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IN THIS ISSUE

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in brief

Three questions on health proposed for the 2001 Census

The Government plans for the 2001 Census were published in a White Paper (Cm 4253) on 4 March 1999. The White Paper makes it clear that the selection of the proposed topics are those shown to be most needed by central and local government, the health service, academics, business and professional organisations. Furthermore, consideration was given to the lack of other comparable sources, the public acceptability of the topics and whether or not the questions could be answered in a way that would elicit reliable answers. The cost of processing the answers to questions has also been assessed in relation to the usefulness of the results. Finally, the overall length and layout of the Census form has been considered so that the burden on the public is kept to an acceptable level within the overall objective of achieving optimum value from the Census.

In summary, the Government proposes that information on the following topics should be collected in the 2001 Census:

At all properties occupied by households and for all unoccupied household accommodations:

- the address, including the postcode; and
- the type of accommodation, including whether or not it is self-contained.

For households:

- names of all residents (whether present or temporarily absent on Census night);
- names and usual addresses of visitors on Census night;
- tenure of accommodation;
- whether rented accommodation is furnished or unfurnished (in Scotland only);
- type of landlord (for households in rented accommodation);
- number of rooms;
- availability of bath and toilet;
- lowest floor level of accommodation;*
- number of floor levels in the accommodation (in Northern Ireland only);*
- availability of central heating; and
- number of cars and vans owned or available.

For residents:

- names, sex, and date of birth;
- marital status;
- relationship to others in household;
- student status;
- whether or not students live at enumerated address during term time;
- usual address one year ago;
- country of birth
- knowledge of Gaelic (in Scotland only), Welsh (in Wales only) and Irish (in Northern Ireland only);
- ethnic group;
- religion* (not in Scotland);
- general health;*
- long-term illness;
- provision of unpaid personal care;*
- educational and vocational qualifications;
- economic activity in the week before the Census;
- time since last employment;*
- employment status;
- supervisor status;*
- job title and description of occupation;
- size of workforce of employing organisation at place of work;*
- nature of employer's business at place of work (industry);
- hours usually worked weekly in main job;
- name of employer;
- address of place of work; and
- means of travel to work.

Some of these topics (those marked with an asterix) are proposed for general inclusion in a census for the first time. However, the proposed question on floor level of accommodation has previously been included only in the census in Scotland. Furthermore, a question on religion has previously been included in the censuses in Northern Ireland, but the wording of the new question proposed for England and Wales for 2001 would be different; the question will not be asked in Scotland.

Questions on all the topics listed above will be included on the Census form to be used in the Census Rehearsal in April 1999. Additionally, a question on income will also be included in the Census Rehearsal before the Government makes a final decision on whether or not to propose to include the question in the Census itself. Subsequently, the topics to be included in the Census will be set out in subordinate legislation to be laid before the appropriate legislatures towards the end of this year. Three questions on health-related topics are included among those being proposed.

Limiting long-term illness

This question, which was included for the first time in the 1991 Census, will ask whether each person has any long-term illness, health problems or disability which limits his or her daily activities or the work he or she can do. Problems which arise from old age will be included. The information will be used as a measure of the need for health and personal social services for the long-term sick at national level, health and local authority level, and around particular local facilities, either existing or planned. The Census is the only nationally consistent source for statistics at the local level.

The question will provide information on the circumstances in which the long-term sick live, for example, whether they live alone. It will also provide analysis by age which will be important as the number of elderly people increases. The information will be of value both to the public and private sectors for marketing services to the sick and disabled.

General health

In addition to the question on long-term illness, the Government proposes to include a general health question which will ask the respondents to assess their own health over the preceding 12 months as either 'Good', 'Fairly good', or 'Not good'. This information has been demonstrated in surveys to have a good predictive power for health policy and the provision of services, particularly for the elderly. Its inclusion in the Census in 2001 for the first time will enable such information to be applied at the local area level.

Provision of care

The Government recognises the increasing amount of unpaid help given to people with ill health, and is proposing the inclusion of a new question which will help to improve the understanding of variations in the need for care and the pressure on social services in an attempt to target resources more effectively. The aim of the question is to record whether or not the person provides unpaid help for a friend or relative with a long-term illness, health problem or disability, and the time spent each week in providing such care.

More detailed information on topics and plans generally for the 2001 Census are given in the White Paper, *The 2001 Census of Population*, which is available from the Stationery Office, Price £7.55, and on the Internet at: http://www.ons.gov.uk.

Cancer survival trends in England and Wales, 1971–1995: deprivation and NHS Region

The survival of cancer patients is a key indicator of the effectiveness of cancer control. Surveillance of the overall efficacy of cancer treatment programmes and the equity of access to care requires information on cancer survival in the whole population. *Cancer survival trends in England and Wales, 1971–1995: deprivation and NHS Region* is the most comprehensive population-based analysis of cancer survival trends and patterns ever carried out in Britain. It explores survival trends among almost three million cancer patients diagnosed in England and Wales since the early 1970s, and survival patterns by age, sex, geographic region and socio-economic status for 58 different cancers in adults and children. This collaborative project was carried out by researchers at the London School of Hygiene and Tropical Medicine and the Office for National Statistics, with the support of the Cancer Research Campaign.

Cancer survival rates up to ten years after diagnosis are provided for 47 different types of cancer in adults and 11 different types of cancer in boys and girls. Cancer survival in adults has been examined with respect to age at diagnosis.

Changes in population cancer survival with the passage of time are an important measure of progress in cancer control at regional and national levels, and in sub-groups of the population defined by age, sex or socio-economic status. Time trends in survival in England and Wales have been examined for each sex and for all cancers.

Inequalities in cancer survival have been examined for each cancer between groups of cancer patients defined as belonging to one of five categories of material deprivation, from affluent to deprived, on the basis of the characteristics at census of the small area (enumeration districts) in which they were living when diagnosed. The extent to which any inequalities in survival between affluent and deprived patients diagnosed during the late 1980s were more – or less – pronounced than those seen for patients diagnosed in the early 1980s have also been explored.

Geographical trends in cancer survival up to ten years after diagnosis have also been examined for the eight current NHS Regions of England, and in Wales.

Results and anonymised data are also published on CD-ROM to enable further analyses and provide electronic access to the tables and graphics. Over 250 new life tables prepared in order to compute relative survival rates are also included, together with code dictionaries for cancer site and morphology.

This volume and the accompanying CD-ROM will be an essential resource for oncology, for clinical and public health research, and for health planners, as well as for the wider public.

To order copies of the book and CD-ROM, contact The Stationery Office Publications Centre on 0171 873 9090 (or fax on 0171 873 3200). The Stationery Office are offering a discount if both publications are ordered at the same time (contact TSO for more details) and the CD-ROM can be ordered through ONS Direct on 01633 812978. Publication details are as follows:

Book: *Cancer survival trends in England and Wales 1971–1995: deprivation and NHS Region*, published by The Stationery Office, price £130, ISBN 0 11 62103 1.

CD-ROM: *Cancer survival trends in England and Wales 1971–1995: deprivation and NHS Region*, published by the Office for National Statistics, price £100 + VAT, ISBN 1 85774 324 5.

The Health of Young People '95–97

The annual Health Survey for England is carried out on behalf of the Department of Health by the Joint Health Surveys Unit of Social and Community Planning Research (SCPR) and the Department of Epidemiology and Public Health at University College, London (UCL). Since 1995, the surveys have included children aged 2–15, as well as adults. For 1997 the sampling procedure was adjusted so that for some of the households only children were surveyed, giving a larger number of young people overall. *The Health of Young People '95–97* combines data from the 1995, 1996 and 1997 surveys to provide an overview of the health of children and young adults aged 2–24.

Survey procedures

Children aged 13–15 were interviewed in person, while for those aged 2–12, a parent or guardian was interviewed in the child's presence. Interviews covered general health including respiratory problems, height and weight, dietary information, accidents, and physical activity. Self-completion questionnaires were provided for those aged 8 and over for topics such as drinking and smoking. Young people of 16 and over were asked about their educational attainment and, for girls, use of the contraceptive pill.

In addition there was a visit from a nurse, who collected information on current medication and took various body measurements, and a sample of saliva. There was also a telephone survey of a subset of the 1997 sample to ask about use of, and attitudes towards, sun protection.

Some of the findings

Around a quarter of young people reported a long-standing illness or disability, 10 per cent of all young people reported a long-standing illness or disability that limited their activities in some way. The most common condition was respiratory, followed by skin problems for those under 16 and musculoskeletal problems for those aged 16–24. However, over 90 per cent of children aged under 16 were considered by themselves (or by their parents) to be in good health. This fell to around 85 per cent for 16–24 year olds. Around one-third of the young people had experienced wheezing, and asthma had been diagnosed by doctors for around 20 per cent of males and 18 per cent of females.

The most common prescribed drugs were respiratory medicines. Contraceptive pills, injections or implants were used by just under half of young women aged 16–24, the use increasing with age.

Using the body mass index (BMI) to define desirable weight, 23 per cent of males and 19 per cent of females aged 16–24 were overweight. Six per cent of males and 8 per cent of females were obese. Nearly half of women with a desirable weight were trying to lose weight. In general, children with overweight parents, or who had been heavy babies, were more likely to have a higher BMI.

Less than one-fifth of young people ate fruit or vegetables more than once a day. For children under 16 eating habits were related to social class and household income.

Smoking is generally underestimated by young people, so the self-reporting was supplemented by measuring the cotinine levels in blood or saliva. By the age of 15, about 13 per cent of children were smoking at least one cigarette a week. At age 16, 20 per cent of men and 25 per cent of women were smoking, and by age 20–24 around 40 per cent of young people were smoking. Smoking was more prevalent in Social Class V than Social Class I.

Of those aged 16–24, a third of men drank more than 21 units of alcohol per week, and a quarter of women drank more than 14 units. Drinking levels peaked at age 19–23 for men and age 19–21 for women, and by the age of 24 they had started to decrease. At age 21, around half of men and one-third of women drank on at least three days per week.

Of those who drank, around one-third of men and one-fifth of women reported being drunk at least once a week, and 17 per cent of young male and 11 per cent of young female drinkers were classified as potential 'problem drinkers'.

Non-fatal accidents were associated with higher levels of physical activity. Males aged 12–24 had twice as many accidents as boys aged 2–11. The accident rate for girls peaked at age 11–15.

The report can be purchased from The Stationery Office as *Health Survey for England, The Health of Young People '95–97*, published by The Stationery Office, price £70, ISBN 0 11 322266 1.

Recent ONS publications

Social Trends 29 *(The Stationery Office, January, £39.50, ISBN 0 11 621067 2).*

Congenital anomaly statistics (MB3 no. 26) *(The Stationery Office, January, £25, ISBN 0 11 621156 3).*

Marriage, divorce and adoption statistics 1996 *(The Stationery Office, February, £25, ISBN 0 11 621157 1).*

The 2001 Census of Population White Paper *(The Stationery Office, March, £7.55, ISBN 0 10 142532 5).*

Omnibus Survey: Contraception and Sexual Health, 1997 *(Office for National Statistics, March, £10, ISBN 1 85774 312 1).*

Population Trends 95 (Spring 1999) *(The Stationery Office, March, £20, ISBN 0 11 621115 6).*

Mortality statistics 1997: childhood, infant and perinatal (DH3 no. 30) *(The Stationery Office, March, £35, ISBN 0 11 621165 2).*

Gazeteer of the old and new geographies of the United Kingdom *(Office for National Statistics, March, £20, ISBN 1 85774 298 2).*

Focus on London 99 *(The Stationery Office and London Research Centre, April, £45, ISBN 0 11 621159 8).*

Cancer survival trends 1971–1995: deprivation and NHS Regions *(The Stationery Office, April, £130, ISBN 0 11 62103 1).*

Cancer survival trends 1971–1995: deprivation and NHS Regions CD-ROM *(Office for National Statistics, April, £100 + VAT, ISBN 1 85774 324 5).*

International migration 1997 (MN no. 24) *(The Stationery Office, April, £30, ISBN 0 11 621166 0).*

Key population and vital statistics 1997 (VS no. 24/PP1 no. 20) *(The Stationery Office, May, £30, ISBN 0 11 621167 9).*

Mid-1996 national population projections *(The Stationery Office, May, £30, ISBN 0 11 621160 1).*

Health indicators

England and Wales

Figure A Population change (mid-year to mid-year)

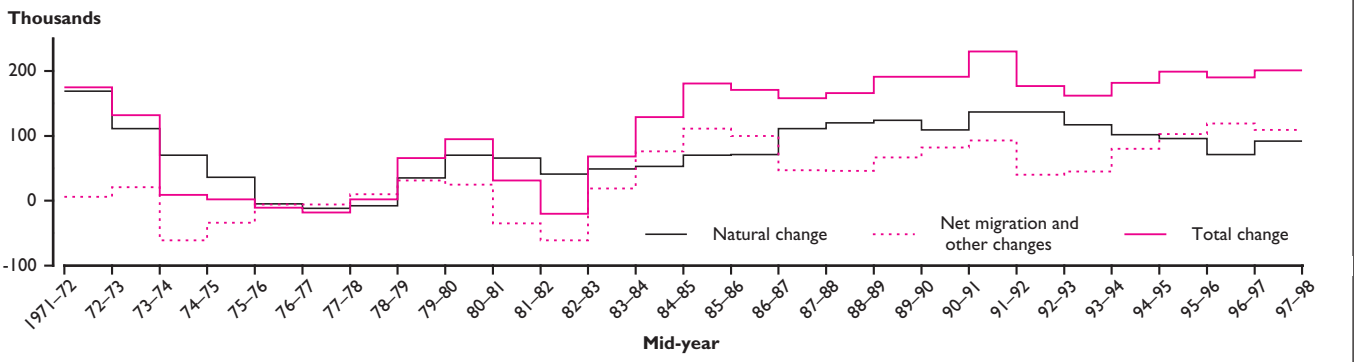
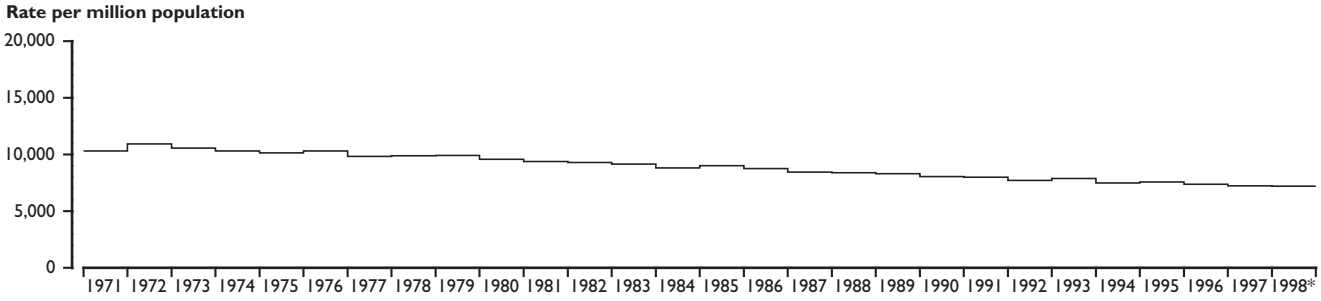
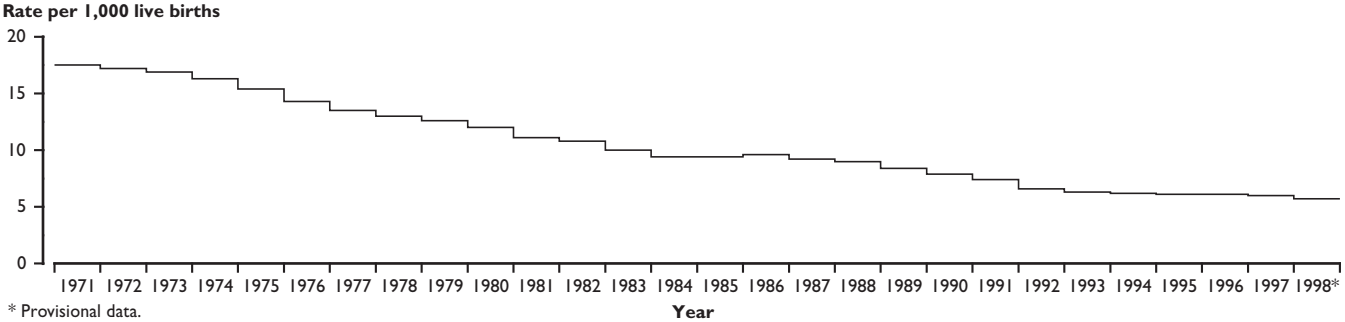


Figure B Age-standardised mortality rate



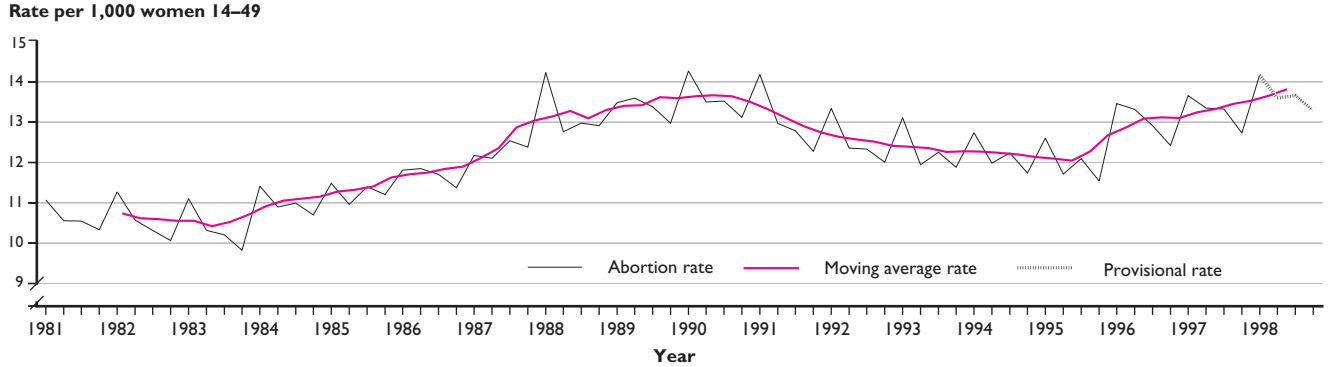
* Provisional data.

Figure C Infant mortality (under 1 year)



* Provisional data.

Figure D Quarterly abortion rates – residents



Father's occupation and childhood mortality: analysis of routinely collected data

Nicola T Fear and Eve Roman, ***Leukaemia Research Fund, Centre for Clinical Epidemiology, University of Leeds,***
Gillian Reeves, ***Cancer Epidemiology Unit, Imperial Cancer Research Fund, Oxford,*** **and Brian Pannett,** ***Medical Research Council Environmental Epidemiology Unit, University of Southampton***

This article describes patterns of childhood mortality in England and Wales for a 26-year period (1959–63, 1970–78 and 1979–90). Notable differences in the distribution of childhood deaths by age and father's social class were observed. Whilst father's occupation is not a major determinant of childhood cancer, the analyses support the suggestion that father's occupational exposure to either agrochemicals or agriculture may increase the risk of childhood kidney cancer. Additional findings require cautious interpretation but provide leads for future research.

Introduction

Evidence has been accumulating which suggests that father's occupation (and related exposures) may play a role in certain reproductive outcomes (e.g. infertility, miscarriages and congenital anomalies) and causes of childhood morbidity and mortality.[1,2] However, the biological mechanism(s) underlying these postulated relationships are far from clear.[3] Potential mechanisms include: occupational exposures having a direct effect on the DNA of the sperm (transgenerational effects); accumulation of occupational agents in the seminal fluid which could affect either fertilisation or the fetus (if intercourse takes place during pregnancy); and the transfer of occupational agents across the placenta (if occupational agents are 'carried' home from the workplace by the father during pregnancy) (transplacental effects). In addition, it is possible that exposure to occupational agents after the child's birth may have a role in the development of childhood cancer. In most instances, it is not possible to identify the exposure period of importance[4] and, therefore, the potential biological mechanisms are difficult to disentangle.

This article is based on an analysis of childhood death certificates. Data were obtained from the Office for National Statistics (the ONS) for England and Wales for a 26-year period (1959–63, 1970–78 and 1979–90). General patterns of childhood mortality are described and the distributions of childhood deaths by age at death and father's social class are presented. The findings are compared with those recently published on an overlapping dataset.[5,6] An analysis of the role of father's occupation in the development of childhood cancer follows. These analyses represent the most comprehensive study of childhood death certification data with regards to offspring's risk of death and father's occupation conducted to date.

Data and methods

Under existing legislation, all deaths occurring in England and Wales must be registered with a Registrar of Births and Deaths within five days. The Registrar completes Form 310, a 'death draft', which records certain information about the deceased, including underlying cause of death (copied from the death certificate) and for deaths under 16 years of age, father's occupation (and since 1986, mother's occupation) held at the time of the child's death. Completed death drafts are then forwarded to the ONS where they are coded using standard classifications and computerised.

Data on deaths at ages 0 to 14 years registered in England and Wales during 1959–63, 1970–78 and 1979–90 were provided in the form of anonymised computerised records by the ONS to investigate the association between father's occupation and offspring's risk of death. Data for deaths registered from 1964 to 1969 were not provided, as father's occupation for these years was not routinely coded.

In total, the ONS provided anonymised records on 360,640 childhood deaths, of which 21,560 (6 per cent) were excluded due to missing or invalid information: deaths registered among children whose usual residence was outside England and Wales; deaths with an invalid year of

Table 1 **Deaths at ages 0 to 14 years, England and Wales, 1959–63, 1970–78 and 1979–90**

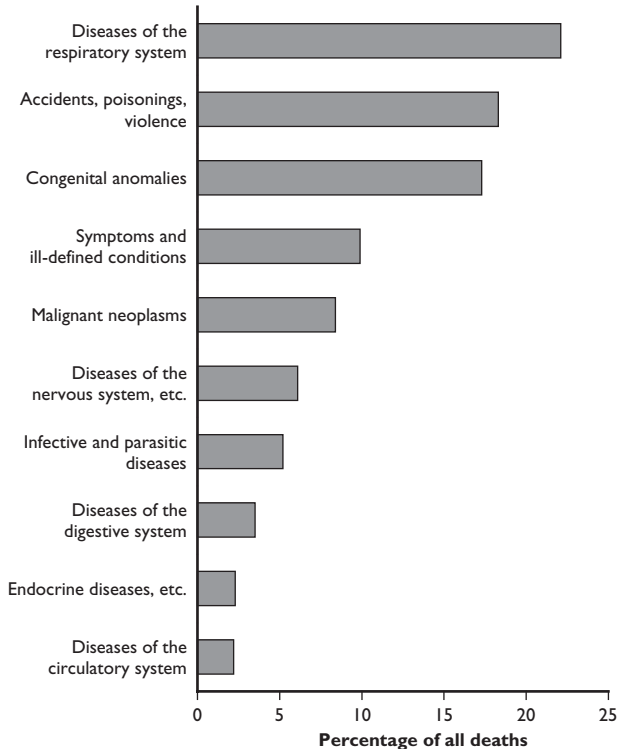
	1959–63		1970–78		1979–90		Total	
	Number	%	Number	%	Number	%	Number	%
Deaths from all causes	112,600	100	136,350	100	111,690	100	360,640	100
Exclusions	2,511	2	5,053	4	13,996	13	21,560	6
Missing/invalid paternal occupation	2,511	2	3,969	3	13,603	12*	20,083	6
Outside England and Wales	-	-	840	<1	393	<1	1,233	<1
Invalid year of death	-	-	244	<1	-	-	244	<1
Neonatal deaths†	61,249		64,090		46,038		171,377	
Childhood deaths**	48,840		67,207		51,656		167,703	

* In 1981, industrial action was taken by Registrars of Births and Deaths. This led to the incomplete coding of deaths occurring in that year.
† Deaths occurring within 28 days of birth.
** Deaths at ages 0 to 14 years with the exclusion of those occurring within 28 days of birth.

