drug prescription requires that the medical practitioner make an accurate diagnosis of a condition, select the best drug from those available, and prescribe the drug in an adequate dose for a sufficient length of time, according to standard norms for treatment.

Irrational prescribing can be categorised as:

1. **Extravagant prescribing** - occurs if a drug is prescribed when:

a. a less expensive drug would provide comparable efficacy and safety,

b. symptomatic treatment of mild conditions diverts funds from treating serious illness.

**2. Over prescribing-** Occurs if a drug is prescribed when:

a. the drug is not needed,
b. the dose is too large,
c. the treatment period is too long,
d. the quantity dispensed is too much for the current course of treatment.

**3. Incorrect prescribing-** occurs when:

a. the drug is given for an incorrect diagnosis,
b. the wrong drug is selected for the indication,
c. the prescription is prepared improperly,
d. adjustments are not made for co-existing medical, environmental or other factors.

**4. Multiple prescribing (polypharmacy)** – occurs when:

a. two or more medications are used or when one or two would achieve virtually the same effect,
b. several related conditions are treated when treatment of the primary condition will improve or cure the other conditions,

**5. Under prescribing** – occurs when:

a. needed medication are not prescribed,
b. dosage is inadequate,
c. length of treatment is too brief.

Prescribers must be encouraged to keep within the hospital drug formulary and prescribe in generic names.

## 3.3 Dispensing

Establishing good dispensing practices: dispensing of medication is a basic component of the pharmaceutical logistics system. Dispensing is often overlooked during the development of a pharmaceutical logistics system because it is viewed as being of secondary importance to procurement, inventory control and distribution. This oversight is unfortunate because poor dispensing can undo all the benefits of careful selection, economical procurement and effective distribution.

**Dispensing Practices:** The principles of good dispensing fall into 5 categories.

1. Interpreting request (either by prescription (Rx) – written or oral, or by patient request).
2. Retrieval (reading the label on the stock bottle and noting expiry date).
3. Formulation (compounding, counting, pouring). Pre-manufactured drugs are dispensed either by counting or by pouring.
4. Processing/labeling.
5. Delivery.

Since most drugs are ingested, sanitary procedures should prevail in the drug environment. Once the prescription (Rx) is interpreted, retrieval process begins. To guard against the dispensing of incorrect dosage, there is the need to shelve like dosage forms together and physically separate them from other dosage forms.

**Pre-packaging for patients' use:** Basically, drugs are dispensed to patients in some form of container. The type of container may affect the quality of the medicine at the time it is consumed.

Medicine can be dispensed to patients in one of two ways: in individual packets filled on the spot by the dispenser from bulk containers or in course-of-therapy packets which are filled and labeled in advance with standard drug quantities. The characteristics and examples of packaging materials for different packaging categories are shown in table 3.

**Labels** – Ideally, these should be pre-printed with name of drug, dosage and instruction for use (both written and symbolic).

**Summary:** In the prescribed dosage and quantity, there should be clear instructions in the package which maintains the potency of the drug.

Care should be taken to read labels accurately, to count and measure carefully, and to guard against cross-contamination of drugs by cleaning of utensils and equipment thoroughly.

Stock-keeping practices which aid good dispensing include:

1. Shelving like dosage forms together,
2. Rotating stock, using a "first in/first out" procedure,
3. New inventory placed behind older inventory on shelf,
4. Protection from heat, moisture, and light,

5. Adequate ventilation.

| **Category of packaging** | **Package characteristics** | **Examples** |
|---|---|---|
| Tablets/capsules<br>**Desirable:** should meet listed requirements for a period of over 30 days | Clean, dry plastic or glass container with tightly sealed cap or seal | Blister packages, plastic sachets, tightly sealed plastic or glass containers with screw or snap cap |
| **Acceptable:**<br>Packaging should meet the listed requirements for up to 30 days | Clean drug containers which provide protection from dirt and moisture | Zip-lock plastic bags, glycerin paper. Hinged-lid boxes, tight top tins |
| **Undesirable:**<br>(Packaging provides no protection from dirt, moisture etc. thus permitting rapid deterioration or contamination). | Unclean absorbent paper, cotton wool, cardboard containers with no provision for closure | Unsealed plastic bags, paper bags, newspaper or other printed paper |
| **Liquids**<br>(Ophthalmic & Optic)<br>Desirable | Clean (preferably sterile) light resistant glass or plastic container with a dropper incorporated into a tightly sealed cap, or dropper fixed to a protective sleeve | Amber dropper bottle or opaque plastic dropper bottle |
| **Acceptable** | (Above with separate stopper) | Glass or plastic bottle with dropper |
| **Undesirable** | Unclean paper, metallic or plastic (not formed) container and no provision for closure | Previously used liquid containing cartons, plastic lined paper bags, plastic bags |

**Package Material for Drug Dispensing**

Packaging may affect:

i. the quality of the medicine at the time it is consumed
ii. patients image of the health system
iii. patients faith in the medicine

Packaging should protect the drug and be accurately labeled. Medicines are dispensed from bulk containers or in course-of-therapy packets filled and labeled in advance. Course-of-therapy pre-packaging has important advantages which frequently justify the small additional expense involved. These include:

i. safer, easier and faster dispensing,
ii. less deterioration of drugs,
iii. easier and more accurate recording of inventory,
iv. improved credibility among users, due to appearance,
v. increased patient compliance,
vi. easier storage and distribution,
vii. more rational and more efficient prescribing,

Pre-packaging operation requires equipment, trained staff and space. There are three levels of pharmacy personnel - graduate pharmacist, pharmacy technician and dispensers. Special training for drug handling increases efficient practices

## 3.4 Patient Use

**Patient:** non – compliance is more frequent at the extremes of age, in those who live alone with no family support, in the lower socio-economic classes; in people with less education, and in those situations where a cultural or language barrier exists between prescriber and patient.

A frequent cause of non-compliance is the inability of the patient to buy the full course of drugs needed for therapy. The factors responsible can be summarised as follows:

**Prescriber:**

(a) Attitude
- warm or cold
- supportive or condescending
- positive

(b) Language barrier
(c) Lack of time

**Medication:**

Multiple medications
Frequent dosage
Drug presentation - attractive or not
The factors (a) and (b) above encourage non-compliance. Strong or unexpected side-effects will also lead to non-compliance and requires counseling

**Patient's Education**

Prescribers/doctors/pharmacists/dispensers have essential roles in patient's education to encourage compliance. The patient's level of formal education is an important factor.

## 4.0 CONCLUSION

Adequate inventory control of drugs and consumables will prevent the health care manager from embarrassment and will afford him proper management of the service point. So, it is pertinent that the manager is up and doing in this area of management of drugs and consumables if he is to meet up with the challenges posed daily by demands of health consumers

## 5.0 SUMMARY

This concluding part of management of drugs and consumables had looked at inventory control, drug use, dispensing and patient's use of drugs and the information you are exposed to can not be quantified in order to make you an effective health care manager.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. How can unnatural drug prescription affect effective health care delivery in Nigeria society?
2. Discuss the factors that contribute to non-compliance of rational drug prescription.

## 7.0 REFERENCES/FURTHR READING

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# UNIT 2 MANAGING OF EQUIPMENT AND SPACE IN THE HOSPITALS

## CONTENTS



## 1.0 INTRODUCTION

This unit will be dealing with the management of equipment and space in the health care delivery services. There are basic tools a manager must know how to manipulate, for effective health service delivery.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list the main types of material equipment,
- explain the procedure of managing equipment in our hospitals
- discuss how health manager can manage work space for the benefits of health consumers.

## 3.0 MAIN CONTENT

## 3.1 Managing Equipment

**Types of Material Equipment**

The two main types of material equipment are known as expendable (also called consumable or recurrent), and non-expendable (also called capital; or non-recurrent).

i. Expendable equipment is equipment that is used within a short time, e.g. matches, cotton wool, food, laboratory paper, disposable syringes.

ii. Non-expendable equipment is equipment that lasts for several years and needs care and maintenance, e.g. microscopes, scalpels, furniture, weighing scales, vehicles, and bedpans.

### 3.1.1 Procedures

The four main procedures in the equipment are:

**Ordering:** Obtaining equipment from stores or shops;
**Storing:** Recording, labeling and holding equipment in a stock or store-room;
**Issuing:** Giving, labeling and holding equipment in a stock or store-room.
**Controlling:** Controlling expendable equipment, maintaining and repairing non- expendable equipment.

### 3.1.2 Ordering Equipment

Only some health workers (usually senior staff) are authorised to order equipment: To order equipment, the following skills are needed.

a) List requirements, from a knowledge of past use and estimates of present use.
b) Balance requirements with available resources and make cost-estimates.
c) Use a catalogue.
d) Complete an order-form or requisition form.

### a. Making lists

Make several lists according to the expected places of purchase e.g. matches are bought from a local shop, thermometers are bought from a pharmacy or medical store, paper is bought from the government office or a stationery store.

For each item write down the exact type required e.g. torch light battery, 1.5 volts, and syringes 5cc.

