LOCAL MORTALITY DATAPACK 1979-92

FILES

Population	: Estimated resident populations, sex and 5 year age-groups	England and Wales county and county districts
Mortality	: Selected causes, sex, 5 year age-groups and divided into government office regions	England and Wales county and county districts

LOOK-UP TABLES

Causes	: List of selected causes and relevant codes
County	: List of counties in England & Wales and their relevant codes
Cdlist	: List of county districts in England & Wales and their relevant codes
Areaclas	: List of families, groups and clusters assigned under the latest method of area classification
SexAge	: List of sex/age codes and their relevant labels

The population figures shown in **7992pops** are mid-year estimates of the resident population of England and Wales, rebased following the 1991 Census of Population. These estimates include members of HM and non-UK armed forces stationed in England and Wales.

The mortality data gives numbers of deaths registered in England and Wales during the period 1979 to 1992 for a selected list of 119 causes and for county, county district, sex and 5 year age-group.

From 1986 the number of deaths by cause excludes neonatal deaths ie deaths of persons aged under 28 days, but these **are** included in the all cause category. A neonatal death certificate was introduced in January 1986, from which it is not possible to assign an underlying cause of death.

The mortality data for all the local authorities are contained in files separated into 10 Government Office Regions plus Wales, by grouping the counties as follows:

North East

Cleveland, Durham, Northumberland and Tyne & Wear.

North West

Cheshire, Cumbria, Greater Manchester and Lancashire.

Merseyside

Merseyside.

Yorkshire & Humberside

Humberside, North Yorkshire, South Yorkshire and West Yorkshire.

East Midlands

Derbyshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire.

West Midlands

Hereford & Worcester, Shropshire, Staffordshire, Warwickshire and West Midlands.

South West

Avon, Cornwall, Devon, Dorset, Gloucestershire, Somerset and Wiltshire.

Eastern

Bedford, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk.

London

Greater London.

South East

Berkshire, Buckinghamshire, East Sussex, Hampshire, Isle of Wight, Kent, Oxfordshire, Surrey and West Sussex.

Wales

Clwyd, Dyfed, Gwent, Gwynedd, Mid Glamorgan, Powys, South Glamorgan and West Glamorgan.

The Government Office Region will be the primary classification system for the presentation of regional statistics and will replace the old Standard statistical regions from April 1997. Merseyside will not be adopted as a standard region for statistical purposes but separate figures for this area will be shown wherever possible. It will be a subset of the North West.

A summary of mortality statistics for the United Kingdom and constituent countries appears in the *Annual Abstract of Statistics*, issued by the Central Statistical Office. Similar data also appear in the WHO *World Health Statistics Annual*.

Other England & Wales Annual Reference Volumes (ARVs) on mortality include DH1 (mortality statistics : general), DH4 (mortality statistics : injury and poisoning), DH3 (mortality statistics : linked infant mortality), and DH6 (mortality statistics : childhood).

The series DH5 (mortality statistics : area) has now been discontinued and such tables as have been retained from it will in future appear in volume DH1. Table 4 from ARV DH5, showing deaths by age, sex and selected underlying cause for health and local authority areas is now produced only in unpublished form as table VS3. It is available from OPCS both on paper and on floppy disk.

Certification of cause of death

When a death occurs, the attending doctor is required to complete a certificate of cause of death to be taken to the local registrar of births and deaths. For

certain causes of death the procedures are different : for instance, if the death was not due to natural causes the case must be referred to a coroner.

Coding of the underlying cause of death

The death certificate mentioned above which is used in England and Wales accords with that recommended by the World Health Organisation (WHO). It is set out in two parts. Part I gives the condition or sequence of conditions leading directly to death, while Part II gives details of any associated conditions which contributed to the death.

The selection of the underlying cause of death is made from the condition or conditions mentioned on the certificate. The choice is made in accordance with international procedures, determined in the main from the statement of the certifier. These procedures have been established by WHO [3].

The classification of causes of death used in these data tables is the Ninth Revision of the International Classification of Diseases (ICD), use of which commenced in January 1979.

Amended causes of death

As noted above, the conditions mentioned on the death certificate are used to derive an underlying cause of death. In some cases however more information on causes of death may become available at a later stage, such that the underlying cause may be subsequently amended. OPCS uses these confidential details of amended cause wherever possible in its statistics and tables. Users with access to individual records of deaths as shown in the public record (which remains unchanged) may thus find some differences with published statistics.