Table 2 **The 33 occupational exposure groups and the occupations classified to each**

Occupational exposure groups	Occupational codes (1970 Classification of Occupations[10])
Agriculture	2–4
Agrochemicals	2–6
Animals	2, 3, 60, 79, 190
Ceramics/glass	13–17, 112
Coal dust	7, 8, 102, 111, 118, 177
Construction	9, 93–98, 103, 104, 106, 113, 176, 195, 211, 212
Electromagnetic fields	24–30, 36, 44, 53, 54, 106, 118, 119, 124–128, 132, 162, 163, 185, 197, 198
Exhaust fumes	4, 7, 9, 10, 41, 104–106, 113, 115–126, 131, 132, 134, 145–147
Fishing	1
Foodstuffs	78–81, 145, 154–163
Forces	151–153, 221, 222
Heat (prolonged exposure)	11, 13–15, 17–23, 36, 78, 102, 109, 111, 112, 151, 162, 163, 168
Hydrocarbons (inhaled)	4, 7–11, 15, 17–23, 38–41, 47, 85–89, 102, 104–106, 108, 109, 111–113, 115, 116, 118–122, 124, 131, 132, 134, 147, 151, 152, 154, 155, 159–163, 175–177, 195, 196
Hydrocarbons (dermal)	4, 5, 11, 15, 19, 22, 31–33, 37–43, 47, 48, 85–89, 102, 105, 108, 116, 147, 196
Ionising radiation	9, 117, 181–183, 185, 202
Lead	16–18, 21–23, 41, 45, 46, 85–88, 100, 101, 185
Leather	60–63, 75, 76
Medical/healthcare	170, 181–191, 215
Metals	18–23, 31–54, 58, 103, 106, 108, 109, 175, 196, 202
Metal acid mists	22, 44
Metal fumes	18, 20, 22, 36, 41–46, 109
Metal working (oil mists)	19, 31, 32, 37–40, 47
Mining	7–10, 177
Paints	16, 41, 52, 55, 56, 99–101, 208
Paper production	83, 84
Plastic	90
Printing	85–88
Rubber	89
Social contact	24, 25, 27, 28, 41, 45, 46, 49, 61, 74, 79, 100, 119–121, 129–132, 139, 140, 143–148, 150–161, 164, 166–168, 170–172, 181–183, 185–194, 207, 213–215
Solvents	14, 16, 29, 31, 32, 37–42, 49–52, 55, 56, 60, 61, 70, 71, 75, 80, 85–90, 99–101, 147, 167, 168, 204, 205, 208, 219
Textile dust	64–77, 86, 88, 110, 168
Tobacco dust	82
Wood dust	6, 52, 55–59, 96, 98
Occupations not appearing in the above exposure groups: 12, 91, 92, 107, 114, 133, 135–138, 141, 142, 149, 165, 169, 173, 174, 178–180, 199–201, 203, 206, 209, 210, 216–218, 220, 223, 230, 234	

Figure 1 Ten most common causes of death among children*, England and Wales, 1959–63, 1970–78 and 1979–90



* Aged 0 to 14 years. Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

death; and deaths with a missing or invalid father's occupation (Table 1). An additional exclusion for the purposes of these analyses was the removal of 171,377 neonatal deaths (deaths occurring within the first 28 days of life). Since 1986, neonatal deaths have been certified using a different death certificate from which it is not possible to derive an underlying cause of death. However, the majority of neonatal deaths are due to conditions originating from birth and congenital anomalies, with few being due to cancer (in 1990, only 0.5 per cent of neonatal deaths were due to cancer[7]). After making these exclusions, 167,703 (47 per cent) childhood deaths were included in the analysis.

Father's occupation, social class and underlying cause of death were coded by the ONS using the standard classifications in use at the time of the child's death (1959–63;[8,9]1970–78;[10,11]1979–90[12,13]). For comparability between different time periods and for ease of analysis and interpretation, it is essential that common classifications are employed. Father's occupation was bridge coded to the 223 occupations included in the 1970 Classification of Occupations[10] using a bridge coding program specifically developed for use with these and other routinely collected data. Several occupational codes were subsequently combined to allow complete bridge coding (see Box One). Cause of death was bridge coded to the 7th revision of the International Classification of Diseases (ICD)[9] using bridge codes developed at the London School of Hygiene and Tropical Medicine (see Beral et al[14] for an example of their use). The classifications used led to the minimal loss of information and afforded maximum ease of re-coding.

Many of the previously conducted studies examining the influence of father's occupation on offspring's risk of cancer combined occupations with common exposures.[2] In order to replicate this earlier work, an occupational exposure classification scheme was derived. From the literature, 33 occupational exposures were identified as having previously been associated with either cancer in the offspring of men exposed to them or adverse reproductive outcomes. Occupations from the 1970 Classification of Occupations[10] were grouped according to whether or not they were likely to be exposed to each of the 33 exposures. This was based on the knowledge of an occupational hygienist (BP), examination of job descriptions and literature concerning occupational exposures. The 33 occupational exposure groups and the occupations classified to each are shown in Table 2.

Out of 223 occupations, 191 were placed into one or more occupational exposure groups: 58 occupations were classified by one exposure, 50 by two, 39 by three, 28 by four and 16 by five or more. There were an additional 32 occupations, plus 'full time students' (occupational code 230) and 'househusbands' (occupational code 234), that were not classified according to any of the 33 exposures due to either no identifiable exposure, for example, 'civil service executive officers' (occupational code 142), or because a whole range of occupations were included within one occupational category each having a variety of different exposures, for example, 'craftsmen not elsewhere classified' (occupational code 091). These occupations were assigned to a category entitled unknown. For these reasons, 35,163 childhood deaths (of which 2,645 were due to cancer) were not classified by father's occupational exposure.

Statistical methods

Associations between each of the 33 occupational exposures of fathers and the five most common causes of childhood death due to cancer were assessed using the proportional mortality ratio (PMR).[15] The PMR is the ratio of the number of deaths observed due to the cause of interest among the occupational group of interest, to the number of deaths expected based on the distribution of deaths from the cause of interest among the 'standard for comparison'. The PMR rather than the standardised mortality ratio (SMR) was used as there are no national population data which give the number of children in England and Wales by father's occupation. Therefore, it is not possible to calculate national death rates and hence SMRs.

All PMRs were adjusted for age and year of death (in one year bands) and father's social class (using nine categories); deaths from all causes with valid occupational information for the father formed the standard for comparison. For each PMR, approximate 95 per cent confidence intervals (CI) and two-sided tests of statistical significance were estimated from the chi-squared distribution or, where the number of observed deaths was less than ten, from the Poisson distribution.[16]

The data and statistical methods are described in more detail in references 17–19. The advantages and limitations of the PMR are discussed in references 15 and 17.

Results and discussion

Figure 1 shows the ten most common causes of death during childhood (excluding neonatal deaths). Diseases of the respiratory system (22 per cent), accidents, poisonings and violence (18 per cent) and congenital anomalies (17 per cent) accounted for over half of all childhood deaths, with malignant neoplasms (cancer) accounting for 8 per cent of deaths.

Table 3 shows the distribution of deaths by cause in five-year age groups (excluding neonatal deaths). In the youngest age group (0 to 4 years of age), diseases of the respiratory system (27 per cent of deaths) and congenital anomalies (20 per cent) represented the two major causes of death, with malignant neoplasms accounting for 4 per cent of deaths. At ages 5 to 9 and 10 to 14 years, accidents, poisonings and

Box one

Occupational re-coding program

To account for changes in the employment structure of the United Kingdom, the occupational classification is updated every ten years to reflect the current situation in the labour market, each subsequent revision has tended to include a greater number and variety of occupations. Over the 26-year period investigated in these analyses, some occupations have become less common (e.g. coal miners), whilst others have 'developed' (e.g. computer programmers) reflecting changes in the industrial basis of England and Wales.

Collaboration with Brian Pannett (occupational hygienist) and Leslie Styles (computer programmer) from the Medical Research Council Environmental Epidemiology Unit (Southampton) led to the development of an occupational bridge coding program suitable for use with these and other routinely collected data from England and Wales.

The first stage in the construction of this program was to select the 1980 Classification of Occupations[12] as a base to which occupations from other occupational classification schemes were matched. The revisions of the occupational classification considered were 1960, 1966, 1970, 1980 and 1990. A matrix was gradually built up to allow bridge coding of occupations from any of these revisions to the 1980 classification. This program was entitled SPOCK (Styles Pannett Occupational Coding Key) and allowed occupational codes from any of these five occupational classifications to be entered manually into a spreadsheet which then displayed the equivalent codes for the other classifications.

One example from SPOCK is shown for 'carpenter':

1980	Occupational code	214	Carpenters, joiners
1960	Occupational code	080	Carpenters and joiners
		142	Craftsmen not elsewhere classified
1966	Occupational code	057	Carpenters and joiners
		093	Craftsmen not elsewhere classified
1970	Occupational code	055	Carpenters and joiners
		091	Craftsmen not elsewhere classified
1990	Occupational code	570	Carpenters, joiners

Certain occupational codes comprised a collection of jobs which were difficult to re-code. An example is 'other production process workers' (occupational codes 143, 094 and 092 in 1960, 1966 and 1970, respectively) which in the 1970 Classification of Occupations[10] covers the making of batteries and accumulators, asbestos cement goods, abrasive sheets and wheels, linoleum and leathercloth, brake linings, cables, roofing felt and photographic film and plates etc., all of which involve potential exposure to a variety of hazardous agents. However, this occupational code also includes makers of buttons, pens, pencils, crayons, powder puffs and whips, most of whom are unlikely to be exposed to occupational hazards. Occupations contained within these 'combination codes' were cross matched with appropriate occupations from the other revisions.

The program, SPOCK, was a useful aid in re-coding relatively small numbers of occupations, but its application to the data described in this article for which there were 167,703 records would have been a time consuming exercise. To overcome this problem, an additional program entitled RECODE was written, based on SPOCK, which could read and re-code a file of occupations. Further details are available from Brian Pannett.

Table 3 **Cause of death among children* in five-year age groups, England and Wales, 1959–63, 1970–78 and 1979–90**

	0*–4 years		5–9 years		10–14 years		0*–14 years	
Cause of death (ICD 7th Revision[9])	No. of deaths	%	No. of deaths	%	No. of deaths	%	No. of deaths	%
Infective and parasitic diseases (1–138)	7,226	5.9	974	4.1	588	2.7	8,788	5.2
Malignant neoplasms (140–205, 292.3, 294)	5,216	4.3	4,806	20.5	4,146	18.7	14,168	8.4
Benign, in situ and unspecified neoplasms (210–239)	527	0.4	310	1.3	337	1.5	1,174	0.7
Endocrine, nutritional and metabolic diseases (240, 242–289)	2,087	1.7	858	3.7	935	4.2	3,880	2.3
Diseases of the respiratory system (241, 470–527)	33,058	27.1	2,023	8.6	1,951	8.8	37,032	22.1
Diseases of blood and blood forming organs (290–292.2, 292.4–293, 295–299)	585	0.5	232	1.0	219	1.0	1,036	0.6
Mental disorders (300–326)	326	0.3	117	0.5	151	0.7	594	0.4
Diseases of the circulatory system (330–334, 400–468)	1,954	1.6	621	2.6	1,103	5.0	3,678	2.2
Diseases of the nervous system and sense organs (340–398)	6,979	5.7	1,640	7.0	1,685	7.6	10,304	6.1
Diseases of the digestive system (530–587)	4,607	3.8	638	2.7	562	2.5	5,807	3.5
Diseases of the gentio-urinary system (590–637)	868	0.7	291	1.2	413	1.9	1,572	0.9
Complications of pregnancy, childbirth and the puerperium (640–689)	0	0.0	0	0.0	3	0.0	3	0.0
Diseases of skin and subcutaneous tissue (690–716)	135	0.1	22	0.1	23	0.1	180	0.1
Diseases of muscloskeletal system and connective tissue (720–749)	206	0.2	84	0.4	178	0.8	468	0.3
Congenital anomalies (750–759)	24,461	20.0	2,595	11.1	1,906	8.6	28,962	17.3
Certain conditions originating in the perinatal period (760–776)	2,701	2.2	29	0.1	14	0.1	2,744	1.6
Symptoms and ill-defined conditions (780–795)	16,460	13.5	43	0.2	42	0.2	16,545	9.9
Accidents, poisonings and violence (external cause) (800–999)	14,646	12.0	8,196	34.9	7,926	35.7	30,768	18.3
All causes (1–999)	**122,042**	**100.0**	**23,479**	**100.0**	**22,182**	**100.0**	**167,703**	**100.0**

* Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

Table 4 **Childhood cancer deaths* in five-year age groups, England and Wales, 1959–63, 1970–78 and 1979–90**

	0*–4 years		5–9 years		10–14 years		0*–14 years	
Cause of death (ICD 7th Revision[9])	No. of deaths	%	No. of deaths	%	No. of deaths	%	No. of deaths	%
Buccal cavity and pharynx (140–148)	22	0.4	42	0.9	36	0.9	100	0.7
Digestive organs and peritoneum (150–155, 157–159)	183	3.5	58	1.2	67	1.6	308	2.2
Secondary unspecified (156, 165, 198, 199)	79	1.5	45	0.9	62	1.5	186	1.3
Respiratory system (160–162, 164)	35	0.7	37	0.8	49	1.2	121	0.9
Female genital organs (171–176)	28	0.5	19	0.4	54	1.3	101	0.7
Male genital organs (177–179)	53	1.0	16	0.3	16	0.4	85	0.6
Kidney (180)	392	7.5	234	4.9	75	1.8	701	4.9
Bladder and other urinary organs (181)	28	0.5	17	0.4	5	0.1	50	0.4
Melanoma (190)	9	0.2	6	0.1	12	0.3	27	0.2
Skin other than melanoma (191)	7	0.1	5	0.1	6	0.1	18	0.1
Eye (192)	91	1.7	28	0.6	10	0.2	129	0.9
Brain and other parts of the nervous system (193)	1,395	26.7	1,298	27.0	958	23.1	3,651	25.8
Endocrine glands (194, 195)	334	6.4	160	3.3	54	1.3	548	3.9
Bone (196)	60	1.2	166	3.5	519	12.5	745	5.3
Connective and other soft tissue (197)	144	2.8	109	2.3	131	3.2	384	2.7
Non–Hodgkin's lymphoma (200, 202, 205)	259	5.0	330	6.9	328	7.9	917	6.5
Hodgkin's disease (201)	11	0.2	40	0.8	124	3.0	175	1.2
Leukaemia (204)	2,071	39.7	2,188	45.5	1,631	39.3	5,890	41.6
Other (170, 203, 292.3, 294)	15	0.3	8	0.2	9	0.2	32	0.2
Total	**5,216**	**100.0**	**4,806**	**100.0**	**4,146**	**100.0**	**14,168**	**100.0**

* Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

violence and malignant neoplasms were the two principle causes of death, accounting for 1 in 3 and 1 in 5 deaths, respectively, with diseases of the respiratory system and congenital anomalies each accounting for approximately 1 in 10 deaths.

Leukaemia, cancers of the brain and other parts of the nervous system, non-Hodgkin's lymphoma, bone cancer and kidney cancer were the five most common cancers, accounting for approximately 85 per cent of all cancer deaths in children under 15 years of age (Table 4). These findings mirror those for incidence.[20]

Table 4 also shows the distribution of cancer deaths in five-year age groups. In each age group, leukaemia and cancers of the brain and other parts of the nervous system accounted for approximately two thirds of all cancer deaths. The third most common cancer in children aged 0 to 4 years was kidney cancer, in those aged 5 to 9 years, it was non-Hodgkin's lymphoma and in those aged 10 to 14 years, it was bone cancer. These patterns reflect those observed for incidence.[20]

Table 5 **Childhood deaths* by father's social class, England and Wales, 1959–63, 1970–78 and 1979–90**

		All causes		All cancers	
Father's social class		No. of deaths	%	No. of deaths	%
I	(Professional)	6,947	4.3	879	6.3
II	(Managerial and technical)	22,048	13.7	2,623	18.9
IIINM	(Skilled – Non–manual)	13,756	8.6	1,514	10.9
IIIM	(Skilled – Manual)	62,740	39.0	5,331	38.5
IV	(Partly skilled)	31,831	19.8	2,279	16.4
V	(Unskilled)	18,552	11.5	937	6.8
Armed Forces		4,836	3.0	301	2.2
Total		**160,710†**	**100.0**	**13,864****	**100.0**

* Aged 0 to 14 years. Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.
† Plus 732 full-time students and 6,261 with inadequately described occupations.
** Plus 30 full-time students and 274 with inadequately described occupations.

Table 5 shows the distribution of deaths during childhood by father's social class. Approximately two-thirds of deaths occurred among the offspring of men from social classes III manual (IIIM), IV and V. This is as expected since over half of the adult population and the greatest number of births occur among these social classes.[21,22]

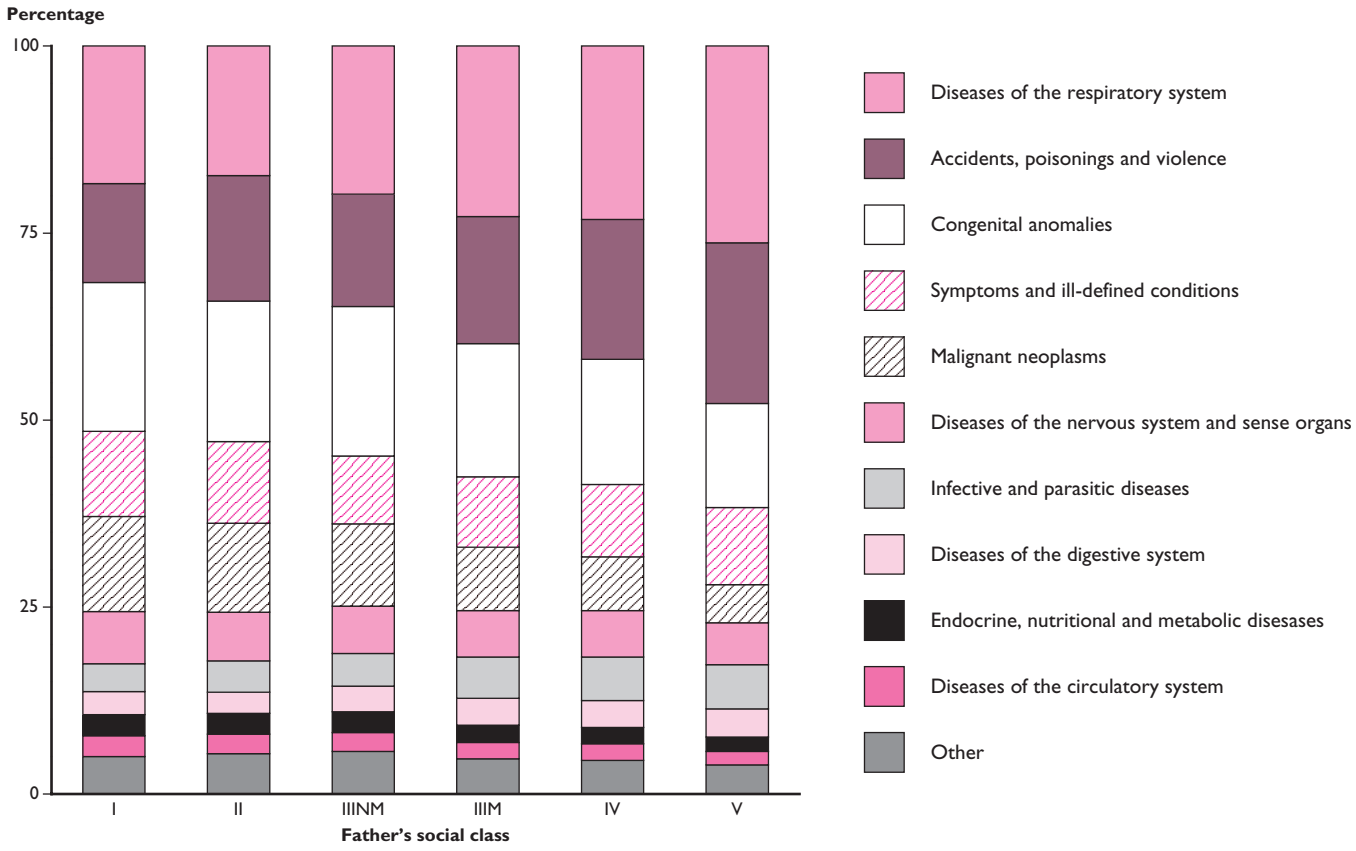
Cause of death was also found to vary by father's social class (Figure 2). Greater proportions of deaths due to diseases of the respiratory system and accidents, poisonings and violence were observed among the offspring of men from Social Classes IIIM, IV and V rather than Social Classes I, II and III non-manual (IIINM). Deaths due to cancer were relatively more common among the offspring of men from Social Classes I, II and IIINM rather than Social Classes IIIM, IV and V. Similar findings have previously been reported.[6,23,24]

Examination of the distribution of childhood deaths by father's occupation showed that two occupations each accounted for over 5 per cent of deaths (Table 6): 'other labourers and unskilled workers' (occupational code 114) accounted for 6.1 per cent of all childhood deaths and 'drivers of road goods vehicles' (occupational code 122) for 5.1 per cent. The two father's occupations which accounted for the greatest proportion of childhood cancer deaths were 'drivers of road goods vehicles' and 'clerks, cashiers and office machine operators' (occupational codes 139 and 140); both accounted for 4.5 per cent of cancer deaths.

Table 7 shows the distribution of deaths from all causes by occupational exposure of the father based on occupational title recorded at the time of death registration of the child. The greatest number of deaths occurred among the offspring of men with occupational exposure to inhaled hydrocarbons (46,397 deaths), with the smallest number of deaths among the offspring of men with occupational exposure to tobacco dust (36 deaths). When the distribution of childhood cancer deaths was examined by father's occupational exposure a similar pattern was observed (data not shown).

Table 8 shows the observed number of deaths and PMRs for the five most common childhood cancers and each of the 33 occupational exposures of fathers. Fourteen statistically significant associations were

Figure 2 Cause of childhood* death by father's social class, England and Wales, 1959–63, 1970–78 and 1979–90



* Aged 0 to 14 years. Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

Table 6 The most common father's occupations for all causes of childhood death and cancer deaths*, England and Wales, 1959–63, 1970–78 and 1979–90

	All causes			All cancers		
Father's occupation (1970 Classification of Occupations[10])	No. of deaths	%	Rank	No. of deaths	%	Rank
Labourers and unskilled workers, other (114)	10,220	6.1	1	478	3.4	3
Drivers of road goods vehicles (122)	8,606	5.1	2	640	4.5	1
Clerks, cashiers, office machine operators (139, 140)	5,841	3.5	3	637	4.5	2
Fitters nec, machine erectors (43)	5,107	3.0	4	476	3.4	4
Armed Forces (UK) (221)	4,400	2.6	5	282	2.0	10
Machine tool operators (39)	4,357	2.6	6	356	2.5	6
Proprietors and managers, sales (143)	4,009	2.4	7	447	3.2	5
Construction workers nec (98)	3,452	2.1	8	247	1.7	12
Coal mine – workers underground (7)	3,138	1.9	9	241	1.7	13
Electricians, electrical and electronic fitters (27, 28)	3,108	1.9	10	285	2.0	9
Painters, decorators nec (100)	3,054	1.8	11	209	1.5	17
Warehousemen, storekeepers and assistants (136)	2,986	1.8	12	224	1.6	15
Carpenters and joiners (55)	2,983	1.8	13	266	1.9	11
Labourers and unskilled workers, building etc. (113)	2,935	1.8	14	154	1.1	24
Managers nec (180)	2,750	1.6	15	332	2.3	7
Teachers (193,194)	2,377	1.4	16	308	2.2	8
Commercial travellers, manufacturers' agents (148)	1,767	1.1	23	232	1.6	14

* Aged 0 to 14 years. Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

Table 7 **Father's occupational exposure groups* for deaths from all causes among children†, England and Wales, 1959–63, 1970–78 and 1979–90**

Father's occupational exposure groups	Exposed	
	Number	%
Agriculture	4,293	3.2
Agrochemicals	5,270	4.0
Animals	5,153	3.9
Ceramics/glass	850	0.6
Coal dust	5,172	3.9
Construction	15,086	11.4
Electromagnetic fields	13,079	9.9
Exhaust fumes	25,951	19.6
Fishing	279	0.2
Foodstuffs	6,278	4.7
Forces	7,383	5.6
Heat (prolonged exposure)	7,640	5.8
Hydrocarbons (inhaled)	46,397	35.0
Hydrocarbons (dermal)	24,702	18.6
Ionising radiation	1,597	1.2
Lead	9,058	6.8
Leather	927	0.7
Medical/healthcare	2,395	1.8
Metal	32,260	24.3
Metal acid mists	376	0.3
Metal fumes	12,959	9.8
Metal working (oil mists)	8,053	6.1
Mining	4,700	3.5
Paints	8,978	6.8
Paper production	310	0.2
Plastic	405	0.3
Printing	1,285	1.0
Rubber	423	0.3
Social contact	45,658	34.4
Solvents	22,548	17.0
Textile dust	4,134	3.1
Tobacco dust	36	<0.1
Wood dust	9,624	7.3

* 35,163 deaths (21per cent of the total) were not classified by father's occupational exposure.

† Aged 0 to 14 years. Deaths occurring within 28 days of birth, with a missing or invalid father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

observed – nine of which were raised with five being significantly reduced. No adjustments have been made for multiple comparisons as it was felt more appropriate to discuss and interpret each association in the context of existing evidence as suggested by Rothman.[25]

Those associations which were significantly reduced will not be discussed further as it is unlikely that father's occupation 'protects' against the development of childhood cancer.

These analyses showed that childhood kidney cancer was associated with father's occupational exposure to either agrochemicals, agriculture or animals. With respect to year of death, increased risks of similar magnitude were noted in each of the three time periods (data not shown). There is, however, substantial overlap between the occupations included in these three exposure groups and, therefore, the results cannot be treated as independent. But the consistency of the findings for childhood kidney cancer and father's occupational exposure to agrochemicals and/or agriculture with results previously published lead to the conclusion that the results reported here are unlikely to be due to chance. No other studies have examined the relationship between father's occupational exposure to animals and offspring's risk of kidney cancer and it is possible that this finding is a reflection of the results reported for father's occupational exposure to either agriculture or agrochemicals. These findings are discussed in more detail elsewhere.[17,18]

The offspring of men who were exposed to either metal working (oil mists) or solvents at work had an increased risk of death due to non-Hodgkin's lymphoma. There is, however, substantial overlap between these two occupational exposure groups. It is, therefore, difficult to determine whether or not the increased risk is a result of father's occupational exposure to oil mists, solvents, a combination of the two or another (or more) exposure(s). Further investigation of these findings may be warranted, since, to our knowledge, no other studies have examined the relationship between father's occupational exposure to oil mists or solvents and childhood non-Hodgkin's lymphoma.