Estimate the quantity of each item. To do this it is necessary to know:

i. How frequently the order can be placed (purchasing interval) e.g. kerosene – local purchase, a weekly order; thermometers – from a distant store – order every 6 months.
ii. How much is normally used during the purchasing interval? For example, 5 rolls of cotton wool per month for a treatment room
iii. Is the amount used reasonable? Does it seem extravagant or more than is needed?

The quantity of an item used should depend on the number of people using it and can be estimated from experience or by asking experienced persons. Since resources are always limited, it is important that consumable items be used economically.

### b. Balancing requirement and resources

Health services all over the world are short of resources. Therefore, requirements must always be balanced against resources. (Balance what is needed against the money available to buy it or the people available to use it). Sometimes one can obtain more resources, e.g. if the budget is increased or a new programme is started. Usually, requirements must be reduced until they correspond with the funds available to purchase them.

### c. Using a Catalogue

A catalogue is a book that contains a list of articles available for purchase from a certain place.

A catalogue is used whenever things are purchased at a distance. A catalogue may be published by a government store or by a private firm or by a manufacturer or by a shop.

Equipment for rural health service are normally obtained through a catalogue orders because shops in rural areas are small and do not contain the type of equipment required. Also, catalogue – ordering is used when purchasing is done through government stores or government departments.

A disadvantage of catalogue – purchasing is that the purchaser does not see the articles he is buying. Often, there are small items, e.g. there may be six different kinds of scalpels or forceps or articles may be in different materials, e.g. kidney dishes or stainless steel, enamel or plastic. Therefore the catalogue must be read with great care and the exact item number, description and price carefully identified.

**d. Completing an order form or requisition form**

An order form or requisition form is usually supplied together with the catalogue. Each store or firm publishing a catalogue has its own particular order form.

An order form has a column for each of the following: item number, name of article, quantity required, piece per unit, total prices.

### 3.1.3 Storing Equipment

Equipment is stored in two kinds of places:

1. A main store or reserve store where stocks are kept but not used.
2. The place of use, after issue.

To store equipment the following skills are necessary:

a. Receiving and recording of new articles and recording the issuance of the articles received
b. Keeping a stock-book or stock-ledger in balance.

**a. Receiving New Articles or Equipment into Store_**

A new article is usually delivered with pieces of paper, either an invoice if not yet paid for or a delivery note if payment has been made (or sometimes both papers). (An invoice is a statement of the cost of the articles).

Invoices and delivery note must be placed in separate files. They should be kept for this purpose and labeled either ‘invoices’ or ‘delivery notes’.

The receipt of the articles is then entered in the stock-book or ledger. Usually there is a page for each item stocked.

The record is in columns of the date the article was received, item number of articles (from the catalogue) and the place of purchase, with the number of the invoice or the statement of account, and quantity of the article.

Usually there are two ledgers one for expendable and one for non-expendable equipment.

**b. Keeping a ledger balance**

Each item on a ledger is recorded on a separate page. Each time an item is viewed it is added to the total in stock. Each time an item is issued, it is subtracted from the total stock. The resulting number is the balance in stock.

### 3.1.4 Issuing of Equipment

A health unit may have several sections, e.g., maternity ward, a treatment room, laboratory, mobile clinic. The health worker in charge of each section of work is responsible for the equipment under his care. Thus, a maternity nurse is responsible for weighing –scales, syringes and vaccines, record cards, delivery kits and other apparatus. A laboratory worker is responsible for the microscope, test-tubes, and glass slides.

After equipment has been ordered, received and recorded in the stock-book ledger, it is issued for use when it is needed.

There are three paper procedures used to issue equipment:

a. A ledger recorded, i.e. writing the issue in the stock ledger.
b. Issuing a voucher to be signed.
c. An inventory record of the section receiving the equipment and using it.

**a. Ledger Record_**

When an issue is written in the stock ledger, the balance remaining in stock is found by subtracting the amount issued from the total in stock. When the balance is getting low, it is time to order new equipment.

It is important to record issues in the stock ledger and to calculate the balance of the stock remaining. This is how to find out when to order more stocks.

**b. Issue Voucher**

There is an official form in which the issues are recorded.
Date of issue, what is issued and how much, its page number in the ledger; where it is going to be used (section of health centre), who is responsible (usually head of section),and the signature of person responsible for its use.

The person who signs the issue voucher takes responsibility for the care of the apparatus or equipment. Issue vouchers must be filed and kept in the store. Duplicate copies are given to the department that receives the equipment.

**c. Inventory**

An inventory is a list of items that are kept at a certain place. Each section of a health unit keeps an inventory of its non-expendable equipment.

New equipment issued must be added to the inventory. This inventory is used to check the equipment in use, at intervals.

## 3.1.5 Controlling and Maintaining Equipment

Expendable equipment needs to be controlled to avoid wastage. Non-expendable equipment needs to be maintained, i.e. kept in good working condition. To control and maintain equipment the following skills are needed.

a. Convincing staff of the importance of cleaning, inspecting and keeping equipment in good order; of reporting defects immediately; and of returning equipment to its correct place after use.
b. Using an inspection check-list and inspection schedule.
c. Detecting discrepancies and explaining them.
d. As there is no easy way to convince staff of the need to clean equipment and keep it in good condition, the best way is for the supervisor (health-worker, manager) to act as a good example and to emphasise that equipment must be cared for.
e) Preventing transmission of infection, e.g. by a dirty instrument.

f) Keeping equipment in good condition (dirty or damp equipment deteriorates more rapidly than equipment that is kept clean and dry.
g) Economising.

To work economically and make the best use of equipment and supplies and for equipment to last longer, material must be used correctly to avoid waste. (Examples of wasting resources are, using cotton wool for general cleaning instead of cleaning wounds. Not turning off the light when it is not needed). Equipment and material should be returned clean and in good order to their correct places after use. In this way, equipment will last longer and replacement will be less often.

**Inspection Checklist**

Equipment in a department is inspected by seeing what is present and checking it against the inventory. How often a piece of equipment should be checked depends on whether it is consumable or long-lasting and whether it is liable to break down.

Consumable items need to be checked to avoid wastage and extravagance. Long lasting equipment such as beds, tables and chairs need to be checked only once a year. Equipment and machinery that are liable to break down (i.e. sphygmomanometers, electric sterilisers, and vehicles) need regular and more frequent check-up.

Inspection in uninteresting work area is, often forgotten or overlooked. As a reminder to the health worker manager, it is important to have a routine for inspection.

**Detecting and Interpreting Discrepancies**

A ‘discrepancy’ is a difference between what is reported and what is found, e.g., a difference between the amount of something actually used and the amount normally expected to be used, or a difference between the equipment entered in the inventory list and the equipment actually present.

**Example 1**

The amount of carbol fuschin stain in a laboratory is the same today as it was 3 months ago, and there is no record of any having been supplied since that time. This means the carbol fuschin has not been used.

It is normally expected that a laboratory in a busy health centre would use carbol fuschin to stain slides for acid-fast bacilli

This is a discrepancy in which less has been used than expected.

**Explanation**

In investigating this discrepancy, many reasons might be found. Perhaps no leprosy or tuberculosis patient has been sent for examination. If not, why is it so? Or the laboratory may have no acid /alcohol and therefore could not use the carbol fuschin, as both are needed in the stain for acid-fast bacilli, or there may be a new laboratory assistant that does not know how to perform the stain and is afraid to say so.

Usually, more is used than is expected to be used.

**Example 2**

Twenty 2ml. non-disposable syringes were issued to a mobile clinic. After one month, only 5 remained. This is a discrepancy.

**Explanation**

Perhaps the syringes were badly packed in a box and many were broken during transportation, perhaps they were left behind in a distant clinic, or some health workers may have been careless and have broken many syringes. Or the syringes may have been stolen.

**The Value and Use of Equipment Records**

Good management takes care of equipment by:

- instructing and motivating staff to feel responsible for the equipment they use,
- ordering supplies when needed,
- storing them safely, and
- controlling their use.

Why is it important to keep accurate equipment records? Why take the trouble to keep requisition books, stock ledgers, issue vouchers and inventories? Are all these paper works a waste of time and energy? There are several good reasons for doing the paper works.

1. Previous order-records make subsequent orders, next month or next year, much quicker and easier. The suppliers' addresses, item numbers, normal quantities required, etc. are identified.

2. The balance in the stock ledger gives warning of when to order more supplies. This prevents long periods without necessary equipment. Being "out of stock" of equipment reduces the usefulness of the health service.

3. Issue vouchers encourage workers to take responsibility for equipment and help to identify who is accountable for loss or breakage.

4. Inventories assist in the rapid checking of equipment in use and help to detect discrepancies, wastage, extravagance and theft.

## 3.2 Managing Space

We are concerned with two kinds of space:

- the building or other settings where health care is given, and
- the geographical or "catchments" area served by a health centre.

### 3.2.1 Arranging Work-Space

Good management takes care in arranging the space where the staff members work. Many health units have unsuitable space arrangement, because of the small size of the building or the rooms, or their awkward shape. More often, it is because no one has given the matter any thought. There is no complex rule about space arrangement. The basic rule is to think about them instead of arranging things anyhow.

One should ask two simple questions.