At present there are two ways in which further details may be provided :

- by the use of digit 2 on the front or Box B on the back of the medical certificate of cause of death to indicate that more information will be provided to OPCS on request. In 1993 there were 18,525 deaths where Box B was ticked and from subsequent enquiry the underlying cause was amended for 3,825 (or

21%) of these. Thus its effect is limited - few conditions are affected and many of the amendments result only in changes within the same three-digit code.

- by coroners in supplying further details of deaths where an inquest took place or a post-mortem without inquest was carried out. These affect only deaths referred to coroners ie those thought not to be due to natural causes, or for other reasons.

- Up to 1992 OPCS also sent medical enquiries in cases for which insufficient details had been provided by the certifier for precise cause coding. 14,351 medical enquiries were sent in 1992, of which 7,425 (52%) resulted in a change to the underlying cause code.

Accelerated registrations

On 1 January 1978 certain provisions of the Criminal Law Act 1977, the Coroners (Amendment) Rules 1977, and the Registration of Births, Deaths and Marriages (Amendment) Regulations 1977 came into force. The two principal changes arising out of the legislation were :

(a) The abolition of the duty of a coroner's jury to name a person it finds guilty of causing a death, and of a coroner to commit that person for trial.

(b) An inquest might be adjourned because a person has been charged with an offence in connection with the death, or the police are investigating the circumstances surrounding the death. In such cases there was now provision for the death to be registered at the time of adjournment instead of, as previously, having to await the outcome of the criminal proceedings. The result of such proceedings would be notified by the coroner at a later date.

The legislation had a significant effect in the compilation of mortality statistics from injury or poisoning. Up to 1992, all deaths assigned to these causes are coded in two ways, as recommended in the ICD Ninth Revision, to nature of injury codes and to external cause of injury (E) codes. It was not possible to assign the correct E code to some of these accelerated registration cases

until results of proceedings were known.

In the period 1978 - 1992 all accelerated registrations which were not transport incidents were assigned to code E988.8 (injury by other specified means, undetermined whether accidentally or purposely inflicted). The effect of this practice on assigning deaths to suicide and homicide has been analysed recently[5,6]. The procedure since then has altered with the introduction of the new automated systems.

CHANGES IN MORTALITY DATA DURING 1979-92

Users of this datapack should note certain changes to the collection and coding of deaths data in recent years, which may affect their interpretation of trends in mortality. These changes include:

a. **The introduction of the Ninth Revision of the International Classification of Diseases in 1979**. This replaced the Eighth Revision which was used from 1968 to 1978. OPCS selected a 25% sample of death certificates for 1978, and cause coded these to both the Eighth and Ninth Revisions to give a guide to the effect of these changes on specific categories. The results of this bridge coding exercise were published in 1983[8] .

b. **The industrial action taken by registration officers in 1981 and 1982**, which affected the quality of information about deaths from injury and poisoning. This action meant that details normally supplied by coroners were not available and the statistics were significantly affected. Information normally requested to aid coding of underlying cause of death was also unavailable. Figures on injury and poisoning for 1981, with the exception of suicides, must thus be treated with caution. Categories such as 'transport accidents' and 'homicide' were significantly understated whereas 'non-specific accidents' and 'undetermined injuries' were overstated. Statistics relating to nature of injury were less affected by the absence of the coroners information.

Although industrial action extended into 1982 the coroners information was collected retrospectively for that year, so enabling more accurate figures to be

produced. However, details to aid cause coding were still unavailable in 1982. This resulted in more deaths than usual being assigned to 'unspecified' categories. Although ARV DH4 for 1981 was not published, the DH2 volume for that year was issued. More information may be found in the DH2 and DH4 volumes of that period [9] [10] [11] [12].

c. In 1984 OPCS decided to amend its **interpretation of WHO Rule 3** in the assignment of underlying cause of death. This resulted in a decrease in the numbers of deaths coded to pneumonia and a few other causes, and an increase in deaths from many other conditions - most of the latter being small increases. The background to this change is given in the 1984 ARV volume[13], which includes a table assessing the numerical effects of changes by underlying cause.

d. As from January 1986, registrars have recorded the following information on the draft entry form :

- the date when the certifying doctor last saw the deceased alive;
- whether the deceased was seen after death by a medical practitioner;
- whether the death was reported to a coroner, and by whom;
- whether the certifying practitioner indicated that death might have been linked to the deceased's employment.