For father's occupational exposure to electromagnetic fields and childhood leukaemia; printing and childhood cancers of the brain and other parts of the nervous system; and wood dust and childhood cancers of the brain and other parts of the nervous system, the estimates of risk reduced in size becoming non-statistically significant once deaths from causes other than cancer were excluded from the standard for comparison (i.e. the calculation of the proportional cancer mortality ratio). This implies that other causes of death were disproportionately influencing the original PMRs for these causes of death within these particular occupational exposure groups. It is, therefore, difficult to draw any conclusions about these possible associations.

Among the offspring of men with occupational exposure to rubber, there was a statistically significant increase in the risk of death due to bone cancer. Examination of these data by year of death showed a six and a half fold increase in risk for the earliest time period, 1959–63 (data not shown). Over the 26-year period investigated, awareness of the potential hazards associated with occupational exposure to rubber have increased and, as a consequence, exposures have been minimised.[26] However, as the association observed was based on only a small number of deaths, it is possible that it arose due to chance and should be treated with caution.

Conclusions

Evidence has gradually been accumulating over the last 20 years which suggests that father's occupation (and related exposures) may play a role in the development of childhood cancer.[2] Due to the rarity of childhood cancer, most of the previously conducted studies have had low statistical power as they were based on small numbers of cancers. This is the largest dataset ever analysed to explore the role of father's occupational exposures in the development of childhood cancer.

Analyses of these data provided support for the previously observed association between father's occupational exposure to either agriculture or agrochemicals and childhood kidney cancer. The association between father's occupational exposure to metal working (oil mists) and/or solvents and childhood non-Hodgkin's lymphoma provides a lead for further research.

It was not possible to use the data presented here to examine the role of mother's occupation on offspring's risk of death due to cancer as this information has only been collected on childhood death certificates since 1986. However, once more data are available it may be possible to repeat an analysis similar to that presented here but based on mother's rather than father's occupation.

In order to monitor the 'relationship' between death during childhood due to cancer and father's occupational exposures and to aid in the direction of future research, it might prove useful to analyse childhood death certification data every ten years, as is already done to examine the influence of occupation on the health of adults.[15]

Given the public health importance of childhood cancer, it is essential that the findings reported in this article are investigated further using data on incident cases of childhood cancer which incorporate more refined biological and parental occupational information. Further research is also needed to clarify the biological mechanisms underlying these postulated relationships.

Table 8 **Observed number of deaths, PMRs* and 95 per cent confidence intervals (CI) for deaths from cancer among children† by occupational exposure of the father****

Father's occupational exposure	Cancer (ICD 7th Revision[9])														
	Kidney			Brain and nervous system			Bone			Non–Hodgkin's lymphoma			Leukaemia		
	Deaths	PMR*	95% CI	Deaths	PMR*	95% CI	Deaths	PMR*	95% CI	Deaths	PMR*	95% CI	Deaths	PMR*	95% CI
Agriculture	36	164	118–227***	94	84	69–103	16	68	42–111	28	90	62–131	144	82	69–96 ††
Agrochemicals	42	159	118–215***	109	83	69–100	18	66	42–105	31	87	61–123	180	87	76–101
Animals	43	169	125–227***	116	90	75–108	17	64	40–102	28	81	56–117	165	80	69–94 ***
Ceramics/glass	-	-	-	17	114	71–184	-	-	-	4	113	31–290	25	104	70–153
Coal dust	21	87	57–133	104	91	75–111	27	106	73–155	24	75	50–112	199	105	91–120
Construction	57	99	76–128	333	109	98–121	55	94	72–122	83	107	86–133	487	101	93–111
Electromagnetic fields	45	82	61–109	282	104	93–117	67	127	100–161	66	99	78–126	507	116	106–127 ***
Exhaust fumes	98	89	76–109	445	86	78–94 †††	99	96	79–117	130	96	81–115	802	94	88–101
Fishing	3	325	67–950	5	87	28–204	-	-	-	-	-	-	6	73	27–160
Foodstuffs	22	86	56–130	135	104	88–123	23	85	57–128	28	90	62–130	195	91	79–105
Forces	33	100	71–140	169	105	90–122	33	111	79–156	40	105	77–144	210	98	85–112
Heat (prolonged exposure)	21	71	46–108	148	102	87–120	32	112	79–159	38	106	77–145	235	100	88–113
Hydrocarbons (inhaled)	194	100	87–115	965	98	92–104	203	100	87–115	259	103	92–117	1,559	98	93–103
Hydrocarbons (dermal)	119	112	94–135	525	100	92–109	97	90	74–110	145	111	94–131	875	106	99–113
Ionising radiation	7	96	38–197	47	101	76–135	11	150	83–270	11	96	53–174	54	74	56–96 ††
Lead	48	131	99–174	205	113	98–129	33	87	62–122	50	111	84–146	274	93	83–105
Leather	4	113	31–289	11	66	36–119	4	141	38–361	5	114	37–265	27	101	70–148
Medical/healthcare	9	87	40–166	66	98	77–125	16	130	80–212	20	113	73–176	81	75	61–94 ***
Metals	150	108	92–127	714	104	96–112	150	106	90–124	183	106	92–122	1,159	105	100–112
Metal acid mists	-	-	-	5	65	21–152	-	-	-	-	-	-	10	88	47–164
Metal fumes	58	103	80–133	293	107	95–120	56	99	76–129	69	102	81–129	480	109	100–119
Metal working (oil mists)	45	129	96–172	183	105	91–122	33	91	65–128	62	146	114–187***	270	102	90–115
Mining	21	93	61–143	97	93	76–113	27	116	76–169	22	74	49–113	172	98	85–114
Paints	34	94	67–132	180	101	87–116	32	87	61–123	54	124	95–161	275	95	85–107
Paper production	-	-	-	5	74	24–173	-	-	-	-	-	-	16	147	90–239
Plastic	-	-	-	9	112	51–213	-	-	-	3	167	34–487	15	139	84–231
Printing	9	164	75–311	41	149	110–202 ††	7	122	49–251	6	86	32–187	40	90	66–123
Rubber	3	146	30–426	4	46	13–119	6	296	109–645 ††	-	-	-	14	95	56–160
Social contact	202	99	86–113	1,136	102	96–108	245	102	90–115	280	101	90–114	1,828	98	93–102
Solvents	107	113	93–136	516	107	98–117	94	95	78–117	149	126	108–148***	771	101	95–109
Textile dust	20	131	85–204	61	81	63–105	14	102	60–173	18	100	63–158	111	97	80–117
Wood dust	34	85	60–118	241	120	106–137 ***	39	92	67–126	53	106	81–138	327	102	92–114

* Adjusted for age at death, year of death and father's social class. Using as the standard for comparison all childhood deaths with valid occupational information on the father. Only those PMRs based on three or more deaths have been presented.

† Aged 0 to 14 years. Deaths occurring within 28 days of birth, with invalid or missing father's occupation or year of death, or whose usual residence was outside England and Wales are excluded.

** No results are presented for father's occupational exposure to tobacco dust as there were only four cancer deaths within this group.

†† P<0.05. *** P<0.01. ††† P<0.001.

Key findings

- Routinely collected certification data on deaths occurring under 15 years of age in England and Wales for a 26-year period (1959–63, 1970–78 and 1979–90) were provided by the Office for National Statistics for the purpose of occupational analyses.
- Deaths occurring within the first 28 days of life, those with a missing or invalid father's occupation or year of death, and those whose usual residence was outside England and Wales were excluded.
- Data on father's occupation and cause of death were bridge coded to common classifications.
- Notable differences in the distribution of childhood deaths by age and father's social class were observed.
- Analyses of these data provided support for a role of father's occupational exposure to either agrochemicals or agriculture in the development of childhood kidney cancer. Additional associations were observed but require cautious interpretation, providing leads for future research.
- These analyses represent the most comprehensive study of childhood death certification data with regards to offspring's risk of death and father's occupation conducted to date.

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Trends in life expectancy by social class – an update

Lin Hattersley,
ONS

This paper examines trends in life expectancy in England and Wales by social class up to 1996. It updates a previous analysis published in *Health Inequalities*.[1] The clear inequalities reported then are still present. Life expectancy at birth for men in Social Class I rose to 77.7 years by 1996 and that for men in Social Class V to 68.2 years (an increase of exactly 1 year and just under 4 months respectively when compared with 1987–91). Life expectancy at birth rose to 83.4 years for women in Social Class I and to 77.0 years for women in Social Class V. This represents rises of 2.5 years and just under 10 months respectively since 1987–91. The difference in life expectancy between Social Classes I and V was 9.5 years for men and 6.4 years for women by 1996. Inequalities in expectation of life between the social classes among women were decreasing up to 1991 but this trend has reversed and there is now a clearer social class gradient in life expectancy. An examination of the chance of survival from ages 25–29 to 65–69 showed a clear manual/non-manual divide in the probability of survival for women from 1972 but not for men until 1991. The probability of survival from 65–69 to at least age 85 shows a clear manual/non-manual divide for both sexes from 1972 onwards.

Introduction

This article updates and expands an analysis published in the 1997 decennial supplement, Health Inequalities,[1,2] which presented data on the expectation of life by social class in England and Wales between 1972 and 1991.

It was found that by 1991 there was a 5-year difference in the expectation of life at birth between men in the professional and managerial social classes (Registrar General's Social Classes I and II) and those in the semi-skilled and unskilled manual classes (Social Classes IV and V) – a rise of just over 1 year since 1972–76. For women the differential was 3 years – a rise of exactly 1 year. This article updates these results to 1996 and examines the change in inequalities between the social classes as well as the effects of differential survival on an ageing population.

The previous work presented analyses of life expectancy by aggregated social classes. Social Classes I and II were considered as a single group as were Social Classes IV and V. Social Classes IIIN and IIIM remained separate. However, when examining life expectancy by disaggregated social classes it appeared that the life expectancies for Social Classes II and IIIN were closer together than those for Social Classes I and II. Social Classes IIIM and IV were also more clearly grouped than IV and V. By the end of the 25-year period (1972–96) life expectancies for Social Classes I and V were beginning to appear as outliers, particularly for men. As a result this article uses disaggregated social classes; that is Classes I, II, IIIN, IIIM, IV and V. Details of the Registrar General's Social Classes are shown in Box One.

Box one

Registrar General's Social Class (based on occupation)

Class	Occupation type	Examples
Non-manual		
I	Professional	Doctors, accountants, engineers
II	Managerial and technical/ intermediate	Marketing and sales managers, teachers, journalists
IIIN	Skilled non-manual	Clerks, cashiers, retail staff
Manual		
IIIM	Skilled manual	Carpenters, goods van drivers, joiners
IV	Partly skilled	Warehousemen, security guards, machine tool operators
V	Unskilled	Building and civil engineering labourers, other labourers, cleaners

The data used in this, and the previous, analysis are derived from the ONS Longitudinal Study (LS). The LS is a representative 1 per cent sample of the population of England and Wales. It was begun in the early 1970s with a sample selected from the 1971 Census using four birth dates in any year as the selection criteria. It is a record linkage study that is regularly updated with census and vital events data (births, deaths and cancer registrations). Population change is reflected by the addition of new members born on LS dates and the recording of exits by emigration or death.[3] The 1996 mortality data for LS members became available for analysis in 1998. This has allowed life expectancies to be calculated for the 5 years 1992–96, extending the series to 25 years.

This article examines trends in life expectancy up to 1996 for both men and women and shows that although life expectancy is still increasing for all social classes, the patterns of inequality observed previously[1] are still present, and in some cases still widening. It also examines where gains in years of life have been made and what the effect has been on the probability of survival from age 25 to 65, and from age 65 to 85.

Methods

All LS members who had entered the study between 1971 and 1996 and were registered with the NHS Central Register (NHSCR) were eligible to be used in this analysis. LS members were excluded from the sample if they were not registered at NHSCR, were registered but had been lost to follow-up, or had been misclassified as present at census when other records showed them as dead or emigrated prior to census. Further details of the methods used to include or exclude LS members in the study are given elsewhere.[4] After the exclusions had been applied 773,268 LS members remained, of whom 634,730 were still alive and resident in England and Wales on 1 January 1992 and a further 43,801 were born or immigrated into the sample after that date. The population used to calculate life expectancies for each 5 year-period reflects the structure of the population present in England and Wales and at risk of dying over that period.

The Registrar General's occupationally based social class was applied to each LS member at their point of entry to the study and held constant over time. Thus, if a person entered the LS at the 1971 Census their 1971 social class was used throughout the follow-up period. Own social class was used wherever possible but those aged under 16, and individuals either in the Armed Forces or with no social class of their own (such as the retired, students, housewives, the permanently sick and those whose occupations were either inadequately described or missing) were reclassified. In the case of children, parental social class was used, otherwise the social class of the LS member was taken to be the same as that of their spouse if they were married. 32 per cent of men who entered the LS in 1971 were originally unclassified. Of these, 25 per cent were children who were reclassified according to their parental social class. The other 7 per cent of these men remained unclassified. Among women who entered in 1971, only 35 per cent had their own social class. Twenty six per cent were allocated to their spouse's social class and 23 per cent to their parental social class.

Table 1 Life expectancy by social class, men, selected ages, England and Wales, selected years

Social Class	1972–76	95% CL	1977–81	95% CL	1982–86	95% CL	1987–91	95% CL	1992–96	95% CL
Life expectancy at birth (years)										
I	72.0	± 1.4	74.7	± 1.4	75.1	± 1.2	76.7	± 1.1	77.7	± 1.0
II	71.7	± 0.3	72.4	± 0.6	73.8	± 0.6	74.4	± 0.6	75.8	± 0.5
IIIN	69.5	± 0.5	70.8	± 0.8	72.2	± 0.8	73.5	± 0.8	75.0	± 0.8
IIIM	69.8	± 0.3	70.0	± 0.5	71.4	± 0.4	72.4	± 0.4	73.5	± 0.4
IV	68.4	± 0.4	68.8	± 0.7	70.6	± 0.6	70.4	± 0.6	72.6	± 0.6
V	66.5	± 0.9	67.0	± 1.1	67.7	± 1.1	67.9	± 1.0	68.2	± 1.2
All Men	69.2	± 0.2	70.0	± 0.3	71.4	± 0.2	72.3	± 0.2	73.9	± 0.2
Life expectancy at age 65 (years)										
I	14.2	± 1.3	15.5	± 1.2	15.4	± 1.0	15.8	± 1.0	16.8	± 0.8
II	13.3	± 0.1	14.2	± 0.5	14.4	± 0.4	14.8	± 0.4	15.5	± 0.4
IIIN	12.6	± 0.1	13.3	± 0.6	13.6	± 0.5	14.1	± 0.5	15.1	± 0.6
IIIM	12.2	± 0.1	12.6	± 0.3	13.0	± 0.3	13.4	± 0.3	14.2	± 0.3
IV	12.3	± 0.1	12.1	± 0.4	12.6	± 0.4	12.7	± 0.4	13.8	± 0.4
V	11.6	± 0.1	11.9	± 0.5	11.7	± 0.6	11.8	± 0.6	12.6	± 0.7
All Men	12.3	± 0.04	12.7	± 0.2	13.1	± 0.2	13.5	± 0.2	14.6	± 0.2

Table 2 **Change in years of life expectancy by social class, men, selected ages, England and Wales, selected years**

	1972–1991		1972–1996	
Social Class	At birth	At age 65	At birth	At age 65
I	4.7*	1.6	5.7*	2.6*
II	2.7*	1.5*	4.1*	2.2*
IIIN	4.0*	1.5*	5.5*	2.5*
IIIM	2.6*	1.2	3.8*	2.0*
IV	2.1*	0.4	4.2*	1.5*
V	1.4	0.2	1.7	0.9*
All Men	3.0	1.2	4.7	2.3

Note : Differences between tables due to rounding.
* Statistically significant at the 1 per cent level.
Two-tailed test for difference between means.

Seventeen per cent remained unclassified. The majority of new entries of both sexes at the 1981 and 1991 Censuses were children who were allocated their parental social class. Immigrants entering the LS intercensally who were present at the next census were allocated a social class from that census. Further details of the method of allocation of social class are given elsewhere.[4] 88 per cent of men and 80 per cent of women were assigned a social class using these methods.

Abridged life tables were constructed for each social class using the standard methods [5,6] for a series of 5-year periods beginning in 1972. This current analysis uses these methods to construct life tables and generate life expectancies by social class for the period 1 January 1992 to 31 December 1996.

Results

Life expectancy of men

Life expectancies by social class for men at birth and at age 65, for the complete period of the study (1972 to 1996) are shown in Table 1. As can be seen life expectancy was still rising for all social classes although the pattern of differentials commented on elsewhere[1] is still present in the most recent data. By 1996 the expectation of life at birth for men in Social Class I had risen to 77.7 years and that for Social Class V to 68.2 years. Between 1992 and 1996 men in most social classes gained from 1 to 1.5 years in expectation of life at birth, with the exception of those in Social Class IV who gained just over 2 years and those in V who gained approximately 4 months. Gains in expectation of life at age 65 for the same period ranged between 0.7 years (8 months) and 1 year. It should be noted that confidence intervals are larger for Social Classes I and V due to the smaller numbers of LS members in those classes.

Change in male life expectancy over time

Between 1972 and 1996 all men had made gains in life expectancy at birth of 4.7 years (a rise of just under 2 years compared with the previous series of 1972 to 1991) and 2.3 years at age 65 (a rise of 1.1 years since 1991) shown in Table 2.

The largest gains in life expectancy were made by men in Social Class I, both at birth (a gain of 5.7 years) and at age 65 (2.6 years), closely followed by those of men in Social Class IIIN (5.5 years and 2.5 years). The smallest gains were made in Social Class V (gains of 1.7 years and 0.9 years respectively). Compared with the previous series of 1972–91, men in Social Classes IIIN and IV had gained more years in expectation of life at birth than men in Social Class II by 1996. At age 65 Social Class IV had gained more years than any other social class (1.1 years) and Social Classes II and V the least.

Table 3 shows the percentage overall change in life expectancy by social class between 1972 and 1996. In percentage terms the gains made at age 65 are far greater than at birth. This suggests that men are gaining proportionately more years in life expectancy at age 65 and over than at younger ages. Up to 1991 only men in Social Classes II and IIIM were gaining substantial proportions of life expectancy at age 65. However, by 1996 over half the years of life expectancy gained by men in Social Classes II, IIIM and V were being gained at older ages (see Table 2).

Differences in male life expectancy between Social Class I and the other social classes

The differences in expectation of life between Social Class I and the other social classes, shown in Table 4, show a marked gradient for 1992–96. The difference in expectation of life at birth between Social Classes I and V now stands at 9.5 years, a rise of just under a year when compared with the difference in the 1987–91 period. The difference at age 65 has also risen, but only by 0.2 of a year (4.2 years compared with 4.0 years in 1991).

The differences in expectation of life at birth between men in Social Class I and the other social classes over the whole time period of the study (1972–96) are shown in Table 4 and Figure 1. The pattern of inequalities over time follows the classic social class gradient running from I to V from 1977 onwards. In the first time period (1972–76) the difference between Classes I and II was extremely small (0.2 years) compared with differences for the other classes. The difference for Social Class IIIN was greater than that for IIIM and the differential was greatest between Classes I and V. By 1981 there was a substantial widening of the differences. This appears to be partly due to the fact that over 50 per cent of the gains in life expectancy made by Social Class I were made between 1972 and 1981. There was some decrease in differences by 1986, but they were still greater than they had been in the 1972–76 period. By 1996 the differences between Social Class I and all other social classes were greater than they had been at the beginning of the study.

Table 3 **Percentage overall change in life expectancy by social class, men, England and Wales**

Social Class	Between 1972–76 and 1992–96 (Percentage change)
At birth	
I	7.9
II	5.7
IIIN	7.9
IIIM	5.3
IV	6.1
V	2.6
All Men	6.8
At age 65	
I	18.3
II	16.5
IIIN	19.8
IIIM	16.3
IV	12.2
V	8.6
All Men	18.7

Table 4 **Differences in years of life expectancy by social class, men, selected ages, England and Wales, 1972–96**
(using Social Class I as the standard)

	1972–76	1977–81	1982–86	1987–91	1992–96
Life expectancy at birth					
Social Class:					
Life expectancy Social Class I	71.9	74.7	75.1	76.6	77.7
Difference between I and:					
II	0.2	2.3 *	1.3	2.2 *	1.9 *
IIIN	2.4 *	3.9 *	2.9 *	3.1 *	2.7 *
IIIM	2.2 *	4.6 *	3.7 *	4.3 *	4.2 *
IV	3.6 *	5.8 *	4.5 *	6.2 *	5.1 *
V	5.5 *	7.6 *	7.4 *	8.8 *	9.5 *
Life expectancy at age 65					
Social Class:					
Life expectancy Social Class I	14.2	15.4	15.4	15.8	16.8
Difference between I and:					
II	0.9	1.3	1.0	1.0	1.3 *
IIIN	1.6	2.1 *	1.8 *	1.7 *	1.7 *
IIIM	2.0 *	2.9 *	2.4 *	2.4 *	2.6 *
IV	1.9 *	3.3 *	2.8 *	3.1 *	3.0 *
V	2.6 *	3.6 *	3.7 *	4.0 *	4.2 *

Note : Differences between tables due to rounding.
* Statistically significant at the 1 per cent level.
Two-tailed test for difference between means.

At age 65 the pattern is similar with an initial peaking of the differences in the 1977–81 period (Figure 2). This peak was not exceeded at any later period except by Social Class V. However, the differences in life expectancy at age 65 between Social Class I and all other social classes were greater in the final time period than in 1972–76.

Differential survival among men

As stated previously, proportionately more years of life expectancy appear to be being gained at older ages, defined as 65 and over, among men. However, to be able to gain those extra years it is essential to survive to age 65 in the first place. Figure 3 shows the probability of surviving from ages 25–29 to ages 65–69 for each social class over the

Figure 1 **Difference in male life expectancy at birth between Social Class I and other social classes 1972–96**

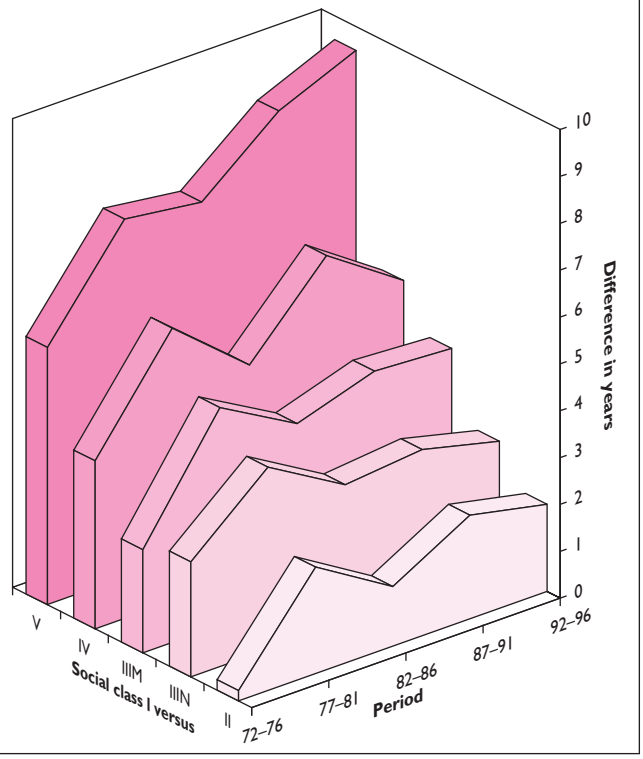


Figure 2 **Difference in male life expectancy at age 65 between Social Class I and other social classes 1972–96**

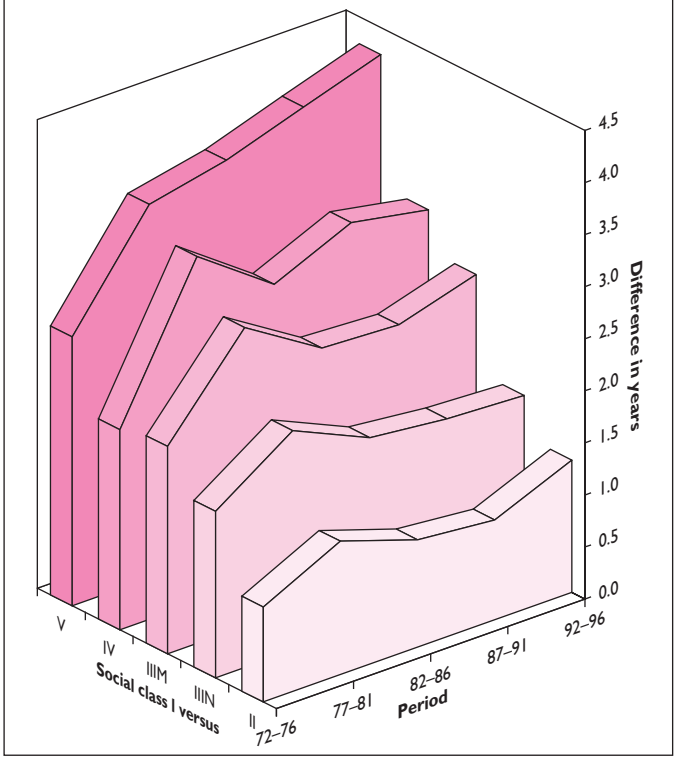


Figure 3 The probability of surviving from age 25–29 to age 65–69, by social class, men, England and Wales, 1972–96

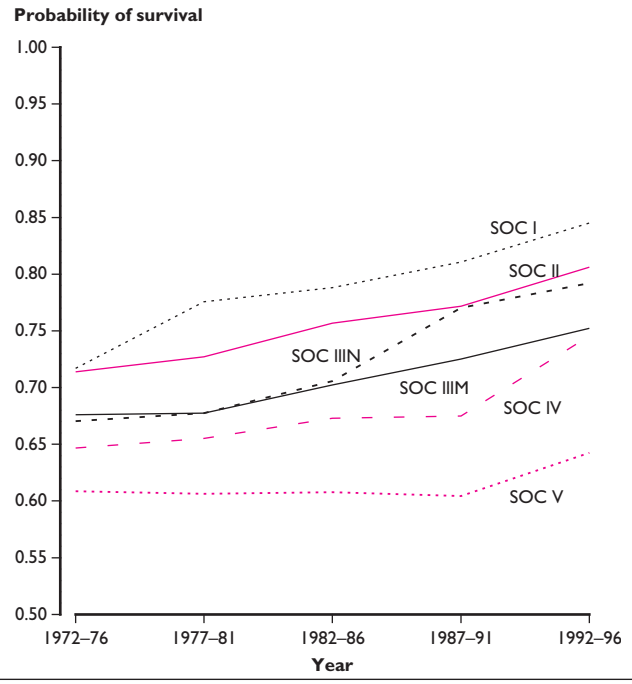
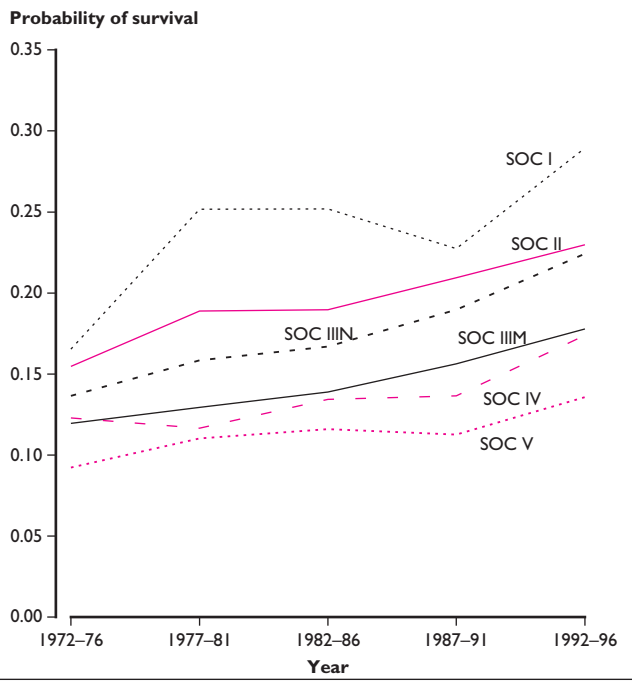


Figure 4 The probability of surviving from age 65–69 to age 85–89, by social class, men, England and Wales, 1972–96



period of the study. At the beginning of the study, if a man had survived into the 25–29 year age group he had between a 61 to 72 per cent chance of surviving to at least age 65. Men in Social Classes I and II had the greatest chance of survival whilst men in Social Class V had the least. By 1996 the probabilities of surviving had increased for men in all classes, but whilst those chances had increased to just over 84 per cent for men in Social Class I, and to between 75 and 80 per cent for Social Classes II, IIIN, IIIM and IV, men in Social Class V had only increased their chance of survival by 3 percentage points (to 64 per cent) over the 25-year period. There is no clear differential between the probabilities of survival for men in the manual compared with non-manual social class groupings until after 1986.