1. What work has to be done here?
2. Could this space be arranged in another way that would help the work and suit the patients better?

**Example 1**

A medical assistant examined adult patients at one end of a room containing a table and chair. At the other end, a nurse examined children.
There was no examination couch for a full examination. Adults had to cross the corridor to another room. This took time, with the result that the medical assistant rarely had enough time to examine anybody.

A good supervisor came and placed two screens beside the medical assistant's table and a narrow bed behind them. Patients could then undress in privacy, while the medical assistant continued with the next patient. This made his work much easier, suited patients better and avoided waiting and delays

**Note:** Simple screens, made of a timber frame covered with cloth, are useful ways of making extra rooms.

**Example 2**

A common space problem is lack of storage space. Stores are often too small and sometimes become overfull so that it is difficult to find things There are several possible solutions to this. One is to place cupboard with locks along a corridor. Another is to turn the office into a large store and use the small stores as small offices.

### 3.2.2 Arranging Work-Flow

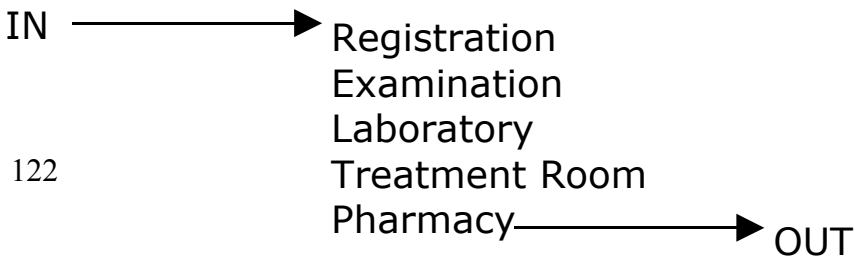
One of the features of many health units is lack of order in the way people are handled. In the same space people sit around waiting, while others stand in queues; people get in one another's way or impede the work of the staff. Most of these problems can be improved by a health worker who pays attention to work-flow.

Work-flow is an arrangement in which a series of work functions are coordinated in space and time so that delays are minimal. The greater obstacle to the organisation of work-flow is a wrong attitude. Congestion and queues are now so common in health services that most people regard them as normal or inevitable and make no effort to prevent them. Some people think that long queues show how busy and hard-working they are.

Most factories, or production units, provide good example of workflow. Consider a bottling factory where used bottles are received and washed. They moved to the next area and are sterilised and dried. They move to another area and are filled with fruit juice. They then move to the next stage and the caps are fixed on. Suppose something went wrong in the filling stage, e.g., the stocks of fruit juice ran out. Then the clean and dry bottles would keep coming and piling up in the filling room. Meanwhile, the workers in the following stages would have nothing to do. This is what happens when there is a queue in a health centre. There is a delay or a blockage in one stage of a work-flow. So, moving people like bottles in a factory is not the best way to help them – so what are the alternatives?

**Work-flow in an outpatient department**

To organise a work-flow in an outpatient department each stage must be examined separately. If there is a queue, it is a sign that work speed or work efficiency must be improved, or that work distribution must be changed. The usual flow in an outpatients unit is as follows:



It is essential to examine the whole process. Removing a queue from one stage may result only in creating a queue at another; e.g., if registration is speeded up, so that patients get their card quickly, a queue may form outside the examination room. If the position at the examination room is improved, patients may have to wait at the pharmacy for their drugs

**Some ways to improve work-flow**

A good work-flow has been achieved when each patient can go through each stage with only a very short waiting time.

The following are some ways to avoid delays.

1. Label every door so that patients know where to go.

2. At the registration area:

i. Have separate systems for returning and new patients;
ii. Let returning patients keep their cards, or let them have numbers by which their cards can be rapidly found;
iii. Establish a workable filing system for cards by which they can be found rapidly.

3. For the best use of the examination room:

i. Train an orderly or junior nurse to screen patients in a different room or another space, for example, to take the history; to take the temperature and, if there is a fever, to make blood slide,
ii. Patients returning daily for a course of treatment should go direct to the treatment room,
iii. Have printed or duplicated prescriptions ready for all routine minor complaints,
iv. Establish clinic days for special conditions that require time, e.g., tuberculosis, leprosy, malnutrition,
v. Make appointments for busy officials for less busy time.

4. In the pharmacy:

i. Keep a stock of written instructions to patients on how to take routine courses of drugs,
ii. Pre-package routine courses of drugs.

5. Organise a family health service. This method concerns care for whole families, and the families' relations with the health centre staff.

A number of families from a district, a village, hamlets or several streets, are assigned to a health centre worker who is responsible for their health care. As a result, a woman does not need to make several visits to the health centre, e.g., for prenatal care in a day and for children's immunisation another day. Instead, her own examination can be done in one visit. The health worker receives and examines the family and advises or prescribes for them at once, and then visits them at home when she goes to work in the community, for convenience.

To screen in this context means to examine everyone briefly by interview and a quick examination to ensure that those who do not need to see the doctor are treated by other members of staff. The doctor, for example, can then give sufficient time and attention to patients with more serious cases.

Have a separate treatment area. It is usually necessary to maintain a clinic area for dressings, injections, fitting of contraceptives, etc. to which people are referred to. Later, they can return to their own health worker before leaving the health centre.

A family health service has several advantages.

1. Unnecessary journeys are avoided especially for mothers with several children. Families visit the centre less often, apart from special visits for treatment for a particular member (e.g., to collect drugs for leprosy tuberculosis). Women attending prenatal clinics can bring their children at the same time.

2. Staff members have much more job satisfaction. The varied activities and sense of responsibility stimulate interest. Families feel they have a friend at the health centre.

3. The family is seen as a total unit, and a health problem can be seen in its entirety. The history obtained is the family history; the same information is not requested several times.

4. It enables less skilled health workers to better screen clinic attendants so that only patients with problems that need more skilled medical or nursing care take up the time and effort of a supervising nurse or doctor. Usually, most people can be cared

for by the less skilled health workers and only the more serious problems have to be referred to the more highly qualified staff.

5. Work is more efficient because time and other resources are used better. Training programmes can be set up to enable health workers to deal with their expanded role as family health workers. Staff can be rotated in 'family duty' so that those working in the treatment area may become family health workers for a time.

### 3.2.3 Identifying the Catchments Area

'Catchments area' is a term borrowed from geography where it means that part of a land surface from which rain-water is collected and flows into a river or lake.

When this term is applied to a health unit, it means the area from which patients come to the health service. In the case of a regional or district hospital the catchments area is the whole region or district; for a health centre it would be the villages around the health centre, and for a small treatment post or aid-post it might be only one village.

When there are several health centres in a district their catchments areas may overlap.

The idea of catchment area is very important because it identifies the responsibility of a health unit. A health unit is meant to give a complete health service to all the people and communities in its catchment area. This means that all matters affecting health within the catchment area are management responsibility of the health unit. To know what these responsibilities are the catchment areas are to be identified.

### 3.2.4 Using Maps in District Health Work

A district health centre without map is like a physician without a clinic record: an important guideline is missing.

The following are some of the many uses of maps in health work.

1. To show distances to various health units and villages. Distance can be measured in kilometers or in traveling-time. Traveling-time is more important for health work because it will be shown on the map by the presence of bad roads, windy roads, mountains or ferries. With the aid of a map, the travelling-time to each area should be written on a separate paper.

2. To plan routes in district work, it may be convenient and time-saving to visit two or three places on the same day. Suitable routes can be planned with the help of a map.

3. To decide on traveling methods. Some routes may be covered by regular bus services which may be used. These can be marked on the map. Other roads may be impassable except by jeep, or they may be impassable at certain seasons.

4. To learn the population distribution and density of an area. The main centres of population are shown on the map. The density of population (number of people per km) can also be shown. This helps to decide how long a clinic session or health campaign is likely to take.

5. To learn of the different types of community in an area. There may be villages of different types, e.g., the standardised housing of plantation workers, or semi-urban communities in large villages, or very scattered farms.

6. To obtain information about the community environment. Maps can give a great deal of information about the environmental features that influence health e.g., a map can show all the main water sources such as rivers, wells and springs and whether they are dammed or piped. A detailed map could also show the number and distribution of sanitary facilities in an area.

7. To show the topography of an area, i.e., its physical features: mountains, rivers and vegetation, and whether the vegetation is forest, bush or cultivated land.

8. Public buildings may be marked on a map, particularly those that can be used for health work such as clinics or meetings. Schools, community halls, administration offices or large warehouses may be borrowed when necessary for different types of health work.

9. Information obtained from health surveys is sometimes shown on maps by means of coloured pins; e.g., one pin for every 10 or 20 patients with certain diseases, such as leprosy, can be stuck in the part of the map that shows where those patients live. The distribution of pins will then indicate the distribution of leprosy in the area. This, in turn, will show the most convenient places for mobile clinics.

Not all features can be recorded on one map. Usually several are needed, each giving a different kind of information.

### 3.2.5 Making a Health District Sketch Map

Geographical mapping is difficult and time-consuming. Each feature must be in exact proportion. A health worker does not have the skill or the time to make proper, in-scale, geographical maps
Often, local maps may be obtained from the local government office or land department. They may be unnecessarily detailed, but the main features needed for health work may be traced from the map on transparent paper and then transferred to a large card and hung on a wall. If there is no official map, a rough sketch – map of the whole area is better than none.