The first three items had been recorded on the medical certificate for many years for legal and administrative purposes. The fourth resulted from legislation passed in 1985. Analysis of the numbers of deaths for 1987 which identified this possible link showed that the procedures for recording and reporting them were not in place[14]. Until these arrangements are revised the data will be poorly recorded.

e. **New stillbirth and neonatal death certificates** were introduced in January 1986. The new neonatal certificate included both maternal and foetal conditions. Using this means that it is not possible to assign an underlying cause of death for deaths under 28 days. From 1986 therefore, tables of deaths by cause and age do not include neonatals, although the all cause total for neonatals is often given. Details of neonatal deaths by cause may be found in the DH6 ARV[15].

f. **Base populations** The more recent estimates use a slightly different definition of residents from the pre-1981 estimates. Residents who were outside Great Britain on census night are now included whereas overseas visitors to Great Britain are now excluded. Consequently, the population estimates for mid-1981 onwards are not directly comparable with those produced for years before 1981.

g. **Boundary Changes.**Populations and deaths totals are those coded to county districts according to the boundary in the relevant year. There have been a number of boundary changes involving transfers of more than 100 residents during the period 1979-1992. Further details may be found in

OPCS Monitor PP1 94/1 Revised Population Estimates for 1981-1990
OPCS Monitor PP1 94/2 Mid-1993 Population estimates for England and Wales

REDEVELOPMENT OF MORTALITY STATISTICS 1993 onwards

This section contains important information for those wishing to combine data in this datapack with those for 1993 and later years

OPCS has recently carried out an extensive redevelopment of its collection and processing systems for population, health and registration data - in particular, for births and deaths. For deaths this has included: the progressive computerisation of registration in local offices; the move to a large deaths database to hold all deaths data from 1993; and the introduction of automated coding of cause of death. Further information about these changes is supplied below. Users should note that they include changes to rules for coding cause of death which bring England and Wales more into line with international practice.

Computerisation of registration

When a death occurs, the attending doctor will usually complete a certificate of cause of death. The next of kin, or other person registering the death then takes this to the local registrar who will generally produce a draft of the details about the death. Exceptions arise when the death is considered due to accidental or violent causes, or for other reasons, but these cases are small in number.

Until recently the registrar carried out the registration by filling out a form by hand, but this practice is now uncommon. Since 1987 the registration service has been computerised. The details from the medical certificate of cause of death and other particulars supplied by the informant are entered into a PC by the registrar. Draft details about the death (Annex B) are then printed automatically, and the information stored and sent weekly on floppy disk to OPCS for processing.

By January 1993 60 per cent of deaths were registered at offices which had been computerised and at present 80 percent come from this source. It is expected that eventually 95 per cent of death registrations will be handled in computerised offices. Redevelopment in this area has meant that information about most deaths can be handled more consistently and efficiently than before. Information on deaths from computerised offices is sent to OPCS on floppy disk, while details from non-computerised offices are sent on paper and then keyed in. This enables a smooth transition to the text recognition software used in automated cause coding.

Use of the deaths database

An important part of redevelopment at OPCS has been the introduction of a new database to store information on deaths. The information sent from registration offices is processed and edited, and then loaded onto the deaths database. Prior to 1993 OPCS produced an annual computer file containing details of all registrations in a particular year. This included only statistical codes and was regarded as a 'standard dataset', so that any later information received could not easily be incorporated.

In the new system there are two deaths databases, one for **public record** information and the other for **statistical** data. These two databases are intentionally not linked to each other. The public record database contains mainly textual information appearing on the death certificate. This corresponds to the details supplied by informants when registering a death and to applicants requesting a copy of the death certificate.

The deaths statistical database contains only coded details of each death, at varying levels of security. When outputs are required, the database can be accessed to supply information on individual deaths or to provide datasets for tabulation using standard software. Users should note that the database is continually being updated and amended as further information becomes available. However, once OPCS has created a standard dataset from which to produce outputs, any later version from the database is unlikely to be much different. The use of date-stamping means that it is generally possible to re-create database extracts from an earlier date. With date-stamping, every item of information for each death is assigned a date, indicating when that item was loaded onto the database. Any subsequent amendments are assigned an appropriate later date.