For those men who survived to age 65 (13.2 per cent of all men in England and Wales were aged 65 or over in 1996)[7] the probabilities of surviving another 20 years are shown in Figure 4. At the beginning of the study the probability of surviving into the age group 85–89 did not vary greatly by social class (the chance of survival ranged from 9 to 16 per cent), but by 1996 the pattern of survival had changed. Men in Social Class I now had a 29 per cent chance of reaching at least 85 years of age whilst those in Social Classes II and IIIN had between a 22 and 23 per cent chance, men in Social Classes IIIM and IV a 17 to 18 per cent chance and men in Social Class V only a 14 per cent chance of living another 20 years. The manual/non-manual divide is clearly shown for the probability of survival to at least 85 over the whole period of the study.

Table 5 Life expectancy by social class, women, selected ages, England and Wales, selected years

Social Class	1972–76	95% CL	1977–81	95% CL	1982–86	95% CL	1987–91	95% CL	1992–96	95% CL
Life expectancy at birth (years)										
I	79.2	± 2.4	79.9	± 2.2	80.4	± 1.5	80.9	± 1.2	83.4	± 1.2
II	77.0	± 0.7	78.1	± 0.6	78.5	± 0.6	80.0	± 0.6	81.1	± 0.5
IIIN	78.0	± 0.9	78.1	± 0.7	78.6	± 0.6	79.4	± 0.6	80.4	± 0.6
IIIM	75.1	± 0.8	76.1	± 0.6	77.1	± 0.5	77.6	± 0.5	78.8	± 0.5
IV	75.0	± 0.8	76.1	± 0.7	77.3	± 0.6	77.0	± 0.6	77.7	± 0.6
V	73.9	± 1.4	74.9	± 1.2	75.3	± 1.1	76.2	± 1.0	77.0	± 1.0
All Women	75.1	± 0.3	76.3	± 0.3	77.1	± 0.2	77.9	± 0.2	79.3	± 0.2
Life expectancy at age 65 (years)										
I	19.3	± 2.4	19.9	± 2.2	18.5	± 1.4	18.7	± 1.0	20.8	± 1.0
II	17.1	± 0.6	17.7	± 0.5	18.0	± 0.5	18.7	± 0.4	19.5	± 0.4
IIIN	17.7	± 0.8	17.6	± 0.5	18.0	± 0.5	18.3	± 0.4	18.9	± 0.4
IIIM	16.3	± 0.7	16.9	± 0.5	16.8	± 0.4	16.8	± 0.4	17.9	± 0.4
IV	16.8	± 0.6	16.7	± 0.5	17.4	± 0.4	16.9	± 0.4	17.1	± 0.4
V	16.4	± 0.9	16.3	± 0.8	16.1	± 0.6	16.0	± 0.6	16.4	± 0.6
All Women	16.2	± 0.2	16.7	± 0.2	16.9	± 0.2	17.2	± 0.2	18.0	± 0.2

Table 6 Change in years of life expectancy by social class, women, selected ages, England and Wales, selected years

	1972–91		1972–96	
Social Class	At birth	At age 65	At birth	At age 65
I	1.7*	-0.7	4.2*	1.5
II	3.1*	1.6*	4.1*	2.4*
IIIN	1.3	0.6	2.4*	1.2
IIIM	2.5*	0.5	3.8*	1.6*
IV	2.0*	0.1	2.7*	0.3
V	2.3*	-0.4	3.1*	0.0
All Women	2.8	1.0	4.1	1.8

Note : Differences between tables due to rounding.
* Statistically significant at the 1 per cent level.
Two-tailed test for difference between means.

Life expectancy of women

Women's life expectancy is still rising, with expectation of life at birth reaching 79.3 years and expectation of life at age 65 reaching 18 years for all women by 1996 (Table 5). These figures represent increases of just under 1.5 years and approximately 10 months respectively when compared with the values for 1987–91. Between 1992 and 1996 the largest gains were made by women in Social Classes I and IIIM, both at birth and at age 65, the smallest by women in Social Classes IV and V. A social class gradient similar to that for men is now appearing, together with a more distinct division between Social Classes I and II when compared with the previous period.

Table 7 Percentage overall change in life expectancy by social class, women, England and Wales

Social Class	Between 1972–76 and 1992–96 (Percentage change)
At birth	
I	5.3
II	5.3
IIIN	3.0
IIIM	5.0
IV	3.5
V	4.2
All Women	5.4
At age 65	
I	7.7
II	13.8
IIIN	7.3
IIIM	9.5
IV	1.9
V	0.3
All Women	11.0

Change in female life expectancy over time

Table 6 shows that between 1972 and 1996 all women made a 4.1 year gain in life expectancy at birth and just under a 2 year gain at age 65. When compared with the life expectancies calculated for 1972–91, this shows a rise in years gained in the latest 5 years of the series of 1.3 and 0.8 years respectively.

Figure 5 Difference in female life expectancy at birth between Social Class I and other social classes 1972–96

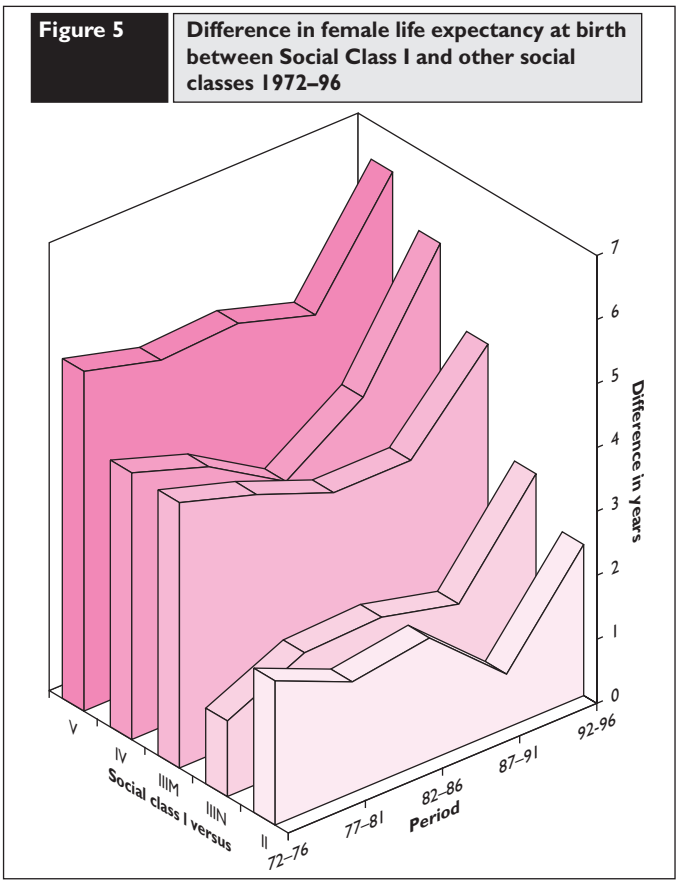


Figure 6 Difference in female life expectancy at age 65 between Social Class I and other social classes 1972–96

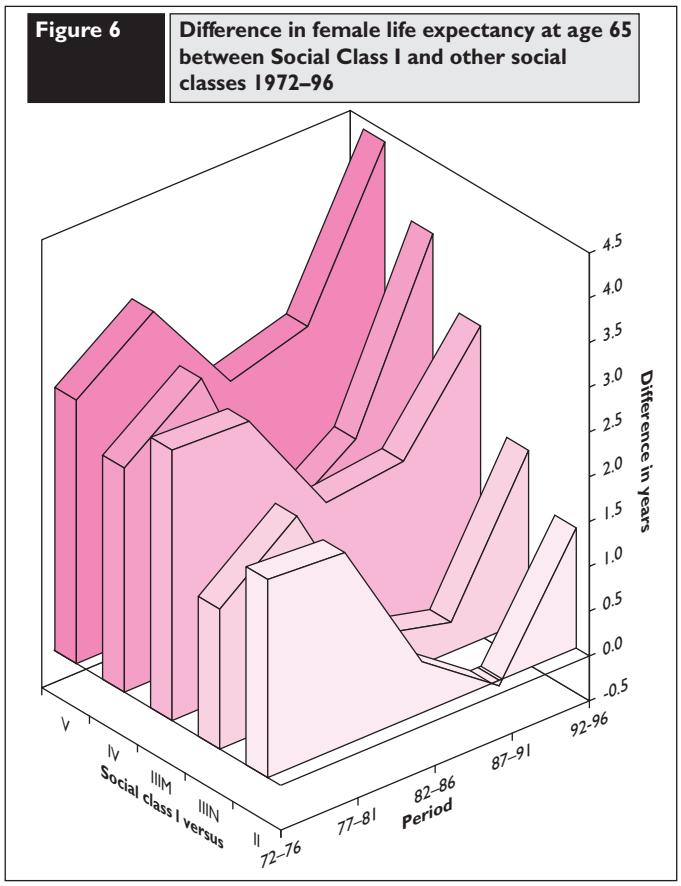


Table 8 **Differences in years of life expectancy by social class, women, selected ages, England and Wales, 1972–96**
(using Social Class I as the standard)

	1972–76	1977–81	1982–86	1987–91	1992–96
Life expectancy at birth					
Social Class:					
Life expectancy Social Class I	79.2	79.8	80.4	80.8	83.4
Difference between I and:					
II	2.2	1.7	1.9	0.8	2.4 *
IIIN	1.2	1.7	1.8	1.5	3.0 *
IIIM	4.1 *	3.8 *	3.3 *	3.3 *	4.6 *
IV	4.2 *	3.8 *	3.0 *	3.8 *	5.7 *
V	5.3 *	5.0 *	5.0 *	4.7 *	6.4 *
Life expectancy at age 65					
Social Class:					
Life expectancy Social Class I	19.3	19.9	18.5	18.7	20.8
Difference between I and:					
II	2.2	2.1	0.6	–0.1	1.3
IIIN	1.6	2.2	0.5	0.3	1.9 *
IIIM	3.0	3.0 *	1.7	1.8 *	3.0 *
IV	2.5	3.1 *	1.1	1.7 *	3.7 *
V	2.9	3.6 *	2.4 *	2.7 *	4.4 *

Note : Differences between tables due to rounding.
* Statistically significant at the 1 per cent level.
Two-tailed test for difference between means.

Disaggregating the social classes shows that most of the gains in life expectancy at birth since 1972 have been made by women in Social Classes I, II and IIIM. This is not the case at age 65 where women in Social Class II gained substantially more than women in other classes. This pattern is different from that seen at 1991 where most gains made by Social Class II, both at birth and at age 65, were higher than those made by any of the other social classes. At age 65 losses in life expectancy between 1972–91 were seen for women in both Social Classes I and V. The addition of another 5 years to the series has reversed this trend.

Table 7 shows percentage overall change in life expectancy for women between 1972 and 1996, at birth and at age 65. Growth in life expectancy for women has not been so dramatic in percentage terms as that for men and the pattern of age-related change appears different. Gains in life expectancy are still being made at younger ages for women, particularly those in Social Classes I, IV and V. Only women in Social Classes II and IIIN are making over half their gains at age 65 or over.

Differences in female life expectancy between Social Class I and other social classes

The differences in life expectancy between Social Class I and the other social classes for women during the period 1992–96 (Table 8) show a clear gradient running from a difference of 2.4 years for Social Class II to 6.4 years for Social Class V at birth, and 1.3 years to 4.4 years at age 65. In the previous period (1987–91) only differences in life expectancy at birth showed a gradient. Life expectancy at age 65 did not do so, and indeed the life expectancy for women in Social Class II was the same as that for Social Class I.

The differences in expectation of life at birth between Social Class I and the other social classes over the whole period of the study are shown in Figure 5. These differences showed a narrowing by 1991 with the exception of that between women in Social Class I and those in Social Class IIIN. However, in the final period of the study a marked widening occurred. By 1996 the differences in expectation of life at birth between Social Class I and the other social classes were greater than they had been since 1972–76. The manual/non-manual divide is clearly delineated throughout the 25 years of the study and by 1991 the classic social class gradient is also apparent.

The differences in life expectancy at age 65, between Social Class I and the other social classes showed that, like the pattern seen for expectation of life at birth, the differences decreased between 1972 and 1991, only to increase again by 1996. This was particularly noticeable for women in Social Classes IIIN, IV and V. Life expectancy for women in Social Classes II and IIIN showed very little difference when compared with Social Class I in 1991 but by 1996 those differences had increased. At the end of the 25-year period only women in Social Classes II and IIIM had differences, compared to Social Class I, that were lower than they had been at the beginning of the study.

Differential survival among women

Although most gains in life expectancy for women still appear to be occurring before age 65 their greater longevity, compared to men, ensures that a higher proportion will live to be aged 65 or over. In England and Wales in 1996 18.5 per cent of women were 65 and over and 9.3 per cent were aged 75 and over.[7] Among women reaching the ages of 25–29 in the 1972–76 period the chances of reaching the ages of 65–69 ranged from 86 per cent for Social Class I to 78 per cent for Social Class IIIM. Women in Social Class V had a slightly higher chance of reaching 65–69 (79 per cent) than did those in IIIM. By the end of the study women in Social Class I still had the highest chance of reaching at least age 65 (93 per cent) but women in Social Class V now had the lowest (81 per cent). Even though the probability of survival into their sixties for women in all social classes is high, there is still a clear division between those in the manual and non-manual classes. Those women in the non-manual classes have a higher probability of survival to age 65.

In the first time period of the study if a woman had reached the age of 65 she had a 34 per cent chance of living at least another 20 years if she was in Social Class I, but only a 25 per cent chance if she was in Social Class IIIM. Women in Social Classes IV or V had a slightly higher

Figure 7 The probability of surviving from age 25–29 to age 65–69, by social class, women, England and Wales, 1972–96

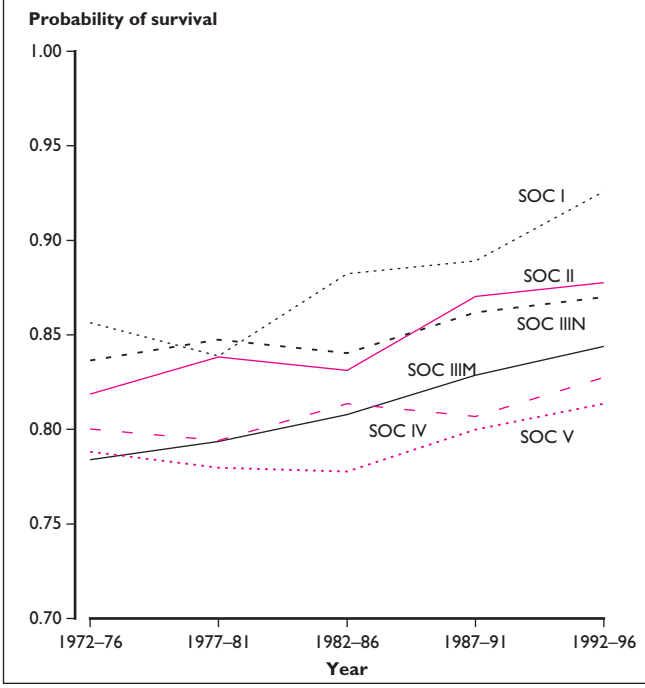
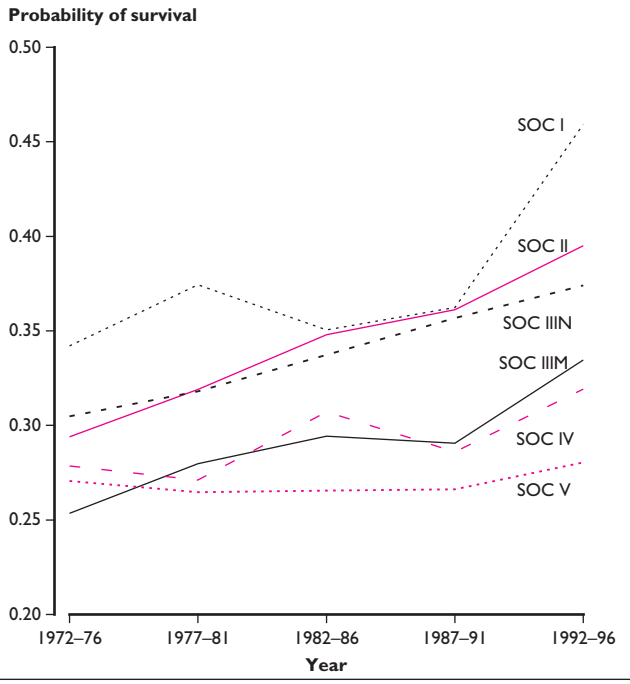


Figure 8 The probability of surviving from age 65–69 to age 85–89, by social class, women, England and Wales, 1972–96



probability of living to at least 85 (a 28 and 27 per cent chance respectively) than those in IIIM. Between 1972 and 1996 the chance of surviving to 85 and over had increased by 12 per cent (to 46 per cent) for a woman in Social Class I but only by 1 per cent (to 28 per cent) for a woman in Social Class V. The original survival advantage that a Social Class V woman had exhibited over a woman in Social Class IIIM had been lost by 1981 and was never regained. Over the 25-year period a clear divide in the probabilities of survival to old age emerged between those women in the manual social classes compared with those in the non-manual.

Discussion

Although life expectancy was rising for men and women in all social classes marked differentials between the classes were still present and widening. The differentials among women have become more marked with the social class gradient now becoming clearer. Members of Social Class V, regardless of sex, have shown very little gain in life expectancy over time and exhibit a very different picture to the other social classes.

Work by Blane and Drever[8] examining years of potential life lost for men aged 20–64 showed that the manual social classes were losing more potential years of life – that is dying younger – than the non-manual classes. This was shown for all causes as well as for the separate causes of ischaemic heart disease, malignant neoplasms and accidents and violence. As has been found in this analysis of life expectancy, Blane and Drever showed that the mortality pattern for men in Social Class IV has become closer to that of Social Class IIIM leaving Social Class V to become an outlier. This seems to have been particularly influenced by the increase in years of life lost due to accidents and violence among men in Social Class V. Deaths from accidents and violence tend to occur at younger ages than death from other causes and may be contributing disproportionately to the lack of improvement in life expectancy seen among men in this social class.

The similar pattern of little improvement in life expectancy for women in Social Class V over the 25 years of this study is not easy to explain. The problems of allocating occupational social classes to women are well known.[9,10,11,12,13] This analysis has attempted to allocate social classes to women where they did not have one of their own either by using a spouse's or a father's social class as a proxy. Forty one per cent of married women who entered the LS in 1971 had their own social class. When this was compared with that of their husbands it was found that two thirds of the married women had a social class that was higher or the same, the remaining one third had a lower social class. This suggests that assigning a spouse's social class to those married women who had no social class of their own would have redistributed the majority of them into the same or a lower social class compared to that from which they originally came. It would be expected that this would raise the survival rates among the lower social classes and lower them among the higher. This may go some way towards explaining the difficulties of interpreting the patterns seen in women's expectation of life, but it still does not explain why the manual/non-manual divide is evident nor why a social class gradient is now becoming very clear for women.

In an ageing population with low death rates and birth rates below replacement level, survival to very old age is now becoming common. However, although the probability of reaching very old ages is rising it too shows a class gradient. There is a definite manual/non-manual divide in the likelihood of surviving to older ages. Work looking at mortality by social class has shown that although there has been a fall in the death rates for both men and women of working ages (35–64) deaths from ischaemic heart disease, cancers, respiratory diseases and indeed all causes are showing a widening manual/non-manual divide.[14]

The causes of the widening inequalities observed in this study and many others are not easy to disentangle.[15] Many suggestions have been put forward to explain the existence of inequalities including the effects of income differentials[16,17] and occupational stress.[18,19,20,21,22,23] Certainly recent work examining the effect of adverse childhood conditions on adult mortality[24] suggests that certain causes of death are related to deprived socio-economic conditions operating in childhood only (stroke

and stomach cancer), others to childhood deprivation plus adult circumstances (coronary heart disease and respiratory disease) whilst others, such as lung cancer, are associated with social circumstances and risks in adulthood. This study, however, only includes a sample of men and may not apply to women.

The differences seen in the probabilities of survival to older ages by the manual and non-manual groups suggest that there are major lifestyle differences between the groups that not only operate in early life in some cases but in later life in others. Certainly behaviours such as smoking[25,26,27] and eating a healthy diet are known to be class associated.[28] For women diagnosis and treatment of certain diseases such as ischaemic heart disease seem to be based on the male model of the disease which may not be appropriate.[29] Although differential access to healthcare was considered to be a contributing factor in the 1970s[30] more recent work suggests that this inequity may no longer exist.[31,32]

A higher proportion of people are surviving into very old age, but this work has shown that the probabilities of survival are unequally distributed. Mortality has been compressed into the later years of life, but it does not follow that extended survival means healthy survival. These data have shown that the probability of survival from age 65–69 to at least age 85 is higher for both men and women in the non-manual classes. Those in the manual groups (especially in Social Class V) show much lower chances of achieving very old age. We do not yet know whether surviving to very old ages shows compression of morbidity for the majority or whether the last years are accompanied by increasing frailty and ill health.

Key findings

- Life expectancy has increased for all social classes since 1972 but this disguises increasing inequality. For men the difference in life expectancy at birth between Social Classes I and V has risen from 5.5 years in 1972–76 to 9.5 years by 1996. The difference for women has risen from 5.3 years to 6.4 years.
- Women were showing decreasing inequality between the classes until 1991 but more recently these inequalities have begun to widen.
- Most gains in life expectancy for men are now occurring at older ages. Among women those in Social Classes IV and V are still gaining more years of life at younger ages.
- The probability of survival to very old ages (85 and over) is higher among the non-manual social classes than the manual and this difference is becoming more pronounced over time.