Prepare a code or signs to use on the map, for the features that must be shown.

## 4.0 CONCLUSION

Equipment and work-space are parts of the basic resources the health manager has to use effectively for better service delivery, if he does not manage these resources very well then his service points will not be properly organised and his accountability knowledge will be in question. So, he has to manipulate the equipment and work-space well to meet the needs of the health consumers.

## 5.0 SUMMARY

In this unit, we have learnt about managing equipment and work-space in the health service. Your new knowledge should help you to be a better manager of these resources than before. You are expected to maximise the available resources to give the best service to you patients.

## 6.0 TUTOR-MARKED ASSIGNMENT

Describe how mismanagement of equipment can mar a successful delivery of qualitative health care services.

## 7.0 REFERENCES/FURTHER READING

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# UNIT 3 INTERNATIONAL HEALTH

## CONTENTS



## 1.0 INTRODUCTION

This unit is looking at international health as "Nothing on earth is more international than disease'' said Paul Russell. Health and disease have no political or geographical boundaries. Disease in any part of the world is a constant threat to other parts. History is replete with examples of the spread of pestilences – particularly of cholera, along trade routes. In order to protect against the spread of disease from one country to another, many attempts were made in the past by individual rulers and states to place barriers against infection by detection and isolation of incoming travellers. In the 14th century, a procedure known as "quarantine'' was introduced in Europe to protect against the importation of plague. Ships, crews, travellers and cargoes, suspected of harbouring infection, were detained for 40 days period. The underlying idea was that the passage of time would give dormant disease to manifest itself or die out. Quarantine soon becomes an established practice in many countries, and different countries adopted different quarantine procedures. This was the origin of international health work. Quarantine failed in its objective because of the lack of scientific knowledge regarding the causation and mode of spread of disease. Opposition to quarantine comes from several quarters because the 40 days detention obstructed and caused serious inconveniences to international trade and travel. It became necessary for international agreement and cooperation on quarantine matters to control communicable diseases. International conferences were held and organisation set up for discussion, agreement and cooperation on matters of international health. A brief account of these endeavours and of the early health organisations which preceded the World Health Organisation is given below.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list at least five (5) early international health organisations that preceded World Health Organisation
- discuss the functions of World Health Organisation
- enumerate the decisions of World Health Organisation,
- list five (5) other United Nation Agencies.

## 3.0 MAIN CONTENT

### 3.1 First International Sanitary Conference (1851)

The origin of international health cooperation dates back to 1851, when an international sanitary conference – the first of its kind – was

convened in Paris. The conference was attended mainly by European countries – Austria, France, Great Britain, Greece, Portugal, Russia, Spain and four sovereign states (Sardinia, the two Sicily, the Papal States, Tuscany) that were later to form a united Italy. Turkey also participated in this conference. The objective of this conference was very limited i.e. to introduce some order and uniformity into quarantine measures which varied from country to country. The conference lasted six months with no lasting results. Some members opposed quarantine, and some took an intermediate position. Despite the many difficulties involved, an international sanitary code was prepared, comprising 137 articles dealing with cholera, plague and yellow fever but the sanitary code never come into force as it was ratified by only three countries – France, Portugal and Sardinia of which Portugal and Sardinia withdrew in 1865. Thus the conference was generally regarded as having ended in failure. The 1851 conference was followed in rapid succession by further conferences–no less than 10 conferences took place between 1851 and 1902 but they were equally unable to reach an agreement on quarantine measures.

### 3.1.1 Pan American Sanitary Bureau (1902)

The next important milestone in international health work was the establishment of Pan American Sanitary Bureau (PASB) in 1902 in the Americas. It was primarily intended to coordinate quarantine procedures in the American states. In 1924, an important document was signed by the American Republic namely "The Pan American Sanitary Code'' which is still in force between the states. In 1947, the Bureau was reorganised and the organisation was called the Pan American Sanitary organisation (PASO). In 1949, an agreement was reached whereby the PASO would serve as the WHO regional office for the Americas. In 1958, the name was changed to Pan Americas Health Organisation (PAHO). Over the years, PAHO has grown from a small information center to a major health agency with its headquarters in Washington, D.C. The Pan American Sanitary Bureau was the world's first international health agency.

### 3.1.2 Office International D'Hygiène Publique (1907)

At the 1903 International Sanitary Conference, a step of fundamental importance was taken, that is, to establish a permanent international Health Bureau. This decision was probably influenced by the fact that the American republics had already established a similar bureau, the Pan American Sanitary Bureau in 1902. Accordingly in 1907, the "Office International D'Hygiène Publique'' (OIHP), generally known as the "Paris Office" was created to disseminate information on communicable diseases and to supervise international quarantine measures. At its

inception, the OIHP was predominantly European. But later on, a considerable degree of cooperation grew up between OIHP and PASB. Sixty other countries, including British India, joined the OIHP giving the office an international character. Although the OIHP had no field staff to undertake investigation of epidemics, it did remarkable work in disseminating knowledge of communicable diseases and their control, and also information on a variety of health problems of world-wide interest. The OIHP continued to exist until 1950, by which time its responsibilities had been taken over by the WHO.

### 3.1.3 The Health Organisation of the League of Nations (1923)

After the First World War (1914-18) the League of Nations was established to build a better world. It included a 'Health Organisation' to "take steps in matters of international concern for the prevention and control of diseases''. Although the League of Nations was a failure on the political side, its Health Organisation, which was established in 1923, did a creditable work. Not confining itself to quarantine regulations and epidemiological information or even lager problems of epidemic diseases, the Health Organisation of the League branched out into such matters as nutrition, housing and rural hygiene, the training of public health workers and the standardisation of certain biological preparations. The League analysed epidemiological information received, and started the series of periodic epidemiological reports now issued by the WHO. It also establishes the Far Eastern Bureau at Singapore. It laid down lines for technical studies (including the use of expert committees) which are substantially followed by the WHO. The WHO owes much to be done to the methods devised by the Health Organisation of the League. It may be mentioned that efforts to amalgamate the OIHP, PASB and the Health Organisation of the League of Nations proved a failure and all the three organisations co-existed during the years between the two world wars. In 1939, the League of Nations was dissolved but its Health Organisation in Geneva, which continued to do the best it could, with requests for information and the publication of the weekly Epidemiological Records was never suspended.

### 3.1.4 The United Nations Relief and Rehabilitation Administration (1943)

The United Nations Relief and Rehabilitation Administration (UNRRA) was set up in 1943 with the general purpose of organising recovery from the effects of the Second World War. The UNRRA had a health division to care for the health of the millions of displaced persons, to restore health services and to review the machinery for international interchange of information on epidemic diseases.

UNRRA did outstanding work of preventing the spread of typhoid and other diseases, so that they never reached serious epidemic levels anywhere. Similarly, UNRRA'S assistance to malaria control in such countries as Greece and Italy, where war had disrupted peace-time malaria services, was on an immense scale. The world renowned campaign for the eradication of malaria from Sardinia began as a joint effort of UNRRA, the Rockefeller Foundation and the Italian Government. At the end of 1946, UNRRA terminated its official existence and its health activities and its financial assets were taken over by the interim commission of the WHO.

### 3.1.5 Birth of the WHO

The WHO has its origin in April 1945, during the conference held at San Francisco to set up the United Nations. The representatives of Brazil and China proposed that an international health organisation should be established and that conference to frame its constitution should be convened. The constitution was drawn up at an international health conference in New York in 1946. The same conference set up an "Interim Commission'' to prepare the ground for the new organisation and to carry out urgent tasks until the WHO constitution had been accepted by the required number of UN Member States. The ratifications were secured by 7 April 1948; the formal existence of the WHO as a specialised agency began on that date. The formation of WHO represents the culmination of efforts to establish a single worldwide inter-governmental health agency.

**World Health Organisation**

The World Health Organisation is a specialised, non-political, health agency of the United Nations, with headquarters at Geneva. In 1946, the constitution was drafted by the "Technical Preparatory Committee'' under the chairmanship of Rene Sand, and was approved in the same year by an International Health Conference of 51 nations in New York. The constitution came into force on 7$^{th}$ April, 1948 which is celebrated every year as "World Health Day''.

**Objective**

The objective of the WHO is "the attainment by all peoples of the highest level of health'' which is set out in the preamble of the constitution. The current objective of WHO is the attainment by all people of the world by the year 2000 AD of a level of health that will permit them to lead socially and economically productive lives as the constitution states:

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, and political belief, economic and social condition. The health of all people is fundamental to the attainment of peace and security and is dependent upon the fullest cooperation of individuals and states. The achievement of any state in the promotion and protection of health is of value to all. Unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger. Health development of the child is of basic importance; the ability to live harmoniously in a changing total environment is essential to such development. The extension to all people of the benefits of medical, psychological and related knowledge is essential to the fullest attainment of health. Informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of the health of the people. Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures''.