Automated cause coding (ACCS)

This new system is based largely on software developed by the US National Center for Health Statistics (NCHS). Initially, the TRACER package - developed specially for OPCS - converts text from the cause of death details supplied on death certificates to corresponding 'entity reference numbers' (ERNs). These ERNs are then converted into ICD9 codes, using MICAR software developed by NCHS. Finally, the individual cause codes are analysed for each death, taking account of sequence and position on the certificate, and by applying WHO rules an underlying cause of death code is assigned. The ACME package is used for this part of the process. The system has been described in more detail elsewhere[16].

The rules and procedures used in ACCS provide a consistent way of assigning underlying cause for each death by reducing the variation due to individual coders. They allow OPCS to present cause of death data which are in line with international practice. In addition, they make it easier to analyse all causes of death mentioned on the certificate. However, they also mean that some 1993 data may not easily be comparable with that for 1992 and earlier years. Reasons for this are discussed below.

Use of medical enquiries

Up to 1992, when the information provided by the certifying doctor was unclear or

was not final OPCS sent a letter to the certifier asking for further information to help assign an underlying cause of death. This procedure was not used in 1993 because we were unable to deal with these cases in a timely way. We now intend to re-introduce it at the same time as the implementation of ICD 10, planned for 1998. Absence of medical enquiries means that numbers of deaths from certain less specific causes will tend to increase for this reason alone. The numbers of deaths from more specific causes will go down by a corresponding number.

The total number of deaths registered in 1992 where a medical enquiry resulted in a change to the underlying cause code was 7,425. Note, however, that some of these changes were only to a different fourth-digit code for the same three-digit code.

There are few conditions where MEs make a particular impact. Many categories where MEs produced a net loss are the type that include less well defined descriptions - or 'residual' categories. Examples are: malignant neoplasm of other and ill-defined sites within the digestive organs (ICD 159), malignant neoplasm of other and ill-defined sites (195), malignant neoplasm without specification of site (199), neoplasm of unspecified nature (239), other diseases of respiratory system (519), and other disorders of intestine (569).

Conditions showing a marked increase because of MEs include: malignant neoplasm of small intestine (ICD 152), of pleura (163), and of eye (190), other malignant neoplasm of skin (173), bacterial meningitis (320), and osteoarthritis and allied disorders (715). Some conditions show a direct transfer eg the net 'loss' from heart failure (ICD 428) of 224 male deaths is nearly balanced by the net 'gain' of 240 deaths for ischaemic heart disease (410-414). For others the MEs were mostly internal transfers so that the new code differed from the old only in the fourth digit. An example of this is malignant neoplasm of skin (ICD 172), where MEs resulted in a 'loss' of 270 male deaths and a 'gain' of 239, producing a net loss of 31 (or -5 per cent).

These figures may be used as a measure of the effect of not having medical enquiries. Thus, in a year where medical enquiries were not used the number of male deaths assigned to septicaemia would have been some 16 per cent higher for this reason alone. In the same year the number of female deaths assigned to

peritonitis (ICD 567) would have been 9 per cent lower for this reason alone.

Further work is to be carried out by OPCS for broad age groups over an aggregate of recent annual data.

Use of WHO Rule 3

In general, the main change in introducing automated cause coding is in the interpretation of WHO Rule 3. The death certificate is set out in two parts: part I gives the condition or sequence of conditions leading to death, while part II gives details of any associated conditions. Rule 3 states that "if the condition selected by the General rule or Rules 1 or 2 can be considered a direct sequel of another reported condition, whether in part I or part II, select this primary condition". The interpretation of this rule was broadened by OPCS in 1984 so that certain conditions which are often terminal, such as bronchopneumonia (ICD 485) or pulmonary embolism (415.1), could be considered a direct sequel of any more specific condition reported. The more specific condition would then be regarded as the underlying cause.

This change meant that deaths from certain causes such as pneumonia declined in 1984, while deaths from causes often mentioned in part II increased. The change in 1993 is thus to move back to the internationally accepted interpretation of Rule 3 operating before 1984.

Causes of death which will show an apparent increase in 1993 as a result of this coding change may be identified by a negative percentage change - these include bronchopneumonia (ICD 485), pneumonia (486), pulmonary embolism (415.1), and heart failure (428). Among the large number of conditions which will show an apparent decrease in 1993 due to this change are: pulmonary tuberculosis (ICD 011), diabetes mellitus (250), rheumatoid arthritis (714), osteoporosis (733.0), other malignant neoplasm of skin (173), epilepsy (345), Alzheimer's disease (331.0), and Parkinson's disease (332). Most malignant neoplasms are little affected by the Rule 3 change.