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Prevalence of treated chronic diseases in general practice in England and Wales – trends over time and variations by the ONS area classification

Kath Moser and Azeem Majeed, *ONS*

In this study we examine the prevalence of treated chronic diseases in general practice, trends over time, and variations by the ONS 1991 area classification. The data for the study come from the General Practice Research Database; analyses are based on information from 288 practices in England and Wales, with a combined list size of over 2 million patients. Diseases considered are coronary heart disease, hypertension, depression or anxiety, and diabetes. The recorded prevalence of the treatment of these diseases increased between 1994 and 1996; for example, the prevalence of treated depression or anxiety in 1996 was 19 per cent higher than the 1994 level for males, and 15 per cent for females. There were large differentials by area type for treated coronary heart disease and treated depression or anxiety; prevalence in areas described as 'coalfields' and 'ports and industry' was over 40 per cent in excess of that in 'most prosperous' and 'services and education' areas.

Introduction

Data from general practice are an important source of information on morbidity, prescribing and health service utilisation. The General Practice Research Database (GPRD) is a comprehensive source of data on the diagnosis and treatment of illness in general practice, including patient morbidity, prescriptions and referrals. The size, the wide geographical coverage and the longitudinal nature of the database make it invaluable for a wide range of purposes. Socio-economic data on patients are not available in GPRD. However the ONS area classification, which encapsulates socio-economic, demographic and geographic characteristics of areas, enables us to analyse data according to the type of area in which practices are located, thereby providing a means of looking at variations in morbidity and treatment.

This paper considers the prevalence of five treated chronic diseases, examines trends over the three-year period 1994 to 1996, and differentials across types of areas classified using the ONS area classification.

Methods

The General Practice Research Database was originally set up by the VAMP software company (now In Practice Systems Ltd) in 1987. In 1994 ownership passed to Government, initially the Department of Health and from April 1999 the Medicines Control Agency. The office for National Statistics has operated the database on their behalf. Practices were recruited on a volunteer basis by VAMP who aimed for a nationally representative population. There are currently (December 1998) 421 practices across the UK submitting data to the GPRD. Some of these practices are using new practice software (ViSion) and their data are not currently being used for analysis purposes.

Table 1 **Distribution of GPRD practices and patients by ONS area classification***

ONS area classification group	No. of practices**	No. of patients (000s)	1996 population*** (000s)	GPRD coverage (%)
Coast and country	29	185	4,702	3.9
Mixed urban and rural	45	345	7,571	4.6
Growth areas	62	481	11,875	4.1
Most prosperous	8	54	1,664	3.2
Services and education	12	91	3,324	2.7
Resort and retirement	17	139	4,119	3.4
Mixed economies	18	126	3,469	3.6
Manufacturing	32	195	4,176	4.7
Ports and industry	14	87	2,360	3.7
Coalfields	47	325	6,681	4.9
Inner London	4	26	2,069	1.3
ENGLAND AND WALES	*288*	*2,053*	*52,010*	*3.9*

* Based on 1996 health authorities.
** Practices used in the analysis presented here.
*** 1996 mid-year population estimates (ONS).
Note: Slight discrepancies occur due to rounding.

Participating practices follow agreed guidelines[1] for the recording of clinical data and regularly submit anonymised, patient-based clinical records to the database. The records consist of information that is normally required for GPs to perform their clinical and contractual responsibilities. Data from each practice are routinely examined after each data collection (normally every six weeks) to monitor whether the research recording agreement has been followed. Practices failing the quality assessment criteria are informed of the areas in which they have failed so that they may improve their recording procedures and/or correct the records as appropriate. Data from practices whose data persistently fail to reach research criteria are not entered as valid data onto the database. Assessments of the quality of the morbidity data from GPRD have been published elsewhere.[2,3]

A total of 288 practices in England and Wales have been included in the analysis presented here. Practices were included if they were submitting data to the GPRD throughout the period 1994 to 1996 and the data passed the GPRD quality checks. Only those practices recording data using OXMIS diagnostic codes were included.[4] A slightly larger proportion of practices had four or more partners than is the case nationally, and there were correspondingly fewer single-handed GPs. The practices had a total population of 2.1 million patients in 1996, representing 3.9 per cent of the population of England and Wales. There is some regional variation in population coverage from 2.8 per cent in North Thames to 5.3 per cent in West Midlands.[1] A comparison of the 1996 GPRD population by age and sex with the mid-1996 population of England and Wales shows that the age distributions are very similar. The distribution of GPRD practices and population by area classification (Table 1) shows that areas classified as 'coalfields', 'manufacturing' or 'mixed urban and rural' are over-represented while Inner London is very under-represented. There are four practices from Inner London included in the analysis representing only 1.3 per cent of the population of Inner London.

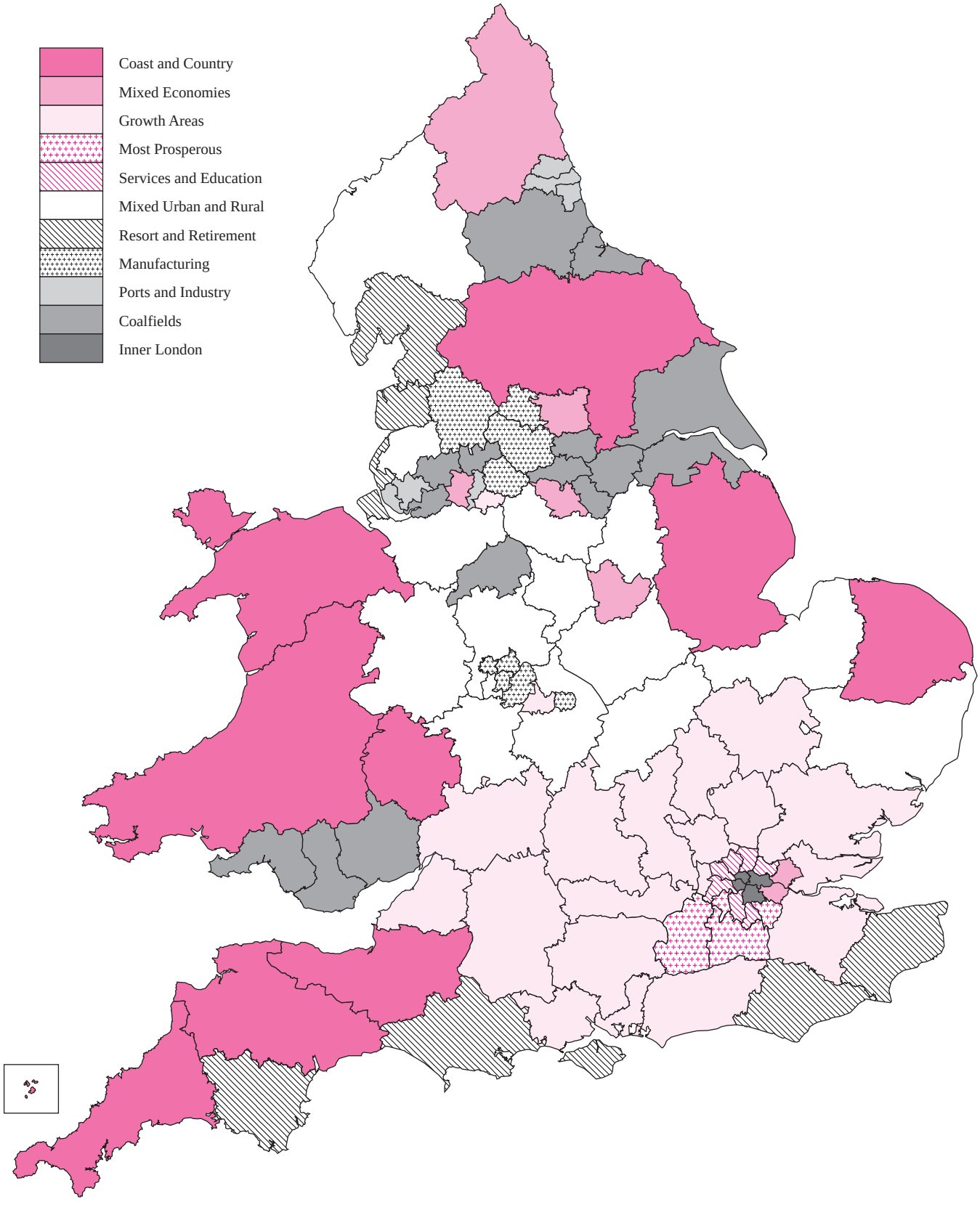
The ONS area classification uses a wide range of socio-economic, geographic and demographic variables from the 1991 Census to group together areas with similar characteristics.[5] Health authorities have been allocated to groups as defined in the classification, e.g. coast and country, growth areas. Figure 1 shows the distribution of health authorities in England and Wales by the ONS area classification. Group names generally reflect the socio-economic, and sometimes demographic and geographic, attributes of their members but are not precise descriptions of all group members. Here practices are classified by the area type of the health authority (April 1996 boundaries) in which they are situated.

In this paper we investigate the prevalence of five treated chronic diseases, coronary heart disease, hypertension, depression or anxiety, and diabetes (insulin and non-insulin treated). Patients are included in the analyses if they were alive and permanently registered at the practice at 31 December of the analysis year, and had been registered for at least six months before that date. As a result only survivors are included and the requirement to be registered for at least six months means that infants and the more mobile population groups will be

Table 2 **Prevalence of treated disease per 1,000 patients by age and sex: 1996**

	Age group									
	16–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	Age-standardised rate (all ages)	No. of cases (all ages)
Coronary heart disease										
M	0.0	0.3	4.7	27.1	90.7	170.4	213.8	196.0	34.7	34,545
F	0.0	0.2	1.5	12.2	46.5	106.9	160.5	170.7	20.8	28,714
Hypertension										
M	0.5	3.7	17.2	59.9	137.5	205.1	200.1	118.4	48.1	46,465
F	1.0	4.7	16.5	61.2	143.9	224.7	255.5	165.4	52.5	61,702
Depression or anxiety										
M	17.4	34.8	47.1	57.7	62.8	60.9	77.1	86.6	36.2	34,031
F	45.3	85.2	109.9	127.6	132.2	140.9	160.5	160.1	81.9	83,196
Insulin treated diabetes										
M	3.4	4.5	6.0	6.3	9.0	10.5	9.7	6.3	5.1	4,777
F	3.1	3.9	4.9	5.0	7.5	9.2	8.5	4.7	4.3	4,339
Non-insulin treated diabetes										
M	0.1	0.5	2.8	9.8	28.0	41.8	44.1	40.8	9.6	9,302
F	0.1	0.5	2.2	6.7	20.5	30.5	34.3	28.8	7.0	8,370
No. of patients										
M	94,974	140,244	132,004	127,516	90,582	72,181	38,296	8,799	888,855	
F	89,219	138,871	127,919	123,567	90,195	83,652	60,800	23,997	914,515	

Figure 1 **Map of health authorities in England and Wales by ONS area classification**



Source: *Key Health Statistics from General Practice 1996* (ONS, 1998).

Table 3

Prevalence of treated disease by sex: 1994–96
Age-standardised rates (all ages) per 1,000 patients (95 per cent confidence interval)

		1994		1995		1996	
		Rate/1,000	CI	Rate/1,000	CI	Rate/1,000	CI
Coronary heart disease	M	33.4	(33.0, 33.7)	34.0	(33.7, 34.4)	34.7	(34.3, 35.0)
	F	20.2	(20.0, 20.5)	20.6	(20.4, 20.9)	20.8	(20.6, 21.1)
Hypertension	M	43.9	(43.4, 44.3)	46.0	(45.5, 46.4)	48.1	(47.7, 48.5)
	F	48.0	(47.6, 48.5)	50.5	(50.0, 50.9)	52.5	(52.1, 52.9)
Depression or anxiety	M	30.5	(30.1, 30.9)	33.1	(32.8, 33.5)	36.2	(35.8, 36.6)
	F	71.2	(70.6, 71.7)	76.9	(76.3, 77.4)	81.9	(81.4, 82.5)
Insulin treated diabetes	M	4.7	(4.6, 4.9)	4.9	(4.8, 5.1)	5.1	(5.0, 5.3)
	F	4.0	(3.8, 4.1)	4.2	(4.0, 4.3)	4.3	(4.2, 4.5)
Non-insulin treated diabetes	M	8.6	(8.4, 8.8)	9.1	(8.9, 9.3)	9.6	(9.4, 9.8)
	F	6.5	(6.3, 6.6)	6.8	(6.6, 7.0)	7.0	(6.9, 7.2)

under-represented. With the exception of diabetes, cases were defined as patients who had a diagnosis ever-recorded *and* were treated with relevant medication in the last 12 months. Due to some erroneous diabetic diagnoses recorded on the database it was decided to identify diabetic cases using treatment alone; the fact that insulin and oral anti-diabetic drugs are only used for the treatment of diabetes made this possible, but it does mean that diet-controlled diabetics are not included. Whilst in general the methods adopted here are likely to underestimate true annual disease prevalence they do have the advantage of indicating that the diagnosis is sufficiently clear to warrant treatment by the GP and that the condition is currently active. The measure derived from these case definitions is referred to as the prevalence of treated disease.

Age-and sex-specific rates and directly age-standardised rates (using the European standard population) are presented for 1996 for all disease groups. As the diseases studied here occur predominantly amongst adults, age-specific rates are shown only for ages 16 and over; however age-standardised rates are calculated using the whole age range including children. Age-standardised rates are used to illustrate trends 1994–1996, and variations by the area classification. Further details on the exact methodology used are given elsewhere.[1]

Results

Table 2 shows the prevalence of treated disease in 1996 by age and sex. Some points of particular interest are mentioned here. There is a very high prevalence of treated depression or anxiety among women (82 per 1,000 females), more than twice the rate of men (36 per 1,000 males); 11 per cent of women aged 35–44 were treated for depression or anxiety rising to 16 per cent at ages 75 and over. The data for treated coronary heart disease show the well-established increase in prevalence with age and a large sex differential with males experiencing 66 per cent higher prevalence than females. The sex differential was especially high in the younger to middle ages, with men having a prevalence rate over twice that of women. One-fifth of men and one-sixth of women

Table 4

Prevalance of treated disease by sex and ONS area classification: 1996
Age-standardised rates (all ages) per 1,000 patients

	Coronary heart disease		Hypertension		Depression or anxiety		Insulin treated diabetes		Non-insulin treated diabetes	
	M	F	M	F	M	F	M	F	M	F
Coast and country	35.2	19.4	48.1	52.8	39.8	85.7	5.5	4.6	8.6	6.2
Mixed urban and rural	33.1	20.1	48.6	53.0	34.2	80.9	5.0	4.5	9.6	6.9
Growth areas	30.6	16.8	46.6	50.1	33.4	77.7	5.0	4.1	9.2	6.6
Most prosperous	25.8	15.7	47.5	56.0	27.0	63.2	4.5	4.0	8.9	6.6
Services and education	29.8	17.9	44.3	47.8	26.6	64.5	4.7	4.3	11.9	8.6
Resort and retirement	33.6	18.8	48.6	52.7	38.7	81.0	5.4	3.8	8.5	6.3
Mixed economies	36.7	23.6	48.2	54.5	36.6	83.2	4.9	4.6	9.2	6.5
Manufacturing	35.3	23.0	48.8	56.1	37.7	83.9	5.3	5.0	11.1	9.4
Ports and industry	43.0	28.5	50.3	53.8	41.8	95.4	5.3	5.0	9.2	6.9
Coalfields	42.0	26.7	50.3	53.4	41.2	91.6	5.3	4.2	9.9	7.4
Inner London	24.8	14.7	37.8	49.0	35.4	73.7	4.9	3.6	11.3	8.4
ENGLAND AND WALES	*34.7*	*20.8*	*48.1*	*52.5*	*36.2*	*81.9*	*5.1*	*4.3*	*9.6*	*7.0*

aged 75 and above were being treated for coronary heart disease. Twenty per cent of men and 23 per cent of women aged 65 and over were on treatment for hypertension. For all diseases considered here (with the exception of coronary heart disease for women and depression or anxiety for both sexes) the prevalence of treatment amongst the very elderly (85 and over) is lower than that for the 75–84 age group.

The prevalence of all the treated diseases included in this analysis increased over the three year period 1994 to 1996, as measured by the age-standardised rate for the whole age range (Table 3). The increase in treated depression or anxiety was especially large with a prevalence in 1996 19 per cent higher than the 1994 level for males, and 15 per cent higher for females. These increases were particularly large in younger adults, 38 per cent for men and 31 per cent for women aged 16–24, 33 per cent and 27 per cent respectively for ages 25–34, and 22 per cent and 20 per cent for ages 35–44. There were increases over the same period of the order of 10 per cent for hypertension, and both types of diabetes. Rates of treated hypertension increased greatly amongst the elderly where 1996 rates were 20 per cent higher than 1994 levels for men aged 75–84 and 17 per cent for women aged 75–84, and 35 per cent and 29 per cent respectively amongst those 85 and over. The overall increase in treated coronary heart disease was about 3 per cent; among men the increase was most notable at ages 65–74 (4 per cent) and 75–84 (8 per cent), and among women at ages 75–84 (4 per cent) and 85 and over (7 per cent).

The variations in treated disease prevalence by the ONS area classification are shown in Table 4. For coronary heart disease and depression or anxiety there are particularly large variations by area type. The prevalence of treated coronary heart disease in areas classified as 'most prosperous', 'growth areas' and 'services and education' was low with rates at least 10 per cent below those in England and Wales as a whole (Figure 2). Areas 'ports and industry' and 'coalfields' had an excess prevalence for females of around 30 per cent higher than England and Wales, and just over 20 per cent for males; the high prevalence in these areas is particularly concentrated in the 35 to 64 age range.

Low rates of treated depression or anxiety were found in 'most prosperous' and 'services and education' areas where rates were more than 20 per cent below those in England and Wales (Figure 3). In contrast 'coalfields' and 'ports and industry' had rates in the region of 15 per cent higher than England and Wales. In the case of 'coalfields' prevalence was raised throughout the age range, while in 'ports and industry' areas excess prevalence was more evident in the younger and middle ages.

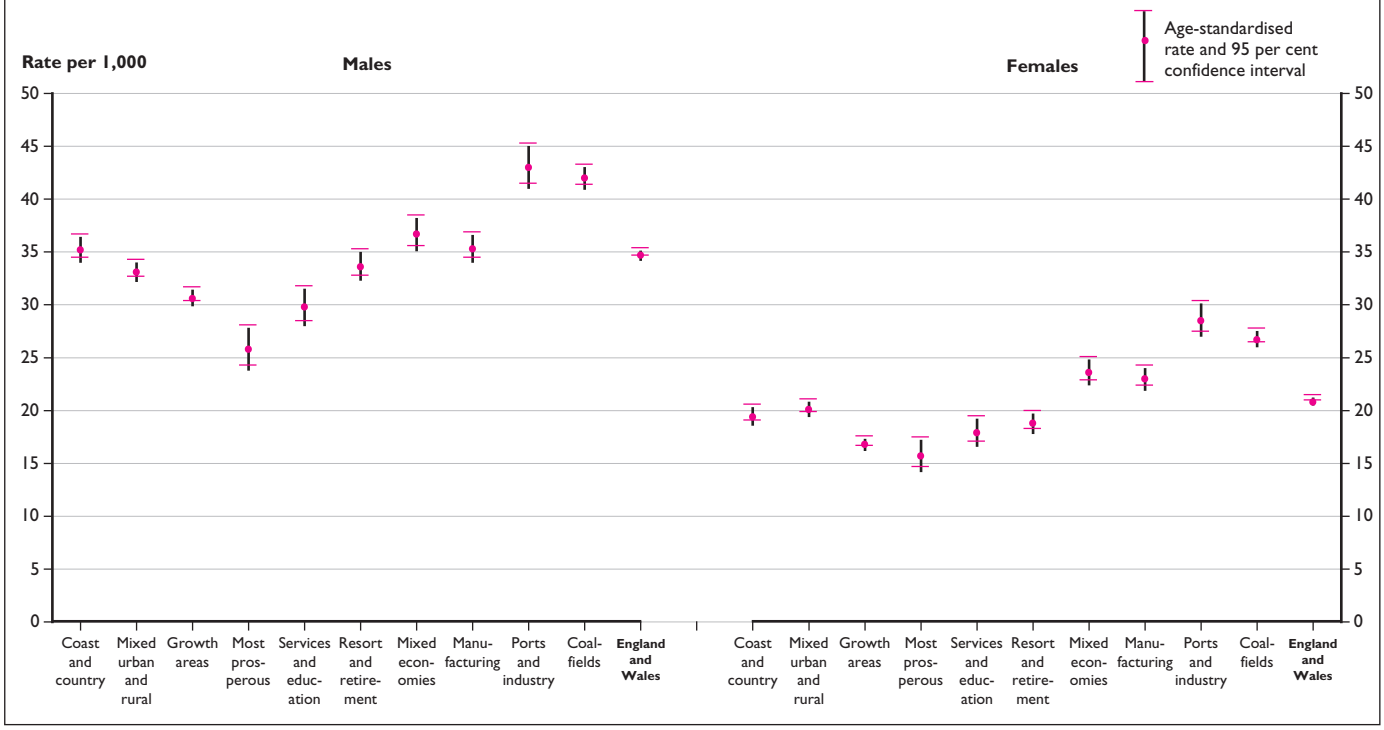
Discussion

The General Practice Research Database provides invaluable information on the prevalence of treated chronic diseases as recorded in general practice. This paper describes an initial exploratory analysis of some of these data, their strengths and weaknesses and the methodology used, and identifies areas for further investigation and study. Where possible we have tried to compare our findings with those from other studies hence providing additional information on the validity of GPRD data and plausibility of the results.

Some strengths and weaknesses of the data

GPRD data are obtained from those recorded by GPs in the course of their daily work. The recording guidelines ask for all prescriptions, and all significant morbidity consultations, to be entered in a patient's computer record. No guidelines are given to doctors concerning diagnostic definitions and they use their own judgement in the recording of clinical information. GPRD prescribing information refers to prescriptions issued to patients; there is no information on whether the drugs have been dispensed or not. Neither is there information on medicines purchased over the counter. The only case here where this may be relevant is the use of aspirin in the treatment of coronary heart disease. Those entitled to free prescriptions are likely to receive a prescription for aspirin while others would buy it over the counter. This may have a bearing on some of the area type differentials, but would affect only those coronary heart disease patients who were only being prescribed aspirin for their condition.

Figure 2 **Prevalence of treated coronary heart disease per 1,000 patients by age, sex and ONS area classification: 1996**



The case definitions used in this analysis indicate that the diagnosis is sufficiently clear to warrant treatment by the GP and that the condition is currently active. The derived measures refer to the prevalence of treated disease (that is, those being treated for a specified condition) and as such are likely to under-estimate the true prevalence of the disease. For example, diet-controlled diabetics are not included in our analysis, nor are those with a diagnosis of depression or anxiety who are not receiving medication for their condition. In addition the analysis excludes patients who die during the analysis year and consequently the treated prevalence of some diseases (for example, coronary heart disease) is likely to be under-estimated.

General findings

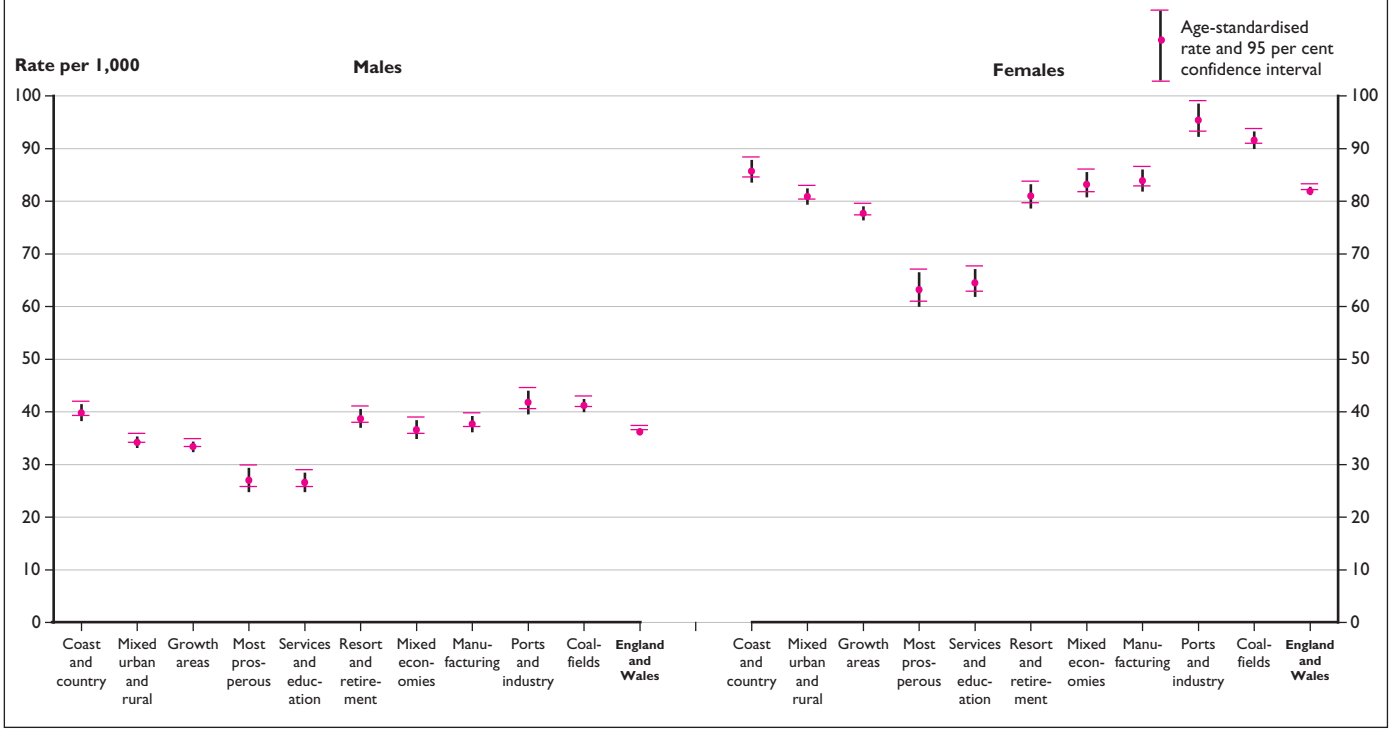
The analysis presented here suggests that, in terms of the chronic diseases examined, the prevalence of treated disease has increased over the period 1994 to 1996. This increase has been most evident for depression or anxiety, hypertension and diabetes. We will discuss some general points relating to this trend, and will then go into more detail in relation to each of the diseases studied. Although this is a short period over which to examine time trends this was all that was available at the time.