The WHO is unique among the UN specialised agencies in that it has its own constitution, own governing bodies, own membership and own budget. It is part of, but no subordinate to the United Nations.

In recent years, two major policy developments have influenced the WHO. First, the Alma-Mata Conference in 1978 on primary health care which provided both WHO and UNICEF with a common charter for health and secondly, the Global Strategy for Health For All by 2000. Both WHO and UNICEF are striving towards the goal of HFA by the year 2000 through health systems based on primary health care.

**Membership**

Membership in WHO is open to countries. While most countries are member of both the UN and the WHO, there are some differences. For example, Switzerland is a member of WHO, but not of the United Nations. Territories, which are not responsible for the conduct of their international relations, may be admitted as associate members. Associate members participate without vote in the deliberation of the WHO. Each member state contributes yearly to the budget and each is entitled to the services and aids the organisation can provide. In 1948, the WHO had 56 members. By 1996 WHO had 190 member states and two associate members.

**Work of WHO**

WHO's first constitutional function is to act as the directing and coordinating authority on all international health work. This function permits WHO's member states to identify collectively, health policies to cope with them to devise collective strategies, principles and programmes to give effect to these policies and to attain the targets. The WHO also has specific responsibilities for establishing international standards in the field of health, which comprise the following broad areas:

**1. Prevention and Control of Specific Diseases**

Almost all communicable diseases are or have been for sometime the subject of WHO activities. The global eradication of smallpox is an outstanding example of international health cooperation. With the same energy and commitment with which WHO eradicated smallpox, it is now directing the global battle against AIDS and polio.

An important activity of WHO is epidemiological surveillance of communicable diseases. The WHO collects and disseminates epidemiological information on diseases subject to International Health Regulation and occasionally other communicable diseases of international importance through an Automatic Telex Reply Service (ATRS) and the "Weekly Epidemiological Reply'' (WER). The latter contains more complete detail and brief reviews of communicable diseases of international importance to member states and also makes use of the "WHO Emergency Scheme for Epidemics''. Whenever necessary, the aim of International Health Regulations is to ensure maximum security against international spread of diseases with the minimum interference in world traffic.

The WHO has also paid attention in its programme of work to non-communicable disease problems such as cancer, cardiovascular diseases, genetic disorders, mental disorders, drug addiction and dental diseases.

The activities of WHO have also branched out into the fields of vector biological products, drug evaluation, and monitoring and health laboratory technology as these activities are relevant to the control of both communicable and non-communicable diseases.

Immunisation against common diseases of childhood (Expanded Programme on Immunisation) is now a priority programme of the WHO. The 30$^{th}$ World Health Assembly adopted a resolution aimed at ensuring immunisation of all children by 1990.

**2. Development of Comprehensive Health Services**

WHO's most important single function is to promote and support national health policy development and the development of comprehensive national health programmes. This broad field of endeavour encompasses a wide variety of activities such as organising health systems based on primary health care, the development of health manpower and utilisation, building of long-term national capability, particularly in the areas of health infrastructure development, and managerial capabilities (including monitoring and evaluation) and health services research. Appropriate Technology for Health (ATH) is another new programme launched by the WHO to encourage self-sufficiency in solving health problems. The new programme is part of WHO's efforts to build up primary health care. WHO's main activities in 1980 were towards promoting national, regional and global strategies for the attainment of Health For All by 2000 AD.

### 3. Family Health

Family health is one of the major activities of WHO since' 1970, and is broadly subdivided into maternal and child health care, human reproduction, nutrition and health education. The chief concern is the improvement of the quality of life of the family as a unit.

### 4. Environmental Health

Promotion of environmental health has always been an important activity of WHO. WHO advises governments on national programmes for the provision of basic sanitary services. Recent activities are directed to the protection of the quality of air, water and food; health conditions of work, radiation protection and early identification of new hazards originating from new technological developments. A number of programmes have been developed such as the 'WHO Environmental Health Criteria Programme' and 'WHO Environmental Health' Monitoring Programme' towards, improving environmental health. The WHO is committed to attaining the target adopted by Habitat, the PN Conference on Human Settlements that was to have "Water for All by the year 1990"

### 5. Health Statistics

From its earliest days in 1947, WHO has been concerned with the dissemination of a wide variety of morbidity and mortality statistics relating to health problems. The data is published in the (a) Weekly Epidemiological Record (b) World Health Statistics Quarterly and (c) World Health Statistics Annual, readers interested in current data may obtain it from the Chief Statistician, Dissemination of Statistical

Information, WHO, Geneva. In order that statistics from different countries may be comparable, WHO publishes 'International Classification of Diseases' which is updated every 10th year. The Tenth Revision of ICD came into effect from 1 January, 1993. Assistance is also given to countries in the improvement of their medical records, and in the planning and operating national health information systems.

### 6. Bio-Medical Research

The WHO does not itself carry out research, but stimulates and coordinates research works. It has established a world-wide network of 'WHO collaborating centres, besides awarding grants to research workers and research institutions for promoting research. There are Regional *Advisory* Committees on health research which define regional health research priorities and a Global Advisory Committee, which in close collaboration with the regional committee deals with policy issues of global import. Six tropical diseases (malaria, schistosomiasis, trypanosomiasis, filariasis, leishmaniasis and leprosy) are, the target of WHO special programme for Research and Training in Tropical Diseases to develop new tools, strengthen research institutions and training workers in the countries affected.

### 7. Health Literature and Information

WHO acts as a clearing house for information on health problems? Its publications comprise hundreds of titles on a wide variety of health subjects. The WHO library is one of the satellite centres of the Medical Literature Analysis and Retrieval System of the U.S. National Library of Medicine. The Medical Literature Analysis and Retrieval System is the only fully computerised indexing system covering the whole of medicine on an international basis. The WHO has also a public information service both at the headquarters and each of the six regional offices.

### 8. Cooperation with Other Organisations

WHO collaborates with the UN and with the other specialised agencies, and maintains various degrees of working relationships. Besides, WHO has also established relations with a number of international governmental organisations.

## Structure

The WHO consists of three principal organs: the World Health Assembly, the Executive Board and the Secretariat.

**a.** **The World Health Assembly:** This is the "Health Parliament" of nations and the supreme governing body of the organisation. It meets annually, usually in May, and generally at the headquarters in Geneva, but from time to time in other countries. The Assembly is composed of delegates representing member states, each of which has one vote. The main functions of the Health Assembly are:

i. to determine international health policy and programmes,
ii. to review the work of the past year,
iii. to approve the budget needed for the following year,
iv. to elect member states to designate a person to serve for three years on the Executive Board and to replace the retiring members. The Health Assembly also appoints the Director General on the nomination of the Executive Board. It is now the practice to organise on the occasion of each Health Assembly, "technical discussions" on some subjects of world interest.

**b.** **The Executive Board**: The Board had originally 18 members, each designated by a member state. Subsequently, the number was raised to 24 and 30. The Health Assembly (1976) increased the membership from 30 to 31, providing that no fewer than three are to be elected from each of the WHO regions. The members of the board are to be technically qualified in the field of health but do not represent their governments. One third of the membership is renewed every year. The Executive Board meets at least twice a year, generally in January and shortly after the meeting of the World Health Assembly in May. The main work of the Board is to give effect to the decisions and policies of the Assembly. The Board also has power to take action itself in an emergency, such as epidemics, earthquakes and floods where immediate action is needed.

**c.** **The Secretariat:** The secretariat is headed by the Director General who is the chief technical and administrative officer of the Organisation. The primary function of the WHO secretariat is to provide member states with technical and managerial support for their national health development programmes. While in 1948, WHO staff counted 250 persons, the Organisation in 1985 counted 4475 international public servants. At WHO headquarters in Geneva, there are 5 Assistant Director Generals each of who is responsible for the work of such divisions as may from time to time .be assigned to him by the Director General. On 31 December, 1985, the WHO Secretariat comprised of the following divisions:

1. Division of epidemiological surveillance and health situation and trend assessment
2. Division of communicable diseases
3. Division of vector biology and control
4. Division of environmental health
5. Division of public information and education for health
6. Division of mental health
7. Division of diagnostic, therapeutic and rehabilitative technology
8. Division of strengthening of health services
9. Division of family health
10. Division of non-communicable diseases
11. Division of health manpower development
12. Division of information systems support
13. Division of personnel and general services
14. Division of budget and finance

## Regions

In order to meet the special health needs of different areas, WHO has established six regional organisations.

| Region | Headquarters |
|---|---|
| 1. South East Asia | New Delhi (India) |
| 2. Africa | Harare (Zimbabwe) |
| 3.The Americas | Washington D.C. (U.S.A.) |
| 4. Europe | Copenhagen (Denmark) |
| 5. Eastern Mediterranean | Alexandria (Egypt) |
| 6. Western Pacific | Manila (Philippines) |

**WHO Regional Organisation**

The regional organisations are an integral part of the WHO and have under the constitution an important part in implementing the policies and programmes of the WHO. The regional office is headed by the Regional Director, who is assisted by technical and administrative officers, and members of the secretariat. There is a regional committee composed of representatives of the member states in the region. Regional committees meet once a year to review health work in the region, and plan its continuation and development. Regional plans are amalgamated into overall plans for the Organisation by the, Director General at WHO's headquarters, in Geneva.