It is worth noting that deaths assigned to external causes were little affected by the Rule 3 change in 1984. The procedures for assigning cause of death to

external cause did not allow for Rule 3 changes in that year, but current procedures do take this into account.

Similar information for a comprehensive list of conditions may be found in the 1984 annual volume[13]. This source also includes figures for deaths at ages under 75, and at ages 75 and over. However, there are few differences by age.

Using 1993 cause of death data

The discussion above examines the effect of two main changes in 1993 on cause of death statistics. There are also other changes in the way causes are now coded, mainly affecting deaths from external causes of injury and poisoning (ICD E800-E999) and deaths arising from complications of pregnancy, childbirth and the puerperium (630-676). For the latter we have found that automated cause coding results in apparently fewer maternal deaths, related both to the manner in which such deaths are rejected by ACCS to be manually cause coded and to international differences in the way pregnancy related deaths are coded. A special monitor analysing available information on maternal mortality for both 1993 and 1994 will be issued later in 1995.

For deaths from external causes the changes are more complex. A recent change affecting the data is the introduction of a revised coroner's reporting form in 1993. It is possible that not all these forms - with additional information on cause of death - are being returned to OPCS, and that as a result more deaths are being assigned to residual categories such as 'other and unspecified causes' (E928.9).

Following recent detailed investigation of the data, OPCS proposes to amend its systems to take account of errors in coding to external causes. We intend to recode data where necessary for 1993 (and 1994). Any changes resulting from these amendments will be concentrated in the external causes chapter. The effect on numbers of deaths from other causes will be spread over many conditions and will thus be limited.

In the meantime users are advised to be cautious in analysing these figures, especially when studying trends.

Allowance for these two effects helps to assess many of the apparent changes between earlier years and 1993 figures. Mortality in 1993 from malignant neoplasm of trachea, bronchus and lung (ICD 162) is seen to be much as expected from recent trends, once these adjustments are carried out. Similarly, deaths in 1993 from bronchopneumonia (485) are very much as in 1990-92 after adjustment. Others still require further explanation - for instance, mortality from diabetes mellitus (250) is rather higher in 1993 than expected from 1990-92, after adjustment.

Occurrences and registrations

Up to 1992, OPCS publications gave numbers of death ***registrations*** in the period concerned, but from 1993 the figures in Monitors and Annual Reference Volumes will represent ***occurrences***, unless otherwise stated. This change will have little effect on annual totals but makes it easier to analyse seasonal variations in mortality.

REFERENCES

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3. World Health Organisation. *Manual of the International Statistical Classification of Diseases*, volume 1. (Geneva, WHO, 1977)
4. *ibid* p 730.
5. OPCS. *Mortality statistics : injury and poisoning 1991*, series DH4 no 17, p xiii, (1993).
6. Noble, B and Charlton, J. Homicides in England and Wales, *Population Trends* 75, pp 26-29, Spring 1994.
7. WHO *op cit* pp 757-758.
8. OPCS. *Mortality statistics : comparison of 8th and 9th Revisions of the International Classification of Diseases, 1978 (sample)*, series DH1 no 10 (1983).
9. OPCS. *Mortality statistics : cause 1981*, series DH2 no 8 (1983).

10. OPCS. *Mortality statistics : cause 1982*, series DH2 no 9 (1983).
11. OPCS. *Mortality statistics : external causes 1982*, series DH4 no 8 (1984).
12. OPCS. *Mortality statistics : external causes 1983*, series DH4 no 9 (1984).
13. OPCS. *Mortality statistics : cause 1984*, series DH2 no 11 (1985).
14. OPCS. *Mortality statistics : general 1987*, series DH1 no 20 (1989).
15. OPCS. *Mortality statistics : childhood 1992*, series DH6 no 6 (1994).
16. Birch, D. Automated coding of causes of death, *Population Trends* 73, pp 36-38, Autumn 1993.

More information on the data in these data tables, and on changes in data collection, processing and presentation from 1993, may be obtained from:

Health Statistics
Office of Population Censuses and Surveys
St Catherine's House
10 Kingsway
London WC2
(Telephone: 0171 396 2229)

Please note that OPCS expect to be moving in 1996, from St Catherine's House to: 1 Drummond Gate, London SW1.