The observed trend could reflect a real increase in treated disease over the period 1994 to 1996, which in turn could result from increasing prevalence of disease, or from changes in clinical practice, such as the loosening of diagnostic criteria or an increasing propensity to prescribe medication for a disease. Improvements in GP recording of diagnoses and prescriptions could play a part in the apparent trend but if this were the sole explanation we would expect the increases to be similar across all ages, which they are not. With automated registration links between practices and the local health authority register, practice lists have been becoming more accurate over recent years as list inflation is reduced. This may result in the denominators in our analysis containing fewer 'ghost' patients in 1996 than in 1994 which could give rise to an apparent increase in prevalence of treated disease over time. Analysis of GPRD data on peptic ulcers[1] shows a slight *decrease* in treated prevalence over the three-year period. If the time trends we observe for the five diseases covered in this paper were solely explained by improvements in recording, and/or increasing accuracy of practice lists, we would expect the peptic ulcer data to be similarly affected. As well as the explanations outlined above, more consideration is needed to clarify ways in which the methodology used may in itself have a bearing on the time trends.

Various factors could be contributing to the lower prevalence of treated disease in those aged 85 and over as compared to those aged 75–84. There is likely to be some out-selection of the least healthy from our general practice based data as long-term hospital patients will not feature; in addition recording of diagnoses and prescriptions arising from home visits and visits to residential homes may be under-reported. There is no evidence of substantial list inflation among this age group as the population age-sex distributions match those of England and Wales very closely. It seems likely that a substantial amount of the observed age pattern reflects lower treatment rates among the very elderly, especially in the case of diseases such as hypertension which are known to increase with age.

There is no patient information on socio-economic characteristics in the GPRD. The ONS area classification groups together areas with similar socio-economic, geographic and demographic characteristics and therefore provides us with a way of investigating variations in treated disease based on the type of area in which practices are located. This analysis shows large differentials in the prevalence of treated depression or anxiety and coronary heart disease across different types of area. For both these diseases, and both males and females, prevalence in area types 'coalfields' and 'ports and industry' was at least 40 per cent higher than in 'most prosperous' and 'services and education' areas. Using the ONS area classification in this way can be valuable[6] but it is a relatively crude approach, especially when, as here, area type is assigned to practices using area type of the health authority in which each practice is situated. This can be misleading because

Figure 3 **Prevalence of treated depression or anxiety per 1,000 patients by age, sex and ONS area classification: 1996**



health authorities are large and often very heterogeneous areas, and the GPRD practices within any one authority may be few in number and unrepresentative of the whole. Further work is planned using some alternative approaches to address these issues. The above analysis can be repeated using area type of the *ward* location of practices rather than health authority; this would be a more sensitive indicator of the area served by the practice, even though patients are often scattered very widely across many wards. Secondly, deprivation measures can be attributed to practices on the basis of the electoral ward in which they are located.[7,8] Patient postcodes are not available in GPRD hence these approaches are limited to practice location.

Disease-specific findings and comparison with other studies

Diabetes: In 1996, after age adjustment, 1.47 per cent of men and 1.13 per cent of women received treatment with either insulin or oral anti-diabetic drugs. The age adjusted male:female ratio in prevalence of 1.30:1 is consistent with that reported in the Poole Diabetes Study (age adjusted ratio 1.23:1) and with an analysis of pooled audit data from 259 general practices in England and Wales (crude ratio 1.15:1).[9,10] The age-adjusted prevalence of diabetes in the Poole Diabetes Study 1996 was 1.65 per cent (1.80 per cent in men and 1.50 per cent in women).[9] In an analysis of pooled audit data from studies carried out between 1993 and 1995, the crude prevalence of diabetes was reported as 1.46 per cent.[10] Unlike our own study, both these studies included diet-controlled diabetics (24 per cent of all diabetic patients in the Poole study, 23 per cent in the pooled audit data). Adjusting our prevalence rates to take diet-controlled diabetics into account is not straightforward as we selected all those on medication during the course of one year. Inevitably, some diet-controlled diabetics would be on medication at some point during the year and hence we would expect our identified diabetic cases to constitute more than 77 per cent (100 per cent minus 23 per cent) of the true diabetic population in our study. Our estimate of the total prevalence of diabetes in the GPRD population therefore varies between 1.47 per cent and 1.91 per cent in men and 1.13 per cent and 1.47 per cent in women, consistent with the findings of the two other studies.

Our finding of an increase in the prevalence of drug-treated diabetes between 1994 and 1996 is also consistent with what is known about the epidemiology of diabetes.[11] For example, among a sub-set of practices (for whom time trend data were available) in the Poole Diabetes Study the age adjusted prevalence of diabetes was found to have increased by 48 per cent between 1989 and 1996, from 1.05 per cent to 1.55 per cent.[12] The omission of diet-controlled diabetics from our study is likely to have the greatest impact in our estimates of diabetes in the elderly; this may explain why we found the prevalence of treated diabetes to be lower in people aged 85 years and over than in those aged 75–84.

Anxiety and depression: The prevalence of adults (aged 16–64) receiving drug treatment for depression or anxiety in 1996 was 44 per 1,000 men and 101 per 1,000 women. There is no directly comparable data against which to compare these rates but the OPCS Surveys of Psychiatric Morbidity in Great Britain provide some data. In the survey of 1993 the prevalence rates for neurotic disorders (a category which includes anxiety and depression) in the week before interview, among people aged 16–64 years living in private households, was 123 per 1,000 in men and 195 per 1,000 in women.[13] About 9 per cent of those with a neurotic disorder were receiving drug treatment when interviewed; although this is considerably lower than our findings, it relates to treatment at time of interview as opposed to during the last 12 months in our study. As in our own study, the likelihood of drug treatment increased with age, particularly for depression.[14]

The increase in the percentage of people treated for depression and anxiety between 1994 and 1996 probably reflects an increase in the use of antidepressant drugs by general practitioners rather than a true increase in the prevalence of these disorders. The *Defeat Depression* initiative was introduced by the Royal College of General Practitioners to raise awareness of depression amongst both the public and health professionals.[15] Other recent initiatives have aimed to remove the stigma associated with depression. These initiatives, combined with the development of new antidepressant drugs which are better tolerated by patients, and publicity in the popular media, are likely to have led to an increase in the number of people receiving drug treatment for depression.[16]

We are clouding the issue by combining depression and anxiety in our analysis as they refer to different groups of conditions. Prescribing data from the GPRD shows that between 1994 and 1996 there has been an increase in the percentage of persons receiving antidepressants, but no increase in the percentage receiving hypnotic or anxiolytic drugs, or drugs used in psychoses.[1]

Hypertension: The percentage of adults (aged 16 and over) with treated hypertension in 1996 was 6.6 per cent of men and 8.4 per cent of women. This compares with data from the Health Survey for England 1996 where between 4.2 per cent and 12.3 per cent of men aged 16 years and over and between 5.3 per cent and 14.5 per cent of women were on antihypertensive treatment.[17] The lower figures refer to people with high blood pressure, while the higher figures also include those without high blood pressure, some of whom may have controlled hypertension. Unlike our own study the Health Survey for England showed little increase in the percentage of adults being treated for hypertension between 1994 and 1996.

Coronary heart disease: The percentage of adults (aged 16 and over) with treated coronary heart disease in 1996 was 4.9 per cent of men and 3.9 per cent of women. This compares with the reported prevalence of coronary heart disease of 6.0 per cent of men and 4.1 per cent of women in the 1994 Health Survey for England.[18] About 20 per cent of patients with coronary heart disease in the Health Survey for England were not receiving drug treatment; this makes the prevalence of treated coronary heart disease from the two studies broadly comparable.

Conclusions

General practice can provide useful information on the prevalence of treated chronic disorders but the limitations of the data need to be remembered when interpreting the results of studies such as this. The General Practice Research Database contains data collected routinely for a different purpose, that is the clinical management of patients registered in general practice. It is an extremely valuable data source but there are inevitably difficulties and constraints that arise from using, for research purposes, data arising from an administrative process – as opposed to that obtained from a survey designed specifically for the purpose. Nevertheless the GPRD is at its most valuable in monitoring the health of the nation in its interaction with primary care. It should help the understanding of the demand for care by different sections of the community and the implications for other parts of the NHS.

This study has highlighted some ways in which this type of analysis could be developed in future work; for example, in using deprivation scores and the ONS area classification applied to the ward location of practices, and in analysing anxiety and depression as separate conditions. Further work is also needed on developing and refining the methodology used. Work is planned on further validation of the information recorded in the GPRD, comparing the data with external

sources of information where possible. The new information strategy for the NHS has emphasised the importance to the NHS of data derived from general practice.[19] However much remains to be done to ensure that the data entered on general practice computers by members of the primary healthcare team are accurate, comprehensive and recorded consistently.

Key points

- The General Practice Research Database is a comprehensive and large source of longitudinal data on the diagnosis and treatment of illness by GPs.
- Data from 288 practices and over 2 million patients are analysed in this paper.
- The recorded prevalence of five common treated chronic diseases increased between 1994 and 1996.
- The prevalence of people being treated for depression or anxiety in 1996 was 19 per cent higher than the 1994 level for males, and 15 per cent for females; there was a 10 per cent increase over the same period in the prevalence of treated hypertension and diabetes.
- Over 20 per cent of those aged 65 and over were being treated for hypertension in 1996.
- For treated coronary heart disease, and treated depression or anxiety, prevalence in 'coalfields' and 'ports and industry' areas was 40 per cent higher than in 'most prosperous' and 'services and education' areas.

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Examining adult mortality rates using the National Statistics Socio-economic Classification

Justine Fitzpatrick and Gillian Dollamore, *ONS*

In June 1998 the Government Statistical Service Social Statistics Committee agreed to adopt a new National Statistics Socio-economic Classification (NS-SEC) for use with government statistics. In this article we describe the results of using the interim version of the new NS-SEC to measure mortality differentials in England and Wales among men aged 20–64 in the early 1990s, and compare these findings with previous analyses using Social Class. The new classification shows that, as with Social Class, there are substantial differences in mortality across the social scale, although there is not such a clear social gradient. We highlight this and other features of the new classification and point to some aspects of its use which require further investigation.

The National Statistics Socio-economic Classification

In 1994 the Office for National Statistics (the ONS – then the Office of Population Censuses and Surveys) commissioned the Economic and Social Research Council (ESRC) to carry out a review of the two social classifications widely used in official statistics – Social Class based on Occupation (SC, formerly Registrar General's Social Class) and Socio-economic Group (SEG). This review was completed in June 1998 and the Government Statistical Service Social Statistics Committee accepted the main recommendation, that both SC and SEG should be replaced by a new single-purpose classification scheme, to be called the National Statistics Socio-economic Classification (NS-SEC).

The development of the NS-SEC was described in *Population Trends*[1] and further details were presented in two reports published as part of the ESRC review.[2,3] Like both SC and SEG, the NS-SEC is based on occupation, although it differs fundamentally from these previous classifications in that classes within the scheme are based not on skill levels or concepts of manual/non-manual work, but on employment relations and conditions, such as job security, forms of wage payment and career prospects.

The NS-SEC is constructed using three pieces of information: occupation, employment status and the size of the establishment in which the person works. However, there are other 'approximate' versions of the NS-SEC which can be used if one or more of these pieces of information is not available. One version, referred to as SECLOW, uses just occupation and employment status; another is derived from occupation alone.

The NS-SEC is designed to work at various different levels according to the amount of detail required. The full version of NS-SEC has 17 categories. However, the version recommended for most analytic purposes, and which approximates most closely to Social Class is the nine-class version (see Box One).

Box one

Nine-class version of the NS-SEC

1 Higher managerial and professional occupations
  1.1 Employers and managers in large organisations
  1.2 Higher professionals
2 Lower managerial and professional occupations
3 Intermediate occupations
4 Small employers and own account workers
5 Lower supervisory, craft and related occupations
6 Semi-routine occupations
7 Routine occupations
8 Never worked and long-term unemployed
9 Unclassified

It is intended that the NS-SEC will replace SC and SEG from 2001, but it is available now in an interim version to enable users of social classifications to carry out early analysis of their data. In this article we have presented the results of using this interim version of the NS-SEC with mortality data, and draw some comparisons with previous social class-based analyses.

Introduction

There is a long history to the measurement and monitoring of socio-economic differentials in mortality. The ONS, and predecessors, have traditionally used occupationally based classifications – principally Social Class – to measure and report health differences between sub-groups within the population. Social Class has been used to examine social differences in health since it was first established in 1911. The recommendation to replace SC (and SEG) with the NS-SEC is therefore of crucial importance to how we continue to measure and monitor social inequalities in health.

Use of SC has consistently demonstrated a gradient in health, in particular in mortality rates, across the social scale. Those in partly skilled and unskilled occupations tend to have higher mortality rates and lower life expectancy than those in professional and managerial occupations. Infant mortality rates are higher for babies born to fathers in unskilled and partly skilled jobs compared with those whose fathers were in professional occupations. The average birthweight for babies born to fathers in unskilled occupations is lower than those born to fathers in professional occupations.

Socio-economic inequalities in health persist in the 1990s,[4] and continue to be of concern. The recent Green Paper, *Our Healthier Nation*, acknowledges that health inequalities are widening and that 'the poorest in our society are hit harder than the well off by most of the major causes of death'.[5] It also gives a firm commitment not only to improve the health of the population as a whole, but specifically 'to improve the health of the worst off in society and to narrow the health gap'. Health inequalities have been highlighted more recently in the findings of the *Independent Inquiry into Inequalities in Health*, led by the former Chief Medical Officer, Sir Donald Acheson.[6]

Background to the study

In this article we describe work carried out in the latter stages of the ESRC review of government social classifications to validate the new NS-SEC using, primarily, death registration data and the 1991 Census. The starting point for our work was an analysis of male mortality by Social Class in the early 1990s, presented in *Health Inequalities*.[4] Our objectives were, firstly, to classify the data used in this earlier analysis by NS-SEC and, secondly, to recreate that analysis using NS-SEC instead of Social Class, and compare the two sets of results.

Methods

The main analysis that we set out to recreate using the NS-SEC covered:

- all-cause and cause-specific standardised mortality ratios in men aged 20–64, 1991–93; and
- age-specific and age-cause-specific mortality rates.

We therefore needed data from two sources: death registration data (to provide the numerator for the calculation of rates) and the 1991 Census (to provide the denominator population). The ten-yearly Censuses provide the only national breakdown of the whole population by occupation, and therefore Social Class, for use as denominator populations. This meant that we had to focus our analysis around 1991. Like the earlier analysis, we combined three years of death registration data to ensure that we had sufficient numbers of deaths by age group and by cause to allow rigorous analysis.

Coding NS-SEC on death registration data

The last gainful occupation of the deceased is recorded at the registration of death for all men over the age of 16 and under the age of 75. The occupation stated for the deceased is coded using the prevailing occupational classification system, currently the 1990 Standard Occupational Classification (SOC90). For those who have an occupation, their employment status is also recorded (see Box Two). However, the person registering the death supplies this information on a voluntary basis. Information on the size of organisation in which the individual worked is *not* collected at death registration. This third piece of information is needed to code the NS-SEC. In its absence we have therefore had to use the SECLOW version of NS-SEC (described above) to classify death registration data.

Box two

Employment Status categories for death registration data

1 Employee
2 Manager
3 Foreman/Supervisor
4 Self-employed – with employees
5 Self-employed – without employees

In classifying death registration data by NS-SEC, we concentrated on assigning the nine-class version of NS-SEC as that is the version that approximates most closely to Social Class. However, it is not possible to identify NS-SEC 8 – never worked and long-term unemployed – from death registration data. Registrars ask the person registering the death for the last gainful occupation of the deceased. The status

Table 1 **NS-SEC by Social Class, male deaths aged 20–64, England and Wales, 1991–93**

	Social Class									
NS-SEC	I	II	IIINM	IIIM	IV	V	Armed Forces	Not Stated and Inadequately Described	Total	Percentage
1A	56	13,276					298		13,630	8
1B	7,006	3,913							10,919	6
2		10,061	4,635	418	200		815		16,129	9
3		192	7,077	2,404					9,673	6
4		5,416	1,696	8,036	1,491	510			17,149	10
5			396	24,169	1,255				25,820	15
6			1,416	25,416	25,630				52,462	30
7					1,542	16,191			17,733	10
9								12,300	12,300	7
Total	7,062	32,858	15,220	60,443	30,118	16,701	1,113	12,300	175,815	100
Percentage	4	19	9	34	17	9	1	7	100	

Note: 32 deaths can not be classified.

'unemployed' will therefore never be recorded on a death certificate. If the deceased has *never* worked, the occupation entry will be left blank. It is therefore not possible to distinguish between those cases where the occupation is not stated and those that have never worked; they will both be coded to the unclassified group (NS-SEC 9).

We allocated NS-SEC to all deaths between 1991–93 for men aged 20–64. There were 175,815 deaths to men over this time period, of which 93 per cent were classified to NS-SEC 1 to 7 and the remaining 12,300 (7 per cent) to NS-SEC 9. In addition to this, another 32 deaths (0.02 per cent) could not be classified as they had combinations of occupation and employment status that are not allowed under the interim NS-SEC classification matrix. For example, the Civil Service Executive Officer (EO) grade is a management grade. The NS-SEC matrix therefore assumes that the employment status of EOs is either 'manager' or 'supervisor'. EOs with any other recorded employment status, such as employee, could not be classified using NS-SEC. This issue will be addressed in the final version of NS-SEC, so that a 'default' NS-SEC category is provided for all 'disallowed' combinations of occupation and employment status.

Comparing the distribution of deaths by NS-SEC and Social Class

Table 1 shows the distribution of deaths by Social Class and NS-SEC for men aged 20–64 in 1991–93. These tables also show the percentage of deaths falling into each Social Class and each category of NS-SEC.

Box three

Social Class Based on Occupation

I Professional
II Managerial and technical/Intermediate
IIINM Skilled non-manual
IIIM Skilled manual
IV Partly skilled
V Unskilled
Armed Forces
Inadequately Described
Not Stated

It is apparent that there is not a one-to-one relationship between Social Class and NS-SEC. Deaths to those in categories at the two ends of the Social Class scale, Social Classes I and V, are fairly concentrated in particular categories of NS-SEC. Deaths to those in Social Class I fall mainly into NS-SEC 1B, and those in Social Class V mainly into NS-SEC 7. Deaths to people within other Social Classes are spread across many different NS-SEC categories. This also applies to deaths among those in the Armed Forces. These had previously been assigned to a separate Armed Forces class, but they are now allocated to two different NS-SEC groups on the basis of rank. Officers are assigned to NS-SEC 1A while Non Commissioned Officers and other ranks are assigned to NS-SEC 2. A particular point to note is that deaths to those in the managers group (Social Class II) have been separated largely into higher and lower managers (NS-SEC 1A and NS-SEC 2 respectively).

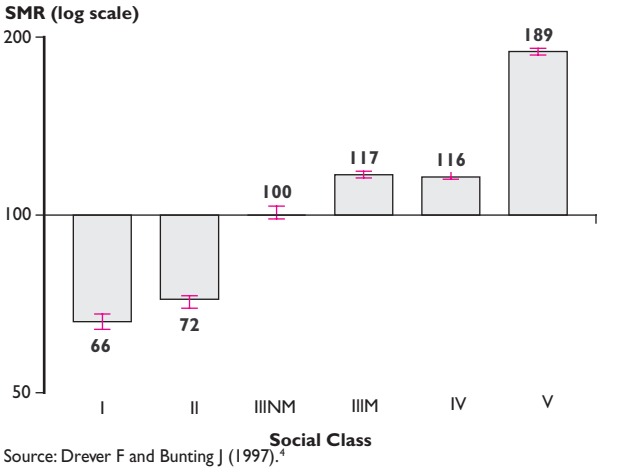
The same deaths are in the Not Stated and Inadequately Described categories of both classifications. The NS-SEC therefore does not enable us to classify any more people than would have previously been classified using Social Class.

One third of all deaths in men are to those in Social Class IIIM, and just under one fifth to those in Social Classes II and IV. NS-SEC category 6 (semi-routine occupations) contained the largest percentage of all deaths, but this group was made up of deaths previously assigned to Social Classes IIINM, IIIM and IV.

Coding NS-SEC on 1991 Census data

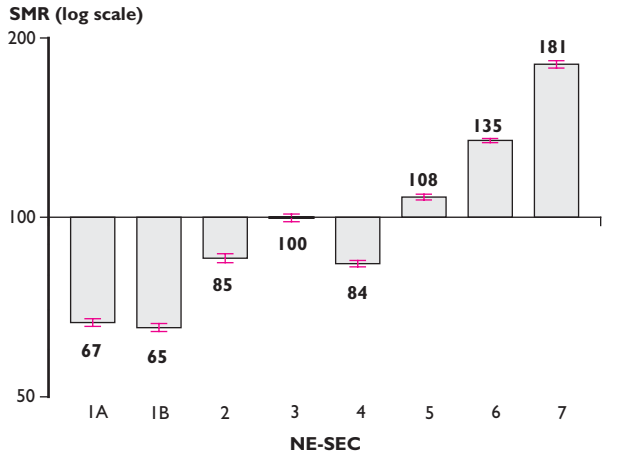
As stated earlier, the 1991 Census was used as the denominator for calculating mortality rates. The 1991 Census in England and Wales collected information on the occupation and employment status of all residents over the age of 16. In addition, respondents were asked about the size of the organisation they worked in. Therefore, the population of England and Wales could be classified using the full version of NS-SEC. However, as the use of the SECLOW version will alter the size of the NS-SEC categories, the census data used here are also classified using SECLOW, to avoid a mismatch between the numerator and the denominator when calculating mortality rates. The relationship between Social Class and NS-SEC using census data is very similar to that seen using mortality data.

Figure 1 SMRs by Social Class, men aged 20–64, England and Wales, 1991–93



Source: Drever F and Bunting J (1997).[4]

Figure 2 SMRs by NS-SEC, men aged 20–64, England and Wales, 1991–93



Comparison of overall mortality rates for men by Social Class and by NS-SEC

Figure 1 shows standardised mortality ratios (SMRs) for men aged 20–64 in England and Wales by Social Class, 1991–93. The SMRs are presented on log scales with the axis crossing at 100. Those in Social Class IIINM had a mortality rate very similar to England and Wales as a whole. Social Classes I and II had lower mortality than England and Wales, and all other Social Classes had higher mortality. There is a general gradient across the social scale, with the lowest mortality in Social Class I (the professional classes) and the highest in Social Class V (unskilled). The ratio of the mortality rate in Social Class V, to Social Class I is 2.9, indicating that men aged 20–64 in Social Class V have nearly three times the mortality rate of those aged 20–64 in Social Class I. The SMR for those in the Armed Forces is not shown here as the Armed Forces tend to have unusually high mortality.

Figure 2 shows SMRs for men aged 20–64 in England and Wales between 1991–93 by NS-SEC. It shows that the highest SMRs are found in NS-SEC 6 and NS-SEC 7. The two categories NS-SEC 1A and NS-SEC 1B have the lowest SMRs. Although the NS-SEC was not designed to be an ordinal scale, we can see a general trend of an increase in SMRs with higher NS-SEC groups. This is not surprising given what we know about mortality by Social Class and which Social Classes make up which NS-SEC groups (illustrated in Table 1). The ratio of the highest to the lowest SMR based on NS-SEC groupings is 2.8, very similar to that obtained for Social Class. However, although these ratios are very similar, the proportion of deaths in the classes at the two extremes of the scale has increased slightly. Approximately 4 per cent of all deaths in this sample are assigned to Social Class I, whereas 6 per cent are assigned to NS-SEC 1B. The proportion of deaths in Social Class V is 9 per cent compared to 10 per cent in NS-SEC 7.

NS-SEC 7 largely consists of deaths that were previously classified to Social Class V, the group with the highest mortality, and a small proportion from Social Class IV, the group with the next highest mortality. Half of the cases in NS-SEC 6 come from Social Class IIIM and half from Social Class IV. Therefore, we would expect these two groups (NS-SEC 6 and NS-SEC 7) to have the highest mortality rates. An interesting point about NS-SEC 6 is that it contains those with the highest mortality from Social Class IIINM and IV, as the mortality rate for NS-SEC 6 is higher than both IIINM and IV.