The WHO activities in the regions cover a wide range of subjects such as malaria eradication, tuberculosis control, control of other communicable diseases, health laboratory services and production of vaccines, health statistics, public health administration and rural health services, maternal and child health, nursing, environmental health and water supply, health education, nutrition, mental health, dental health, medical rehabilitation, quality control of drugs and medical education.

## 3.2 Other United Nations Agencies (UNICEF)

UNICEF (United Nations International Children's Emergency Fund) is one of the specialised agencies of the United Nations. It was established in 1946 by the United Nations General Assembly to deal with rehabilitation of children in war ravaged countries. In 1953, when the emergency functions were over, the General Assembly gave it a new name "U.N. Children's Fund" but retained the initials, UNICEF. UNICEF is governed by a thirty-nation Executive Board. The headquarters of the UNICEF is at United Nations, New York.

UNICEF works in close collaboration with WHO, and the other specialised agencies of the United Nations like UNDP, FAO and UNESCO. In the early years, UNICEF and WHO worked together on urgent problems such as malaria, tuberculosis and venereal diseases. Later, its assistance to countries covered such fields as maternal and child health, nutrition, environmental sanitation (especially the provision of water supplies to rural communities), health centres and health education and programmes which would directly or indirectly, benefit child health.

More recently, the tendency has been for UNICEF to turn away from campaigns for the eradication of specific diseases unless they are of direct benefit to mothers and children. Greater attention is being given to the concept of the "whole child" meaning that assistance should hence forth be geared not only to health and nutrition, as before, which are of immediate benefit to children, but also to their long-term personal development and to the development of the countries in which they live. This approach is also known as 'country health programming' in which UNICEF is currently interested so as to meet the needs of children as an integral part of the country's development effort.

**Content of Service**

a. **Child health:** UNICEF has provided substantial aid for the-production of vaccines and sera in many countries. UNICEF has supported India's BCG vaccination programme from its inception. It has also assisted in the erection of a penicillin plant,

donated two plants for the manufacture of triple vaccine and iodized salt. UNICEF has also assisted environmental sanitation programmes emphasising safe and sufficient water for drinking and household use in rural areas. The purpose is not only to reduce child illness and death, but to improve the quality of life in the villages. Currently, UNICEF is focusing attention on providing primary health care to mothers and children. Emphasis is placed on immunisation; infant and young child care; family planning aspects of family health; safe water and adequate sanitation. The services contemplated are intended to be organised so that the local community can participate in planning personnel and material support. The services will be delivered economically at the village level through residents, volunteers or part-time primary health workers selected for the purpose with the agreement of the local community.

**b. Child Nutrition:** UNICEF gives high priority to improving child nutrition. Its aid for child nutrition, which first took the form of supplementing child feeding, began to expand in mid-1950s with *the* development of low-cost protein rich food mixtures. In collaboration with FAO, UNICEF also began aiding "applied nutrition" programmes through such channels as community development, agricultural extension, schools and health services so as to stimulate and help the rural population to grow and eat the foods it required for better child nutrition. The UNICEF has supplied equipment for modern dairy plants in various parts of Nigeria. Specific aid is also given for intervention against nutritional deficiency diseases, viz. provision of large doses of vitamin A in areas where exophthalmia is prevalent; enrichment of salt with iodine in areas of endemic goitre; provision of iron and foliate supplements to combat anaemia and enrichment of foods. More recently, FAO, UNICEF and WHO have been encouraging the development of national food and nutrition policies that makes provision for child nutrition.

**c. Family and Child Welfare:** The purpose is to improve the care of children, both within and outside their homes through such means as parent education, day-care centers, child welfare, youth agencies and women's clubs. These services are carried out not as separate projects but as part of health, nutrition and education or home economics extension programmes.

**d. Education - Formal and Non-Formal:** In collaboration with UNESCO, UNICEF is assisting in the expansion and improvement of teaching science, supply of laboratories

equipment, workshop tools, library books; audiovisual aids are being made available to educational institutions. Emphasis is placed on the kind of schooling relevant to the environment and future life of the children.

Currently, UNICEF is promoting a campaign known as GOBI campaign to encourage 4 strategies for a "child health revolution".

- G for growth charts to better monitoring child development
- O for oral dehydration to treat all mild and moderate dehydration
- B for breast feeding, and
- I for immunisation against measles, diphtheria, polio, tetanus and tuberculosis.

Since 1976, UNICEF has been participating in Urban Basic Services (UBS). The aim of the UBS projects is to upgrade basic services (e.g., health, nutrition, water supply, sanitation and education) - especially for, children and women - in selected cities and towns. The overall objective is to improve the degree and quality of life and development of the children of urban low-income families.

In short, UNICEF activities cover programmes assisting in child survival, protection and development; interventions like immunisation, improved infant feeding practices; child growth monitoring, home-based diarrhoea management, drinking water, environmental sanitation, birth spacing, education of girls and income-generating activities for women. As full partners in primary health care, UNICEF and WHO have been developing joint strategies in support of its implementation at country level.

**UNICEF Regions**

The regions of UNICEF are:

1. The Americans and the Caribbean regional office, Panama City, Panama.
2. Central and Eastern Europe, Commonwealth of Independent States regional office, Geneva, Switzerland.
3. Central and Eastern Europe, Commonwealth of Independent States regional office, Bangkok, Thailand.
4. Eastern and Southern Africa regional office, Nairobi, Kenya.
5. Middle East and North Africa regional office, Amman, Jordan.
6. South Asia regional office, Katmandu, Nepal.
7. West and Central Africa regional office.

**West and Central Africa Regional Office**

Regional office: UNICEF WCARO
BP, 29720, Dakar/Yoff
e-mail:

**Countries in this Region**

- Benin
- Democratic Republic of Congo
- Burkina Faso
- Cote d'Ivoire
- Cameroun
- Gabon
- Cape Verde
- Gambia
- Central African Republic
- Ghana
- Chad
- Liberia
- Guinea Bissau
- Mali
- Mauritania
- Nigeria
- Sénégal
- Sao Tome and Principe
- Sierra Leone
- Togo

**The Functions of the Region include**

- child survival by fostering respect for the rights of children, whether in peace or in war, they help to ensure that they live and prosper.
- supports soap operas raising awareness about HIV/AIDS in Niger
- Mia Fawow sees children returning to schools in Northern Central African Republic.

**Nigeria UNICEF Office**

The UNICEF's overall goal that the Nigerian office pursues is to promote and protect the rights of children and women, through enhancing the capacity and commitment of government and civil

society. This includes reducing geographical, sectoral and gender disparities in selected programme areas, reducing infant, fewer than five and maternal mortality, and contributing to HIV/AIDS prevention, malaria control, micro-nutrient deficiency control, basic education, and access to safe water supply and sanitation.

**Nigeria UNICEF Office (Head Office)**

UNICEF, UN House,
Plot 617/618,
Central Area District,
Diplomatic Zone,
P.M.B. 2851, Garki Abuja-FTC, Nigeria

**Zonal Offices:**

1. Bauchi :
   UNICEF, P.M.B. 0038,
   20, Abdulkadir Ahmed Road,
   Opposite State Library,
   Commercial Lay-out

2. Enugu :
   UNICEF, 32/34, Ishielu Avenue,
   P.M.B. 1644

3. Kaduna :
   UNICEF, 53, Yakubu Avenue,
   U/Rimi GRA, P.O. Box 581

4. Lagos :
   UNICEF, 14B, Lugard Avenue, Ikoyi,
   P.O. Box 1282

## 3.2.1 UNDP

The United Nations Development Programme (UNDP) was established in 1966. It is the main source of funds for technical assistance. The member countries -rich and poor -of the United Nations meet annually and pledge contributions to the UNDP.

The basic objective of the UNDP is to help poorer nations develop their human and natural resources more fully. The UNDP projects cover

virtually every economic and social sector - agriculture, industry, education and science, health, social welfare etc.

## 3.3 UN Fund for Population Activities

The United Nations Fund for Population Activities (UNFPA) has been providing assistance to Nigeria. In addition to funding national level schemes, area projects for intensive development of health and family welfare infrastructure and improvement in the available services in the rural areas have been under implementation.

The UNFPA inputs are designed to develop national capability for the manufacture of contraceptives, to develop population education programmes, to undertake organised sector projects, to strengthen programme management as well as to improve the output of grass-root level health workers and introduction of innovative approaches to family planning and Maternal Child Health care (MCH).

## 3.4 FAO

The Food and Agriculture Organisation (FAO) was formed in 1945 with headquarters in Rome. It was the first United Nations Organisation specialised agency created to look after several areas of world cooperation. The chief aims of FAO are:

- to help nations raise living standards
- to improve nutrition of the people of all countries
- to increase the efficiency of farming, forestry and fisheries
- to better the condition of rural people and, through all these means, to widen the opportunity of all people for productive work.