SOME SUMMARY MEASURES

The age standardised rate for a particular condition is that which would have occurred if the observed age specific rates for the condition had applied in a given standard population such as the European Standard Population. These are particularly useful for comparisons between different countries and over time.

Age standardised rate = $\Sigma\ P_k\ M_k$
where P_k = standard population in sex/age group k;
M_k = observed mortality rate (deaths per person) in sex/age group k;
k = age/sex group 0, 1-4, 5-9, ... ,90-94, 95 and over
for males and for females.

Further information on age standardisation may be found elsewhere [2].

The SMR compares mortality in each year with mortality in a 'standard' year, after allowing for differences in age structure. The ratio is of 'observed' to 'expected' deaths. The latter is the number of deaths in a year which would have been expected if the sex- and age-specific mortality rates of the standard year had applied in the same year.

Thus : SMR = (observed deaths/expected deaths) x 100

where expected deaths = $\Sigma\ p_k\ m_k$

and p_k = population in age/sex group k in a year;

m_k = mortality rate (deaths per person) in age/sex group k for the standard year;

k = age/sex group 0,1-4, 5-9, ... , 90-94, 95 and over

for males and for females.

AREA CLASSIFICATION

An area classification is a powerful and effective way of summarising the complexity of census data. It provides a simple indicator of the characteristics of areas, and of the similarity between areas, for comparative or targeting purposes and as a variable for analysis with other data. The basic technique is well established. It groups areas into clusters by measuring similarities in a whole range of variables, synthesizing many dimensions into a single classificatory system.

Uses of district level classifications are generally *strategic* in character, for example:

- to convey broad geographic patterns in the population
- in the coding of geographically sparse data to an area typology for further analysis - often termed 'data profiling' in commercial applications
- in pairing or grouping authorities for comparative studies

- in the monitoring of performance, for example, by highlighting differences in spending patterns between local authorities which fall into the same cluster in a classification

- to convey broad geographic patterns in the population.

Objectives for the OPCS classification

The objectives for the OPCS 1991 classification, taking account of potential applications, are:

- to apply well established methodology, and to make available the results of the classification in full to users

- to make the classification appropriately general-purpose, representing each of the main dimensions in census data (demographic; employment and socio-economic; household composition and housing)

- to differentiate clusters of areas as clearly as possible, whilst making them recognisable and meaningful to users, and to provide more than one level - a *hierarchy* - of clusters

- to make the members of each cluster as homogeneous as possible, but to make each cluster sufficiently populous to support applications

- to retain a broad comparability of approach with the OPCS 1971 and 1981 classifications, but not necessarily to be constrained to exactly the same methods

- to limit the complexity of the exercise, and hence charges to customers, to give a good value general-purpose product.

There are two significant exclusions from these objectives. First, there is no *direct* link to physical or environmental characteristics, and, second, there is no deliberate attempt to put contiguous areas in the same clusters. In addition, some areas fall on the statistical margins between clusters, being relatively unlike any 'typical' cluster member. This may be indicated if the districts most

similar to an area, as shown in the list of *corresponding* districts (see section 00), are in different clusters.

Choice of data

The classification is based wholly on data drawn from the 1991 Census Small Area Statistics (SAS) and Local Base Statistics (LBS) (reference). These are a rich source of data which cover every topic in the Census, both directly and through derived variables. Most importantly, they are in a standard form for local authority and health districts, and for wards/postcode sectors.

Choice of variables

In theory, the first stage of the analysis was the potentially daunting task of drawing a manageable sub-set from the many thousands of variables available for each area in the SAS, but, in practice, the general choice was determined by inclusion of:

- variables to represent the main 'dimensions' in the census data (demographic; employment and socio-economic; household composition and housing) bearing in mind the general-purpose use of the classification

- variables used in one or both of the 1971 or 1981 OPCS area classifications (references), *or* nearest equivalent variables, *or* a replacement which improves the classification process

- variables available for the first time from a Census, such as ethnic group or limiting long-term illness, with potential significance for area classification.

Further information on the area classification is available in

The ONS Classification of Local and Health Authorities of Great Britain. Merryl Wallace and Chris Denham Studies in Medical and Population Subjects 59. HMSO 1996 ISBN 0-11-691654-0