NS-SEC 1B largely consists of deaths previously classified to Social Class I, the group with the lowest mortality. Figure 2 also shows the low mortality of NS-SEC 1A. This group is largely made up of deaths previously classified to Social Class II, but has lower mortality than Social Class II as a whole (an SMR of 67 compared with 72). Therefore, we can infer that NS-SEC 1A is identifying a group of people that have lower mortality than the rest of those who would previously have been allocated to Social Class II. This group, employers and managers in large establishments, indicates that managers in large establishments are a different group in terms of mortality compared with managers as a whole.

NS-SEC 4 (small employers and own account workers) is also an interesting group. This group contains people from many different Social Classes, who are also found to have low mortality rates, lower than NS-SEC 2.

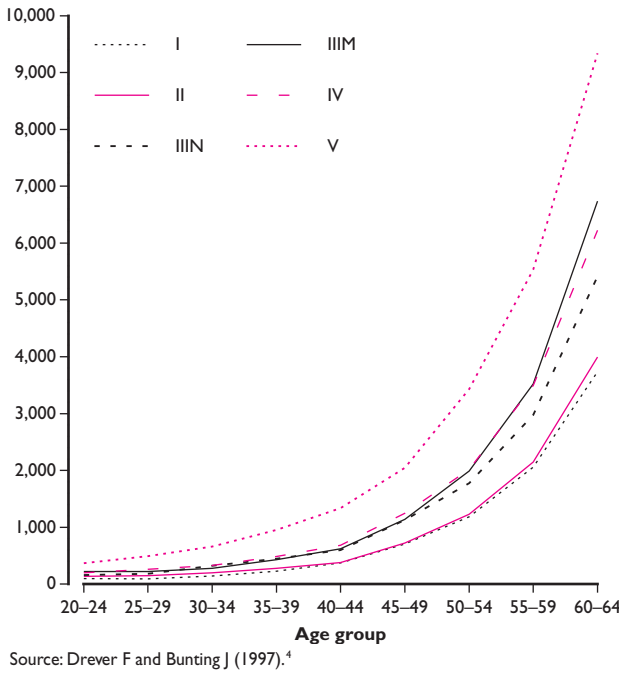
To aid understanding of the reasons behind the pattern of mortality by NS-SEC, we calculated SMRs for all possible combinations of Social Class and NS-SEC. The results are presented in Table 2. Generally, within each Social Class there is increasing mortality as we move down the NS-SEC scale. For example, people in NS-SEC 6 from Social Class IIIM have higher mortality than those in NS-SEC 5 from Social Class IIIM. However, this relationship does not hold the other way round. It does not follow that within each NS-SEC category there is increasing

Table 2 SMRs for different combinations of Social Class and NS-SEC, men aged 20–64, England and Wales, 1991–93

	Social Class							
NS-SEC	I	II	IIINM	IIIM	IV	V	Armed Forces	Total
1A	*65*	66					97	67
1B	66	64						65
2		77	97	*234*	97		143	85
3		79	97	112				100
4		87	100	81	79	68		84
5			*137*	110	74			108
6			130	145	126			135
7					88	201		181
Total	**66**	**72**	**100**	**117**	**116**	**189**		

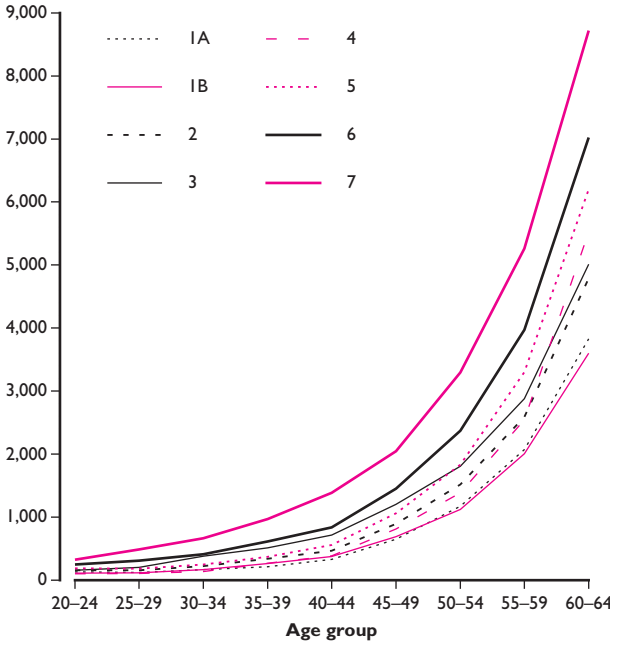
Notes:
1. Numbers in green indicate the social class group that makes up the majority of the NS-SEC group.
2. Numbers in italics are based on a small number of events.

Figure 3 Age-specific mortality rates by Social Class, men aged 20–64, England and Wales, 1991–93



Source: Drever F and Bunting J (1997).[4]

Figure 4 Age-specific mortality rates by NS-SEC, men aged 20–64, England and Wales, 1991–93



mortality as we move down the Social Class scale. The NS-SEC appears to be picking people out with similar mortality levels from each Social Class. This suggests that there could be more uniformity of mortality within NS-SEC groups than there is within Social Class groupings.

Table 2 confirms some of the points made above about the pattern of mortality by NS-SEC. Those in NS-SEC 6 do have higher mortality than the average for their previous Social Class. Those from Social Class II allocated to NS-SEC 1A do have lower mortality than those allocated to other NS-SEC categories, apart from those allocated to NS-SEC 1B. The table also shows the low mortality of all those allocated to NS-SEC 4. This group identifies people previously from many different Social Classes that have low mortality. The two Social Classes that contribute the greatest number of people to this group are Social Classes IIIM and II. Those from Social Class IIIM that are moved to NS-SEC 4 have by far the lowest mortality (SMR 81) than those from Social Class IIINM that have moved elsewhere (SMR 110 and 145).

Table 2 also shows the mortality rates of people in the Armed Forces. As noted earlier, those in the Armed Forces are assigned to two different NS-SEC groups, whereas previously there was a separate Social Class group for Armed Forces. The Armed Forces have higher mortality rates than the NS-SEC to which they were allocated.

Mortality patterns by age, Social Class and NS-SEC

Figure 3 shows age-specific mortality rates by Social Class for men aged 20–64 in England and Wales between 1991–93. The rank order of the classes is fairly constant across age bands, with Social Classes I and II the lowest at every age group and Social Class V the highest. The patterns illustrated by overall SMRs, shown in Figure 2 by NS-SEC, hold when individual age groups are examined in Figure 4. Like Social

Table 3 SMRs by Social Class for *Our Healthier Nation* causes of death, men aged 20–64, England and Wales, 1991–93

Social Class	IHD	Stroke	Cancer	Accidents	Suicide
I	63	70	78	54	55
II	73	67	79	57	63
IIINM	107	96	101	74	87
IIIM	125	118	126	107	96
IV	121	125	116	106	107
V	182	219	165	226	215
England and Wales	100	100	100	100	100
Number	52,219	8,350	55,205	10,275	9,725
Ratio	2.9	3.1	2.1	4.2	3.9

Source : Drever F and Bunting J (1997).[4]

Table 4 SMRs by NS-SEC for *Our Healthier Nation* causes of death, men aged 20–64, England and Wales, 1991–93

NS-SEC	IHD	Stroke	Cancer	Accidents	Suicide
1A	70	59	77	54	47
1B	63	65	75	55	61
2	87	80	93	69	69
3	103	97	96	79	98
4	92	90	98	39	50
5	118	106	118	89	79
6	138	140	133	146	139
7	172	208	157	210	206
England and Wales	100	100	100	100	100
Number	52,219	8,350	55,205	10,275	9,725
Ratio	2.7	3.5	2.1	5.4	4.4

Class, this graph shows very little crossover between the groups, that is, the rank order of NS-SEC categories by age is fairly constant. However, one striking point to note is that displayed in NS-SEC 4 at the older ages. At ages up to 30–34 this NS-SEC group has the lowest mortality. Up to ages 55–59, SMRs in this group are not the lowest, but one of the lowest, but at age group 60–64, the mortality rate increases steeply. Thus, the mortality advantage of the NS-SEC 4 group is not maintained at the older age groups shown here.

Comparison of *Our Healthier Nation* causes of death for men by Social Class and NS-SEC

Tables 3 and 4 show SMRs by Social Class and NS-SEC respectively for men aged 20–64 in the period 1991–93, for those causes of death identified as key target areas in *Our Healthier Nation*.[5] For Social Class there is a clear gradient of increasing mortality moving down the social scale for every cause of death. This is very similar to the all-cause pattern of mortality. For NS-SEC the pattern is not so clear cut. The rank order of NS-SEC categories for some causes of death is not the same as that shown for all causes combined. Generally either NS-SEC 1A or NS-SEC 1B has the lowest mortality, except in the case of accidents where NS-SEC 4 has the lowest mortality. For most causes of death the unusually low mortality among the NS-SEC group 4 is maintained, except for cancers where the advantage is much reduced.

The ratio of the highest to lowest SMR is very similar to that seen using Social Class for most causes of death, except for accidents. For accident mortality NS-SEC 4 has by far the lowest SMR. The ratio of the highest to the lowest with NS-SEC is 5.4, compared to 4.2 for Social Class. Therefore, analysis of mortality from accidents by NS-SEC is picking out something previously unidentified by Social Class, that small employers and own account workers have very low mortality from accidents. This group also has particularly low mortality rates from suicide.

Figures 5–9 plot the age pattern of mortality for the *Our Healthier Nation* causes of death. For ischaemic heart disease (IHD) and stroke the age pattern of mortality is very similar to that for overall mortality. The rank order of NS-SEC categories holds at every age group, except for the increase in mortality in NS-SEC 4 at older age groups which is also seen for all-cause mortality. For cancer, the advantage of the NS-SEC 4 group is smaller, but there is still this pattern of an increase at older age groups.

Figure 5 Age-specific mortality rates for ischaemic heart disease by NS-SEC, men aged 20–64, England and Wales, 1991–93

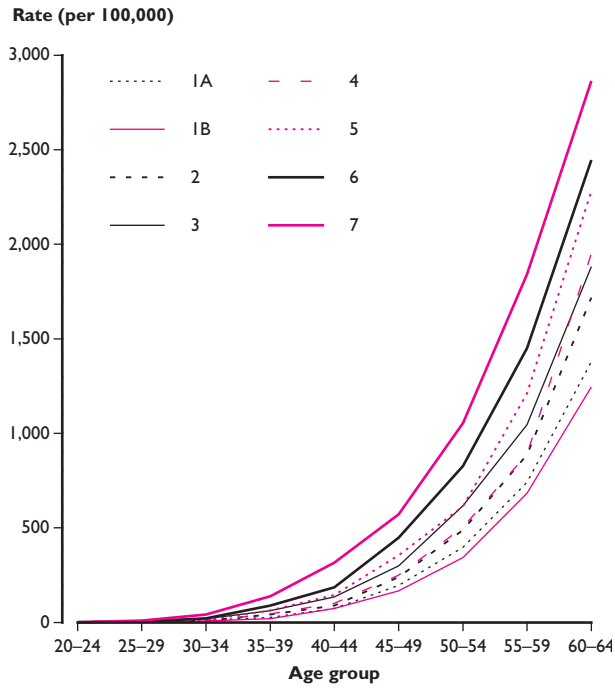


Figure 6 Age-specific mortality rates for stroke by NS-SEC, men aged 20–64, England and Wales, 1991–93

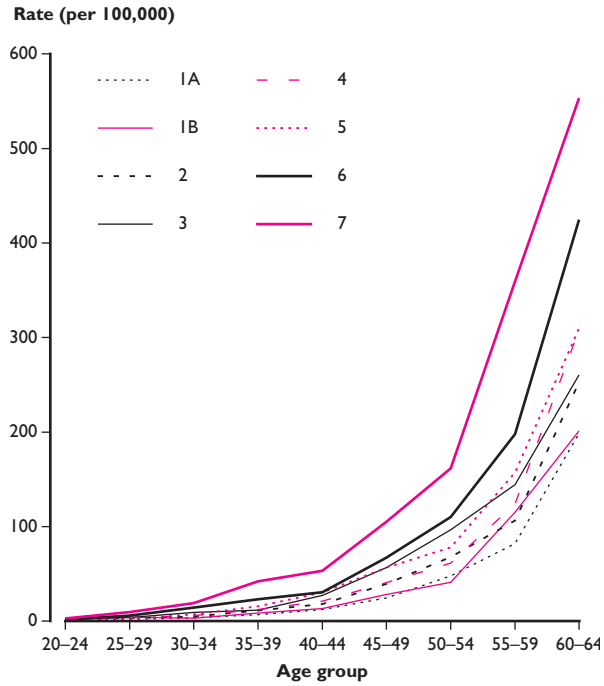


Figure 7 Age-specific mortality rates for cancer by NS-SEC, men aged 20–64, England and Wales, 1991–93

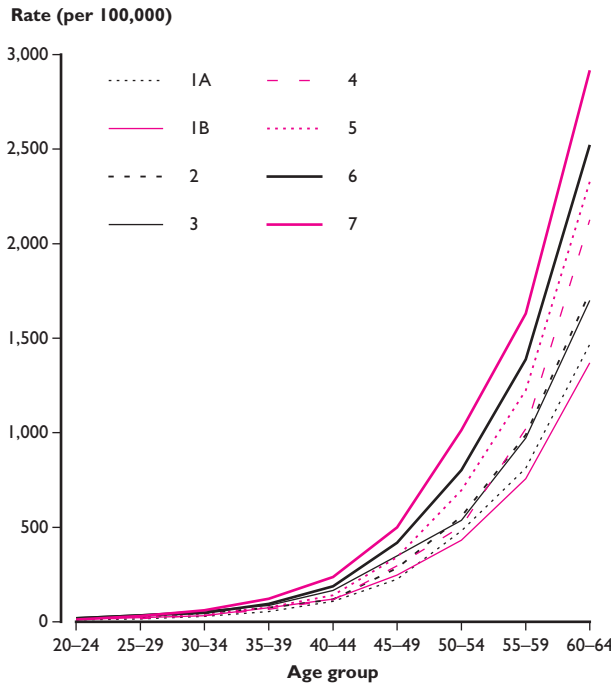


Figure 8 Age-specific mortality rates for accidents by NS-SEC, men aged 20–64, England and Wales, 1991–93

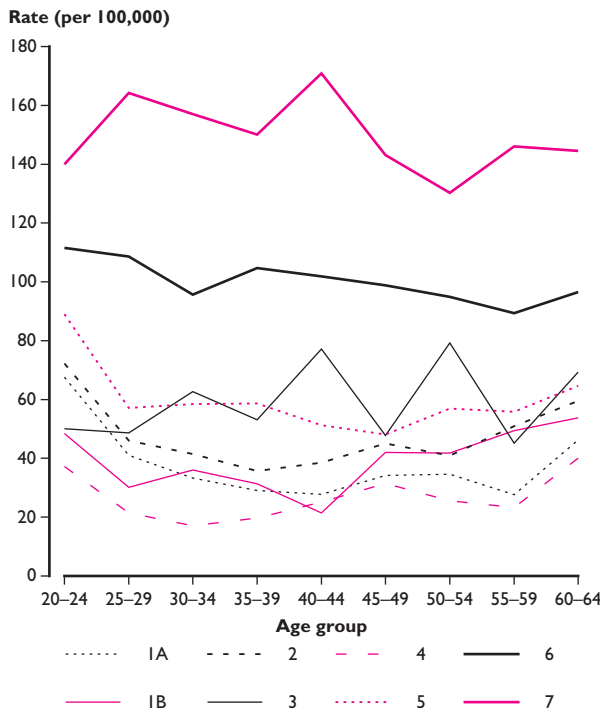
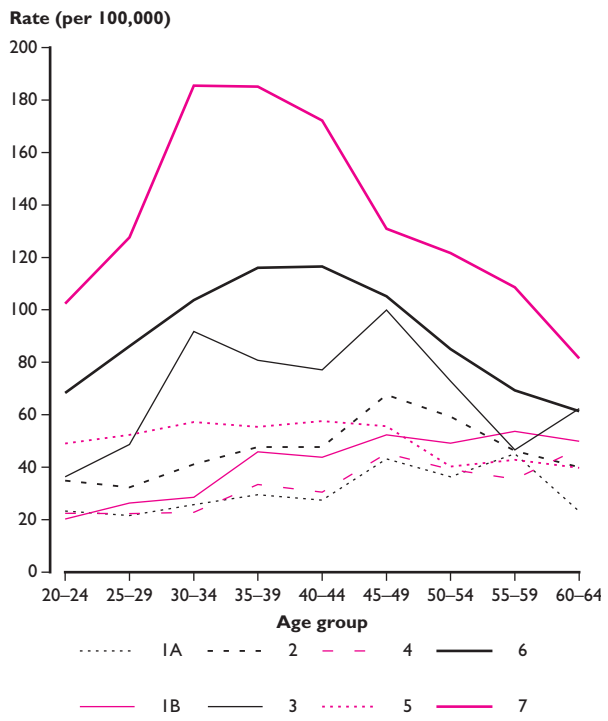


Figure 9 Age-specific mortality rates for suicide and undetermined injury by NS-SEC, men aged 20–64, England and Wales, 1991–93



For accidents and suicide the age pattern of mortality by NS-SEC is not so straightforward. For both causes there is no clear increase in mortality rates with age. For both causes NS-SEC 6 and 7 show the highest mortality rates with much crossover between other categories. For accidents NS-SEC 4 shows the lowest mortality in nearly every age group. For suicide NS-SEC 4 and NS-SEC 1A have the lowest mortality across the age bands.

An interesting point to note is the different age patterns for the different NS-SEC groups for deaths from suicide. For NS-SEC 6 and NS-SEC 7, mortality rates are lowest at the low and high age groups. There is a peak in suicide mortality rates for these NS-SEC groups between ages 30–44. This is similar to what is seen for suicide deaths in Social Classes IV and V.[4] However, for NS-SEC 4, 1A and 1B, like all other Social Classes there is a general increase in mortality rates with age. For other causes of death the different NS-SEC groups have the same age pattern of mortality.

Conclusions

There are substantial differences in standardised mortality ratios in men by NS-SEC group. However, unlike Social Class, there is no clear gradient of increasing mortality across the social scale. The rank order of the Social Class groups for male mortality is very similar for different age groups and for different causes of death. However, the rank order of NS-SEC groups varies by age and cause.

NS-SEC 4 (small employers and own account workers) has comparatively low mortality rates for most causes of death; however, the advantage is more pronounced for external causes of death and less pronounced for cancer. In addition, most of the advantage is seen at younger age groups, with rates increasing more sharply with age than with other NS-SEC groups. NS-SEC 4 appears to have identified a group of people with very low mortality, previously split across many Social Classes.

Generally NS-SEC 1A (employers and managers in large organisations) and NS-SEC 1B (higher professionals) have the lowest mortality rates for all age groups and causes, and NS-SEC 6 (semi-routine occupations) and NS-SEC 7 (routine occupations) the highest. NS-SEC 1A was found to have lower mortality than NS-SEC 2 (lower managerial and professional occupations). The ratio of the highest SMR to the lowest SMR is very similar to that obtained with Social Class for all causes of death, except accidents. For accidents the ratio of the highest to the lowest SMR is 4.2 with Social Class and 5.4 with NS-SEC. The reason for the increase in the ratio is that NS-SEC is identifying particularly low mortality in NS-SEC 4 (small employers and own account workers).

At first glance the finding that the ratio of the highest to lowest SMR is very similar between the two classifications is surprising, given the findings from Table 2. This table shows that within each Social Class grouping, those that have been allocated to higher NS-SEC groups have higher mortality than those in lower NS-SEC groups. However, as there is a fairly close relationship between those at either end of both social scales, the new classification makes very little difference to the overall SMRs in these groups. What the NS-SEC appears to have done is to separate out those people previously in Social Class IIIM and IV with very similar mortality rates, into NS-SEC 6 (semi-routine occupations) and NS-SEC 5 (lower supervisory, craft and related occupations), with NS-SEC 6 having much higher mortality rates than those in NS-SEC 5.

The Armed Forces have been shown to have much higher mortality rates than the NS-SEC category to which they have been allocated. However, these may not be true rates as there are often problems with a mismatch between the numerator and denominator. The number classified as being in the Armed Forces at death registration in 1991–93 may not correspond with the number classified as being in the Armed Forces at the 1991 Census.

Discussion

Our analysis has focused on using Social Class and NS-SEC to identify and describe socio-economic differentials in adult mortality. The results provide a first comparison with previous analyses of mortality using Social Class. However, they also raise some important questions about the application and use of NS-SEC in the analysis of health data. Of particular importance are: the different treatment of the Armed Forces in the two classifications and the influence on mortality rates; the identification of comparatively low mortality among the small employers and own account workers; and differences in mortality experience between those in the higher and lower managerial categories.

Each of these issues raise questions about how we interpret trends in health inequalities over time when moving to a new classification. While the NS-SEC provides a conceptually more robust basis for examining occupationally based analyses, it also presents a challenge in how to monitor time trends, separating real change from the inevitable discontinuity of using a new classification system.

However, it must be remembered that the analysis presented here used the *interim* version of NS-SEC. This is based on occupation classified using the Standard Occupational Classification (SOC) 1990. The SOC is itself being revised to take account of changes in employment and the emergence of new job types through the 1990s. A revised version – SOC2000 – will be published in 2000, the NS-SEC will be re-based and both classifications will be in use from 2001. Our findings are therefore *provisional* at this stage. We shall carry out further analyses using NS-SEC with mortality and other health data when the final version of NS-SEC becomes available.

Key findings

- There are large differences in the mortality rates of men aged 20–64 in NS-SEC groups in England and Wales between 1991 and 1993, but unlike the analysis of mortality rates by Social Class there is no clear gradient of increasing mortality across the social scale.
- For the majority of age groups and causes of death those in higher managerial and professional occupations (NS-SEC 1) have the lowest mortality and those in semi-routine and routine occupations the highest mortality (NS-SEC 6 and 7).
- Men in routine occupations have nearly three times the mortality rate of those in higher professional occupations, a ratio very similar to that found between the mortality rates of those in Social Class V and Social Class I.
- The small employers and own account workers group contains people previously allocated to many different Social Classes and are found to experience low mortality rates.

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4 Drever F and Bunting J. Patterns and trends in male mortality. In: Drever F and Whitehead M (eds) *Health Inequalities.* The Stationery Office (London: 1997).

5 Department of Health. *Our Healthier Nation: a contract for health.* The Stationery Office (London: 1998).

6 Department of Health. *Independent Inquiry into Inequalities in Health Report*. The Stationery Office (London: 1998).

Contact points

Electronic derivation tables for the NS-SEC are available both on disk from ONS and on StatBase, the new on-line directory and database system for government statistics. StatBase can be accessed via the GSS website at http://www.statistics.gov.uk. ONS will also be publishing a separate National Statistics Socio-economic Classification User Manual which will contain further details about how to derive NS-SEC.

For further information about the NS-SEC derivation matrix, contact Tessa Staples in the Occupational Information Unit, Room 4200W, ONS, Segensworth Road, Titchfield, Fareham, Hampshire PO14 5RR, tel: 01329 813503.

For information about the review of social classifications, and the development and structure of the NS-SEC, please contact Jean Martin, Social Survey Division, Room D2/05, ONS, 1 Drummond Gate, London SW1V 2QQ, tel: 0171 533 5314.

For enquiries relating to the adoption of the classification across government statistics, contact Jon McGinty, Socio-economic Statistics Division, Room B2/02, ONS, 1 Drummond Gate, London SW1V 2QQ, tel: 0171 533 5810.

Mortality in children aged under 4

Nirupa Dattani,
ONS

This article comments on statistics recently published by ONS relating to infant and childhood mortality in 1997. Several factors: birthweight, father's social class, mother's country of birth, mother's age, multiple birth status, marital status of parents and sex are known to be associated with the risk of mortality in infants under one year of age. For the first time, ONS has been able to analyse 3 year old children by these same factors. The results indicate that differentials persist among children aged under 3 but at a lower level compared to the infants.

Introduction

Traditionally, infant and childhood mortality has been seen as a major indicator of the health of a nation. Over the twentieth century, both infant and childhood mortality rates have dropped significantly in response to 'improved living conditions, diet and sanitation, birth control, advances in medical science and the availability of healthcare'.[1] Between 1971 and 1991, rates halved,[2] and have continued to decrease throughout the first half of the 1990s.[3] But, despite such overall improvements, important differentials exist by father's social class, birthweight, mother's country of birth, marital status of parents, sex and multiple birth status.

This article comments on the annual volume *Mortality Statistics: Childhood, infant and perinatal, England and Wales 1997*.[7] It also presents new data on deaths of children aged 3 using information from both the birth and death records.

Trends in infant and childhood mortality

Mortality rates are generally at their highest immediately after birth. They fall sharply throughout the first year of life and continue to fall, though more slowly, to a minimum in the 5 to 9 age group. The rates then rise gradually with age. At all ages in infancy and childhood, the mortality rates are higher for boys than for girls.