FAO's prime concern is the increased production of food to keep pace with the ever-growing world population. The most important aspect of FAO's work is ensuring that the food is consumed by the people who need it, in sufficient quantities and in right proportions, to develop and maintain a better state of nutrition throughout the world. In this context, the FAO has organised a world Freedom from Hunger Campaign (FFHC) in 1960. The main objective of the campaign is to combat malnutrition and to disseminate information and education. The FAO is also collaborating with other international agencies in the applied nutrition programmes. The joint WHO/FAO expert committees have provided the basis for many cooperative activities – nutritional surveys, training courses, seminars and the coordination of research programmes on brucellosis and other zoonoses.

## 3.5 ILO

Soon after the First World War, it was recognised that problems of industry, like diseases, know no frontiers. In 1919, the International Labour Organisation (I.L.O.) was established as an affiliate of the League of Nations to improve the working and living conditions of the working population all over the world. The purposes of ILO are:

- to contribute to the establishment of lasting peace by promoting social justice
- to improve, through international action, labour conditions, and living standards and
- to promote economic and social stability.

The International Labour Code is a collection of international minimum standards related to health, welfare, living and working conditions of workers all over the world. The ILO also provides assistance to organisations interested in the betterment of living and employment standards. There is a close collaboration between ILO and WHO in the field of health and labour. The headquarters of ILO is in Geneva, Switzerland.

## 3.6 World Bank

World Bank is a specialised agency of the United Nations. It was established with the purpose of helping less developed countries raise their living standards. The powers of the Bank are vested in a Board of Governors. The Bank gives loans for projects that will lead to economic growth (e.g., Nigeria's Population Projects). The projects are usually concerned with electric power, roads, railways, agriculture, water supply, education, family planning, etc. Health and environmental components have been added to many projects. Cooperative programmes exist between WHO and the Bank, e.g. projects for water supply, World Food Programme, Population Control, and the control of onchocerciasis programme in West Africa.

## 3.7 Health Work of Bilateral Agencies

### 3.7.1 USAID

The US Government presently extends aid to India through three agencies:

- United States Agency for International Development (USAID),
- The Public Law 480 (Food for Peace) Programme,
- The US Export-Import Bank.

The USAID was created in 1961; it is in charge of activities previously administered by the Technical Cooperation Mission (TCM). A USAID mission functions in Nigeria. Both grants and loans are extended by the Agency.

The US has been assisting in a number of projects designed to improve the health of India's people. These are:

- malaria eradication,
- medical education ,
- nursing education,
- health education,
- water supply and sanitation,
- control of communicable diseases ,
- nutrition and
- family planning.

The recent trend in assistance from the USA is increasingly in the support of agricultural and family planning programmes.

### 3.7.2 Swedish International Development Agency (SIDA)

The Swedish International Development Agency is assisting the National Tuberculosis Control Programme since 1979. The SIDA assistance is usually spent on procurement of supplies like X-ray unit, microscopes and anti-tuberculosis drugs. SIDA authorities are also supporting the Short Course Chemotherapy Drug Regimens under pilot study.

### 3.7.4 DANIDA

The Government of Denmark is providing assistance for the development of services under National Blindness Control Programme since 1978.

## 3.8 Non-Government and Other Agencies

### 3.8.1 Rockefeller Foundation

The Rockefeller Foundation is a philanthropic organisation chartered in 1913 and endowed by Mr. John D. Rockefeller. Its purpose is to promote the well-being of mankind throughout the world. In its early years, the Foundation was active chiefly in public health and medical education. Subsequently, its interest was expanded to include the

advancement of life sciences, the social sciences, the humanities and the agricultural sciences.
The work of the Rockefeller Foundation in Nigeria began in 1920 with a scheme for the control of hookworm disease. Since then, the Foundation has been associated with several medical and public health programmes in Nigeria. The Foundation's programme included the training of competent teachers and research workers; training abroad of candidates from Nigeria through fellowships and travel grants; the sponsoring of visits of a large number of medical specialists from the USA; providing grants-in-aid to selected institutions: development of medical college libraries; population studies; assistance to research projects and institutions (e.g., National Institute of Virology at Jos, Plateau state and other centres in Nigeria. At present, the Foundation is directing its support to the improvement of agriculture, family planning and rural training centres as well as to medical education.

### 3.8.2 Ford Foundation

Whereas the Rockefeller Foundation earlier concentrated most of its assistance on universities and post-graduate institutions, on professional education and on research, the Ford Foundation has been active in the development of rural health services and family planning. The Ford Foundation's West Africa office is based in Lagos, Nigeria. Their work in the region dates back to 1958. The Foundation has helped Nigeria in the following projects:

1. Orientation training centres were set up with help from the Ford Foundation. The centres provide training courses in public service professionals.

2. Research-cum-action projects. These projects were aimed at solving some of the basic problems in environmental sanitation, e.g. designing and construction of hand-flushed acceptable sanitary latrines in rural areas.

3. Pilot project in rural health services. Among a rural population of 100,000 people, an attempt was made to develop and operate a coordinated type of health service which will provide a useful model for health administrators in the country.

4. Establishment of NIHAE. In the last few years, the Ford Foundation has supported the establishment of the National Institute of Health: Administration and Education.

5. Family Planning programme: The Foundation is supporting research in reproductive biology and in the family planning fellowship programmes.

The grant strategies seek to:

- empower women and young people by improving the quality of their health and social status,
- promote arts and culture as resources for enterprise development and expressions of human development,
- strengthen the enforcement of human rights,
- enhance the livelihoods of the poor by broadening access to financial services.

The Foundation's latest grants in the region include African Council of AIDS Service Organisations, CLEEN Foundation and the Centre for Social Justice Limited.

### 3.8.3 Cooperative for Assistance and Relief Everywhere (CARE)

CARE (Co-operative for Assistance and Relief Everywhere) was founded in North America in the wake of the Second World War in the year 1945. It is one of the world's largest independent, non-profit, non-sectarian international relief and development organisation. CARE provides emergency short and long term development assistance.

Till the end of 1980s, the primary objective of CARE was to provide food for children in the age group of 6-11 years. From mid 1980s, CARE focused its food support in the ICDS programme and in development of programmes in the areas of health and income supplementation. It is helping in the following projects: Integrated Nutrition and Health Project; Better Health and Nutrition Project; Anaemia Control Project; Improving Women's Health Project; Improved Health Care for Adolescent Girls Project; Child Survival Project; Improving Women's Reproductive Health and Family Spacing Project, Integrated Development Project etc.

CARE works in partnership with the Federal Government of Nigeria, State Governments, Local Governments and NGOs etc.

### 3.8.4 International Red Cross

The Red Cross is a non-political non-official international humanitarian organisation devoted to the service of mankind in peace and war. It was founded by Henry Dunant, a young Swiss businessman, who, when

travelling through North Italy in 1859 happened to be on the scene of one of the most savage battles of history, the battle of Solferino. Appalled by the neglect of thousands of the wounded and dying soldiers, Dunant recruited volunteers from nearby villages to help relieve their suffering. Later, in his book "Un Souvenir de Solferine" and in countless interviews with eminent persons, throughout Europe, Dunant urged that voluntary national societies be founded "which in time of war would render aid to the wounded without distinction of nationality". He proposed further that these societies should have a protective emblem and train workers for their services to the wounded and they should be protected by international treaty.

Dunant's plea met with success. The First Geneva Convention took place in 1864 and a treaty was signed for the relief of the wounded and the sick soldiers in the field. Thus came into being the International Committee of the Red Cross (ICRC), an independent, neutral institution. It has since grown into a mighty mission with branches all over the world symbolising the spirit of compassion and universal brotherhood: In 1919, the League of the Red Cross Society was created with headquarters in Geneva to coordinate the work of the national societies, which now number more than 90.

**Role of Red Cross**

In the beginning, the role of the Red Cross, as conceived by Dunant, was largely confined to humanitarian service on behalf of the victims of war. Soon thereafter, it was realised that natural disasters too bring in their wake great human sufferings. On such occasions, there is equally a great need for help among nations "as good neighbours". Later on, the work of the Red Cross was extended to other programmes which would prevent human suffering. These comprise service to armed forces, service to war veterans, disaster service, first aid and nursing, health education, maternity and child welfare services.

## 3.9 Rotary International

Rotary International is an organisation of Rotary Clubs (service clubs) located all over the world (more than 32,000 clubs in more than 200 countries and geographical areas). The members of Rotary Clubs are known as *Rotarian.* The stated purpose of the group is to bring together business and professional leaders who provide humanitarian service, encourage high ethical standards in all vocations, and help build goodwill and peace in the world. The Club has a newsletter named *The Rotarian*. Members meet weekly for breakfast, lunch or dinner, which are a social event as well as a time to organise work on their service goals.

Their most-known motto is "Service above Self" Another motto is "They profit most who serve best". The resolution to remove gender specific terminology from secondary motto was taken by Rotary International Council Legislation in 2004.

**History**

The first Rotary Club was founded in 1905 in Chicago by Attorney Paul P. Harris and three other businessmen. On February 23, 1905, Harris held the first meeting with three friends, Silvester Schiele, coal merchant, Gustave E. Loehr, mines engineer and Hiram E. Shorey, tailor. The members chose the name Rotary because they rotated club meetings to each member's office each week. The National Association of Rotary Clubs was formed in 1910. That same year, Rotary chartered Winnipeg, Manitoba, Canada, marking the first establishment of an American style service club states. This was followed in 1911 by the founding of the first club outside North America in Dublin; early international branches were Cuba 1919 and India 1920. The name was changed to *Rot* in 1922 because branches had been formed in six continents.

As of 2006, Rotary has more than 1.2 million members in over 32,000 clubs among 200 countries and geographical areas, making it the most widespread club by branches and second largest service club by membership, behind Lions Club International.

Other Rotary sponsored organisations include: **Rotaract** – a service club for young men and women aged 18 to 30 with around 185,000 members in 8,000 clubs in 155 countries; **Interact** – a service club consisting of more than 239,000 young people aged 14 – 18 with over 10,400 clubs in 108 countries; **Rotary Community Corps (RCC)** – a volunteer organisation with an estimated 103,000 non-Rotarian men and women in over 4,400 communities in 68 countries.

**Rotary Programmes**

**1. Polio Plus**

The most notable current global project, Polio Plus, is contributing to the global eradication of polio. Since the beginning of the project in 1985, Rotarians have contributed over US$600 million and tens of thousands of volunteer hours, leading to the inoculation of more than two billion of the world's children. Inspired by Rotary's commitment, the World Health Organisation (WHO) passed a resolution in 1988 to eradicate polio by 2000. Now in partnership with WHO, UNICEF Rotary International and the US Centres for Disease Control and

Prevention, Rotary is recognised by the United Nations as the key private partner in the eradication effort.

There has been some limited criticism concerning the Rotary International programme for polio eradication, which is supported by the help of World Health Organisation. There are some reservations regarding the adaptation capabilities of the virus and some of the oral vaccines, which have been reported to cause infection resurgences. As stated by Vaccine Alliance, however, in spite of the limited risk of polio vaccination, it would be neither prudent nor practicable to cease the vaccination programme until there is a strong evidence that the "all wild polio virus transmission [has been] stopped". In a recent speech at the Rotary International Convention, held at the Bella Centre in Copenhagen, Bruce Cohick stated that polio in all its known wild forms will be eliminated by late 2008, provided efforts in Nigeria, Afghanistan, Pakistan and India all progress with their current momentum.

**Other programmes include**

i. exchanges and scholarships,
ii. rotary centres for international studies,
iii. individual club efforts.

## 4.0 CONCLUSION

Management and funding health had gone beyond what the government alone can do for her citizens; the involvement of non-governmental organisations (NGO's) underscored the improvement of health care services we experience today worldwide. The contributions of these non-governmental organisations are enormous.

## 5.0 SUMMARY

This unit has looked into the account of the early health organisations which preceded World Health Organisation, the birth of World Health Organisation, other United Nations Agencies and some health works of bilateral agencies.

## 6.0 TUTOR-MARKED ASSIGNMENT

Discuss the birth and functions of World Health Organisation.

## 7.0 REFERENCES/FURTHER READING

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# UNIT 4 EVALUATION OF HEALTH SERVICES

## CONTENTS



## 1.0 INTRODUCTION

Management is a process and the conclusion of this process is evaluation. For this reason, this unit will be looking at evaluation of health care services. It is hoped that as you go through this unit, it will improve your skill as a manager.

## 2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define evaluation as a concept
- discuss the steps of evaluation
- describe the elements of evaluation of health services.

## 3.0 MAIN CONTENT

### 3.1 Evaluation of Health Services

Health services have become complex. There has been a growing concern about their functions both in the developed and developing countries. Questions are raised about the quality of medical care, utilisation and coverage of health services, benefits to community health in terms of morbidity and mortality reduction and improvement in the health status of the recipients of medical care. An evaluation study addresses itself to these issues.

### 3.1.1 General Steps of Evaluation

The basic steps involved are as follows:

i. determine what is to be evaluated
ii. establish standards and criteria
iii. plan the methodology to be applied
iv. gather information
v. analyse the results
vi. take action
vii. re-evaluate

**i. Determine what is to be evaluated**

Generally speaking, there are three types of evaluation:

**a. Evaluation of "structure":** This is evaluation of whether facilities, equipment, manpower and organisation meet a standard accepted by experts as good.

**b. Evaluation of "process":** The process of medical care includes the problems of recognition, diagnostic procedures, treatment and clinical management, care and prevention. The way in which the various activities of the programme are carried out is evaluated by comparing with a predetermined standard. An objective and systematical way of evaluating the physical (or nurse) performance is known as "medical (or nursing) audit".

**c. Evaluation of "outcome":** This is concerned with the end results, that is, whether persons using health services experience measurable benefits such as improved survival or reduced disability. The traditional outcome components are the "5 Ds "of ill health, viz. disease, discomfort, dissatisfaction, disability and death.

### ii. Establishment of Standards and Criteria

Standards and criteria must be established to determine how well the desired objectives have been attained. Naturally such standards are a prerequisite for evaluation. Standards and criteria must be developed in accordance with the focus of evaluation- structural criteria: e.g. physical facilities and equipment; process criteria: e.g. every prenatal mother must receive 6 check-ups; every laboratory technician must examine 100 blood smears, etc. outcome criteria: e.g. alterations in patient health status (cured, death, disability); or behaviour resulting from health care (satisfaction, dissatisfaction); or the education process (e.g. cessation of smoking, acceptances of a small family norm), etc.

### iii. Planning the Methodology

A form in keeping with the purpose of evaluation must be prepared for gathering information desired. Standards and criteria must be included at the planning stages.

### iv. Gathering Information

Evaluation requires collection of data or information. The type of information required may include political, cultural, economic, environmental and administrative factors influencing health situation as well as mortality and morbidity statistics. It may also concern health and related socio-economic policies, plans and programmes as well as the extent, scope and use of health systems, service and institutions. The amount of data required will depend on the purpose and use of the evaluation.

### v. Analysis result

The analysis and interpretation of data and feedback to all individuals concerned should take place within the shortest time feasible, once information has been gathered. In addition, opportunities should be provided for discussing the evaluation results.

### vi. Taking action

For evaluation to be truly productive, emphasis should be placed on actions –actions designed to support, strengthen or otherwise modify the services involved. This may also call for shifting priorities, revising objectives, or development of new programmes or services to meet previously unidentified needs.

**vii. Re-evaluation**

Evaluation is an on-going process aimed mainly at rendering health activities more relevant, more efficient and more effective.

## 3.2 Elements of Evaluation

Evaluation is perhaps the most difficult task in the whole area of health services. The components of the evaluation process are:

i. **Relevance:** Relevance or requisiteness relates to the apparatus of the services, whether it is needed at all. If there is no need, the services can hardly be of any value. For example, vaccination against smallpox is now irrelevant because the disease no longer exists.

ii. **Adequacy:** it implies that sufficient attention has been paid to certain previously determined course of action. For example, the staff allocated to a certain programme may be described as inadequate if sufficient attention was not paid to the quantum of work- load and targets to be achieved.

iii. **Accessibility**: it is the proportion of the given population that can be expected to use a specified service, etc. the barriers to accessibility may be physical (e.g. distance, travel, time); economic (e.g. travel cost, fee charged); or social and cultural (e.g. caste or language barrier).

iv. **Acceptability**: The services provided may be accessible, but not acceptable to all e.g. male sterilisation, screening for rectal cancer.

v. **Effectiveness:** it is the extent to which the underlying problem is prevented or alleviated. Thus, it measures the degree of attainment of the predetermined objectives and targets of the programme, service or institution. This is expressed, if possible, in terms of health benefit, problem reduction or an improvement of an unsatisfactory health situation. The ultimate measure of effectiveness will be the reduction in morbidity and mortality rates.

vi. **Efficiency:** it is a measure of how well resources (money, men, material and time) are utilised to achieve effectiveness. The following examples will illustrate the number of immunisations provided in a year as compared with an accepted norm; the

percentage of bed occupancy, cost per day in hospital, cost per patient treated, etc.

vii. **Impact**: it is an expression of the overall effect of a programme, service or institution on health status and socio-economic development. For example, as a result of malaria control in India, not only the incidence of malaria was cut down, but all aspects of life-agricultural, industrial and social-showed an improvement. If the target of 100 per cent immunisation has been reached, it must also lead to reduction in the incidence or elimination of vaccine-preventable diseases. If the target of village water supply has been reached, it must also lead to a reduction in the incidence of diarrhoea disease. Planning and evaluating must be viewed as a continuous interactive process, leading to continual modification both of objectives and plans. Successful evaluation may also depend upon whether the means of evaluation were built into the design of the programme before it was implemented.

## 4.0 CONCLUSION

Planning and evaluation must be viewed as a continuous interactive process, leading to continual modification both of objectives and plans. Successful evaluation may also depend upon whether the means of evaluation were built into the design of the programme before it was implemented or not.

## 5.0 SUMMARY

This final unit has looked into evaluation of health services i.e. steps of evaluation and elements of evaluation.

## 6.0 TUTOR-MARKED ASSIGNMENT

Discuss the interrelatedness of planning and evaluation of health services.

## 7.0 REFERENCES/FURTHER READING

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