The infant mortality rate (the number of babies dying under one year of age per 1,000 live births) in England and Wales in 1997 was 5.9, compared to 6.1 in 1996, the lowest ever recorded. Figure 1 shows trends in neonatal deaths (at ages under 28 days) and postneonatal deaths (at ages between 28 days and one year). These show that over the last 15 years, neonatal mortality rates have decreased by 38 per cent

Figure 1 Infant mortality rates, 1981–97, England and Wales

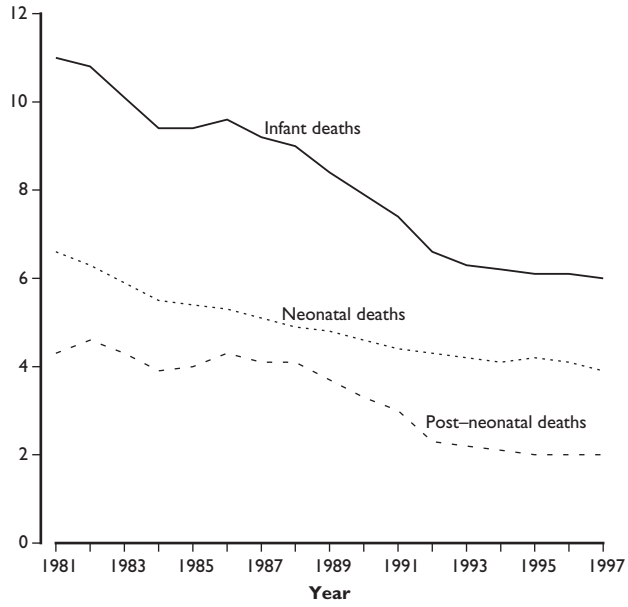
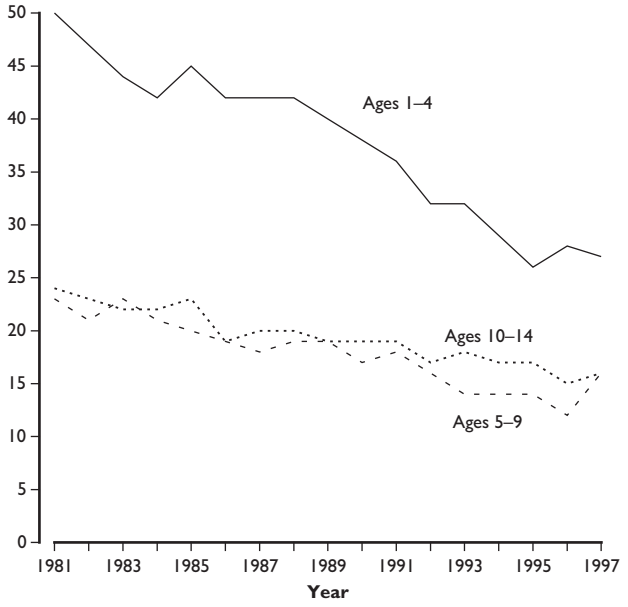


Figure 2 Childhood mortality rates, 1981–97, England and Wales



and postneonatal mortality rates have fallen by 57 per cent. The neonatal rate fell steadily over this period, whereas the postneonatal rate showed a rapid decrease between 1988 and 1992. This was largely due to the reduction in the number of sudden infant deaths (or cot deaths), which fell from 1,597 in 1988 to 531 in 1992. Numbers of sudden infant deaths have decreased further to 393 in 1997. Most sudden infant deaths occur in the postneonatal period.

On 1 October 1992 the legal definition of a stillbirth was altered from a baby born dead after 28 or more completed weeks' gestation to one born dead after 24 or more completed weeks' gestation. In Table 1, stillbirths of between 24 and 27 completed weeks' gestation have been excluded from the 1992–97 figures to allow comparison with the earlier years' data. It can be seen that the improvement in the stillbirth rate over the last 17 years has mirrored almost exactly the improvement in the neonatal mortality rate.

Table 1 Stillbirths and infant mortality rates*, 1981–97, England and Wales

Year of death	Stillbirths**	Neonatal deaths	Postneonatal deaths	Infant deaths
1981	6.6	6.6	4.3	11.0
1982	6.3	6.3	4.6	10.8
1983	5.7	5.9	4.3	10.1
1984	5.7	5.5	3.9	9.4
1985	5.5	5.4	4.0	9.4
1986	5.3	5.3	4.3	9.6
1987	5.0	5.1	4.1	9.2
1988	4.9	4.9	4.1	9.0
1989	4.7	4.8	3.7	8.4
1990	4.6	4.6	3.3	7.9
1991	4.6	4.4	3.0	7.4
1992	4.3	4.3	2.3	6.6
1993	4.4	4.2	2.2	6.3
1994	4.4	4.1	2.1	6.2
1995	4.2	4.2	2.0	6.1
1996	4.0	4.1	2.0	6.1
1997	3.9	3.9	2.0	5.9

* Stillbirth rates per 1,000 total births.
Neonatal, postneonatal and infant mortality rates per 1,000 live births.
** All figures are based on stillbirths which occurred after 28 or more weeks' gestation.

Causes of death

Stillbirth and neonatal death certificates allow for fetal conditions and maternal conditions to be recorded separately. These conditions are given equal weight and it is therefore not possible to derive a single underlying cause of neonatal death or stillbirth, as it is with postneonatal and childhood death. For this reason, the ONS, in conjunction with a team of experts in the field, has developed methods of classifying neonatal deaths and stillbirths. This allows the death or stillbirth to be assigned to specific categories, described in the published volume as 'ONS cause groups', based on the likely timing of the conditions leading to the death. These methods of classification have been described in detail elsewhere.[4,5]

Figure 2 shows that children aged 1–4 have higher mortality rates than children aged 5–9 and 10–14. The most common cause of death in all three age groups is transport accidents (ICD E800–E848) followed by accidents involving fire and flames (ICD E890–E899). All three age groups have seen an improvement in mortality rates of over a third over the last 15 years.

Of the 3,439 **stillbirths** which occurred in 1997 in England and Wales, 1,629 (47 per cent) were assigned to 'remaining antepartum deaths' which includes a large proportion of cases with cause unknown, and 1,033 (30 per cent) were assigned to antepartum ashyxia, anoxia or trauma. Stillbirths by ONS cause groups are shown in Figure 3.

Of the 2,499 **neonatal** deaths which occurred in 1997, using the ONS classification, 51 per cent were due to immaturity related conditions, 26 per cent due to congenital anomalies, and 12 per cent due to asphyxia, anoxia or trauma. This is shown in Figure 3. These findings are very similar to those shown last year.

Figure 3 Stillbirths and neonatal deaths by ONS cause groups, 1997, England and Wales

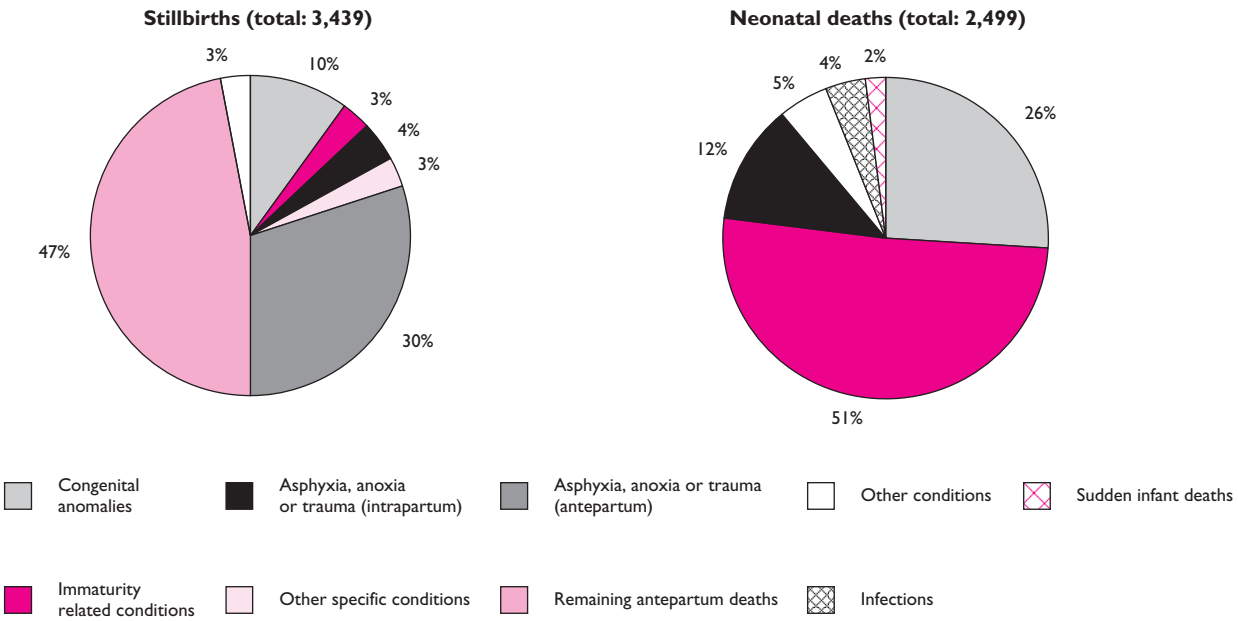


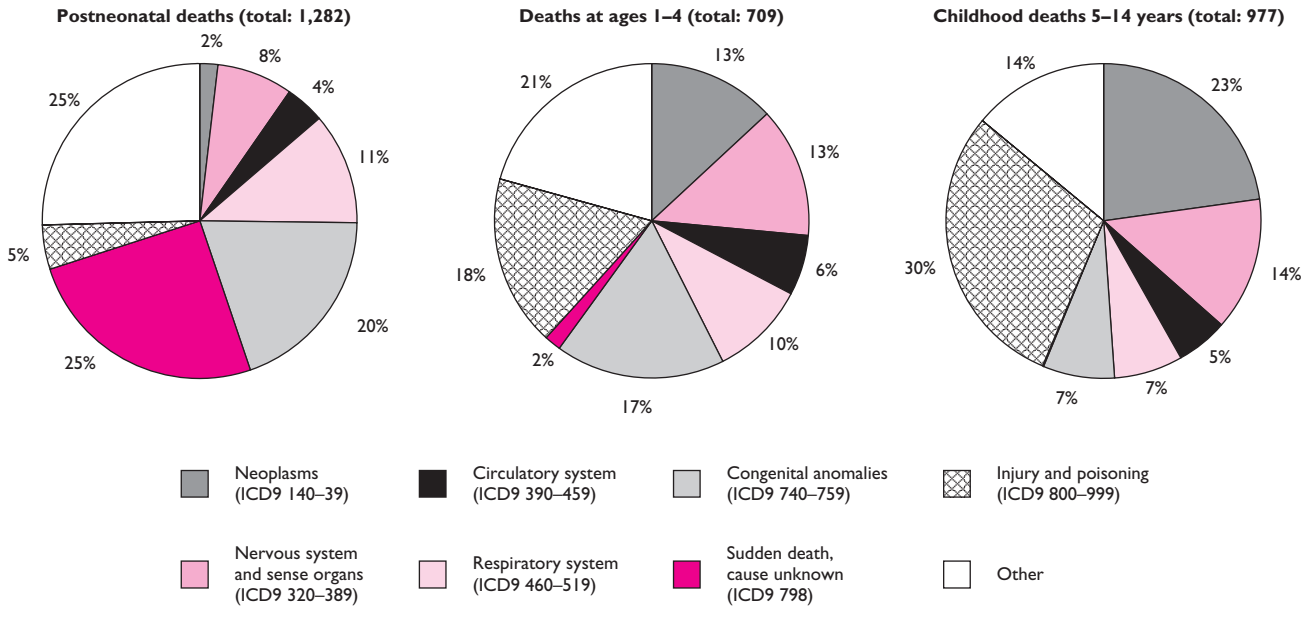
Figure 4 shows postneonatal and childhood deaths which occurred in 1997 by underlying cause of death. Of the 1,282 **postneonatal** deaths which occurred in 1997, 25 per cent had sudden death, cause unknown as an underlying cause of death, 20 per cent had congenital anomalies and 11 per cent had diseases of the respiratory system. Since 1988 postneonatal deaths have dropped by 55 per cent due to the reduction in sudden infant deaths.

As with previous years, injury and poisoning were the major causes of deaths for **children** aged 1 to 14 in 1997: accounting for 18 per cent of the deaths in the 1–4 age group and 30 per cent of the deaths in the 5–14 age group. In the 1–4 age group the second most common cause of death is congenital anomalies accounting for 17 per cent of the deaths in this age group. In the 5–14 age group the next major cause of death is neoplasms accounting for 23 per cent of deaths in this age group.

Linkage of birth and death records

In England and Wales, information on birthweight, age of mother at birth of child, country of birth of mother, marital status of parents and whether the birth was a singleton or multiple are recorded at birth registration. This information is not collected at death registration. For this reason, the ONS has linked the death records of infants to their corresponding birth records since 1975. The effect of some key risk

Figure 4 Postneonatal and childhood deaths by underlying cause, 1997, England and Wales



factors for infant and perinatal deaths can be assessed. Also, in 1994 the ONS started linking childhood death records to the corresponding birth records. This was done for all children who were born since 1 January 1993. Ninety five per cent of the records of childhood deaths at aged 1, 2 and 3 which occurred in England and Wales were linked to their birth records. Of the 5 per cent that were not linked the majority were born outside England and Wales, and so did not have a birth record in this country. For the first time last year we analysed deaths of 1 and 2 year old children by various factors collected at the time of their birth.[6] Data for more years are now available for 1 and 2 year old children and for the first time we can also include 3 year old children.

The numbers of deaths each year are quite small, but in future we will be able to calculate rates based on longer periods to reduce fluctuations, and add weight to our findings. The results for infants, 1, 2 and 3 year olds by various factors are shown in Tables 1 to 7. All the tables are based on the year of birth of the baby or child.

The ONS maintains a 'live' database of all deaths registered in England and Wales which have occurred since 1 January 1993. This is continually updated and amended as further information becomes available. Records for a particular period are extracted from the database when minimal changes to the data are expected for that period. The records used for this article are the same as those used for the publication of infant mortality rates for the years 1993 to 1997.[7] The dates of creation of these datasets can be seen in Box One.

For babies born in 1993, the numbers who died in infancy, those who died aged 1, 2 and 3 are enumerated, as well as the corresponding mortality rates. For infant deaths, the rate is calculated as the number of babies born in 1993 who died during their first year of life per 100,000 live births in 1993. For children dying aged 1, 2 or 3, the rate is calculated as the number of children dying at that age per 100,000 children who had reached that age. For example, the 'age 1' mortality rate for 1993 indicates how many children born in 1993 died aged 1 per 100,000 children born in 1993 who reached their first birthday.

For babies born in 1994, it was possible to do analysis on infant deaths and childhood deaths at ages 1 and 2. For babies born in 1995, analysis was possible for infant deaths and childhood deaths at age 1. For babies born in 1996, analysis is only possible for infant deaths.

Box one

Datasets

The datasets on which Tables 1 to 7 were based were created on the following dates:

Deaths occurring in 1993: 3 April 1996
Deaths occurring in 1994: 3 April 1996
Deaths occurring in 1995: 18 September 1996
Deaths occurring in 1996: 3 November 1997
Deaths occurring in 1997: 14 October 1998

Table 2 **Infant and childhood deaths, ages 1, 2 and 3, by father's social class for births inside marriage or outside marriage, joint registration, England and Wales**

		Numbers				Rates per 100,000			
Social class	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
All classes	1993	3,714	261	174	113	598	42	28	18
	1994	3,574	266	161		581	43	26	
	1995	3,578	251			596	42		
	1996	3,483				582			
Social Class I	1993	210	10	13	4	458	22	28	9
	1994	201	13	7		433	28	15	
	1995	192	6			422	13		
	1996	173				370			
Social Class II	1993	717	37	32	26	480	25	22	18
	1994	676	41	24		451	27	16	
	1995	703	45			476	31		
	1996	684				440			
Social Class IIIN	1993	341	28	8	8	544	45	13	13
	1994	328	25	17		520	40	27	
	1995	323	32			528	53		
	1996	336				516			
Social Class IIIM	1993	1153	70	48	26	562	34	24	13
	1994	1088	63	54		541	31	27	
	1995	1031	81			536	42		
	1996	1098				552			
Social Class IV	1993	499	43	23	18	553	48	26	20
	1994	537	44	32		611	50	37	
	1995	576	30			659	35		
	1996	603				605			
Social Class V	1993	242	23	13	3	664	64	36	8
	1994	239	22	14		663	61	39	
	1995	243	12			710	35		
	1996	263				815			

Father's social class

Although information on mother's occupation has been collected for live births since 1986 and for infant deaths since 1982, the information is incomplete.[8] Social class is therefore based on father's occupation, and so we are restricted to cases where the child's birth was either within marriage, or if outside marriage, registered by both parents. Of all the live births between 1995 and 1997, 92 per cent fell into this category. Cases other than this will not have a father's occupation recorded on the birth registration. Social class is defined according to the 1990 Standard Occupational Classification.

Infant mortality is known to be associated with father's social class. Infant mortality rates show social class gradients for both births inside marriage and outside marriage when registered by both parents. Table 2 shows that for babies born in 1996, those whose fathers were in Social Class V (unskilled occupations) had infant mortality rates more than double those whose fathers were in Social Class I (professional occupations) and there was a clear gradient through the social classes.

For children dying at age 3, the association between father's social class and mortality rates is not quite as clear because the numbers are too small. For children dying at age 1, however, the association is more evident, with the rate for Social Class V more than double that for Social Class I, the same as for infants. For children dying at age 2, who were born in 1993 and 1994, the mortality rate for Social Class V is 1.75 times higher than that for Social Class I. However, there was no clear gradient through the social classes for children aged 1 and 2.

Mother's age

For babies born in each of the years 1993 to 1996 infant mortality rates were highest for mothers aged under 20 (see Table 3). Mothers aged 40 and over also showed higher rates compared to those aged between 20 and 39. Over this time period, infant mortality rates were lowest for babies whose mothers were aged 25–29 or 30–34.

Childhood mortality rate at ages 1 to 3 appear to show a very similar pattern, although the rates for babies dying aged 1 whose mothers were in the 20–24 age group were very similar to the under 20 age group.

Marital status of parents

Infant mortality is known to be strongly associated with the parents' situations such as marital status (see Table 4). For babies born between 1993 and 1996 infant mortality rates were high for babies born outside marriage where either the birth was registered by the mother alone, or it was registered by both parents who gave different addresses. Both of these categories had infant mortality rates between 45 and 68 per cent higher than that for babies born inside marriage.

For childhood deaths at age 1, a similar association is seen, with those born inside marriage having the lowest mortality rates. For children dying at ages 2 and 3 mortality rates were highest for births outside marriage where either the birth was registered by both parents who gave different addresses or it was registered by the mother alone.

Table 3 **Infant and childhood deaths, ages 1, 2 and 3, by mother's age, England and Wales**

		Numbers				Rates per 100,000			
Mother's age	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
Total	1993	4,141	299	192	122	617	45	29	18
	1994	3,982	301	179		599	46	27	
	1995	3,948	293			609	46		
	1996	3,853				593			
Under 20	1993	410	27	29	13	909	60	65	29
	1994	423	33	16		1,007	79	39	
	1995	397	34			947	82		
	1996	413				925			
20–24	1993	1,051	96	42	38	692	64	28	25
	1994	994	91	48		709	65	35	
	1995	954	82			730	63		
	1996	824				655			
25–29	1993	1,250	87	58	40	530	37	25	17
	1994	1,192	90	56		520	40	25	
	1995	1,183	85			544	39		
	1996	1,119				530			
30–34	1993	952	60	42	16	557	35	25	9
	1994	917	52	36		511	29	20	
	1995	910	63			502	35		
	1996	1,011				542			
35–39	1993	386	23	16	13	656	39	27	22
	1994	392	30	21		622	48	34	
	1995	411	24			627	37		
	1996	395				568			
40+	1993	92	6	5	2	874	58	48	19
	1994	64	5	2		597	47	19	
	1995	93	5			822	45		
	1996	91				752			

Birthweight

The data for 1993 to 1996 show the usual strong association between birthweight and infant mortality. For each of these years, the infant mortality rate for babies weighing less than 1,500 grams (low birthweight babies) was over five times the rate for babies weighing 2,500 grams or more.

The figures in Table 5 indicate that the association between birthweight and mortality also exists at ages 1 and 2. At age 1 the mortality rate for very low birthweight babies (those weighing less than 1,500 grams) was over double the rate for low birthweight babies (those weighing less than 2,500 grams). At age 2 the mortality rate for very low birthweight babies was over 1.5 times the mortality rate for low birthweight babies. At age 3 there was only one death with very low birthweight. Hence no conclusions could be drawn.

Multiple births

The incidence of low birthweight is known to be higher amongst multiple births than singletons and increases with multiplicity. It is widely acknowledged that low birthweight is a significant factor contributing to the relatively high levels of infant mortality amongst multiple births.

Table 6 shows that for children born in 1993, 1994, 1995 and 1996, the infant mortality rate for twins was over five times that for singletons, and for triplets and higher order multiples, it was over ten times that for singletons.

The numbers of twins and higher order multiples dying at ages 1, 2 and 3 are too small to draw any definite conclusions. However, at age 1 the rates for twins is higher than singletons indicating that mortality risk is higher even after one year of life. The risk of infant and childhood mortality decreases with age both for singletons and higher order births.

Mother's country of birth

Information on ethnic group is not collected at birth registration, so mother's country of birth has often been used as a 'proxy' to compare differences in childhood and infant mortality rates. It is becoming increasingly the case, however, that a mother's country of birth is not an indication of her ethnic group, but more a measure of immigrant status.[9]

Table 7 shows infant and childhood mortality rates by mother's country of birth. In 1997, mothers from the 'New Commonwealth' (primarily Bangladesh, India, Pakistan, East Africa and the Caribbean) in particular experienced infant mortality rates 37 per cent higher than mothers from the UK. Within the 'New Commonwealth' category mothers from Pakistan experienced the highest infant mortality rates.

The number of deaths at ages 1, 2 and 3 are too small to allow much meaningful analysis of mortality rates. However, mothers from the 'New Commonwealth' show higher rates than those from the UK.

Sex

Boys experience higher mortality rates than girls at all ages. Table 8 shows this to be the case for infants and for children aged 1, 2 and 3. The difference in rates is more pronounced for infants (aged under 1) with the male rates being between 23 and 34 per cent higher than the female rates. The difference is less pronounced at ages 1, 2 and 3, but has been shown to be more pronounced in later childhood. This is largely due to the fact that accidental deaths are more common among boys than girls: nearly a third of male deaths are due to injury or poisoning compared with a fifth of female deaths.

Table 4 **Infant and childhood deaths, ages 1, 2 and 3, by marital status, England and Wales**

		Numbers				Rates per 100,000			
Marital status	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
Total	1993	4,141	299	192	122	617	45	29	18
	1994	3,982	301	179		599	46	27	
	1995	3,948	293			609	46		
	1996	3,853				593			
Inside marriage	1993	2,472	168	128	73	543	37	28	16
	1994	2,378	173	104		530	39	23	
	1995	2,278	161			532	38		
	1996	2,191				526			
Outside marriage, joint registration, same address	1993	863	67	25	30	730	57	21	26
	1994	820	57	40		662	46	33	
	1995	906	64			709	50		
	1996	893				660			
Outside marriage, joint registration, different addresses	1993	379	26	21	9	801	55	45	19
	1994	376	36	17		884	85	40	
	1995	394	26			892	59		
	1996	399				861			
Outside marriage, sole registration	1993	427	38	18	10	854	77	36	20
	1994	408	35	18		832	72	37	
	1995	370	42			772	88		
	1996	370				725			

Table 5 Infant and childhood deaths, ages 1, 2 and 3, by birthweight, England and Wales

		Numbers				Rates per 100,000			
Birthweight (grams)	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
Total	1993	4,141	299	192	122	617	45	29	18
	1994	3,982	301	179		599	46	27	
	1995	3,948	293			609	46		
	1996	3,853				593			
<1,000	1993	1,185	11	-	1	46,507	807	-	74
	1994	1,202	7	2		42,175	425	122	
	1995	1,300	12			45,280	764		
	1996	1,437				45,619			
1,000–1,499	1993	395	8	4	-	9,439	211	106	-
	1994	405	11	4		9,161	274	100	
	1995	395	11			8,385	255		
	1996	377				7,904			
1,500–1,999	1993	285	16	4	6	3,145	182	46	69
	1994	252	14	9		2,760	158	102	
	1995	257	16			2,657	170		
	1996	226				2,403			
2,000–2,499	1993	323	21	15	12	1,121	74	53	42
	1994	291	27	16		1,013	95	56	
	1995	345	30			1,148	101		
	1996	349				1,169			
2,500–2,999	1993	467	68	35	24	435	64	33	23
	1994	468	62	41		437	58	39	
	1995	478	63			437	58		
	1996	441				404			
3,000–3,499	1993	576	92	67	46	244	39	28	20
	1994	554	93	54		237	40	23	
	1995	554	93			236	40		
	1996	527				225			
3,500–3,999	1993	331	53	53	21	174	28	28	11
	1994	296	59	40		157	31	21	
	1995	334	53			181	29		
	1996	282				151			
4,000+	1993	132	20	9	10	182	28	12	14
	1994	147	22	12		205	31	17	
	1995	208	15			301	22		
	1996	132				188			
Low birthweight (<2,500)	1993	2,188	56	23	19	4,904	132	54	45
	1994	2,150	59	31		4,765	137	72	
	1995	2,297	69			4,856	153		
	1996	2,389				5,063			
Very low birthweight (<1,500)	1993	1,580	19	4	1	23,467	369	78	20
	1994	1,607	18	6		22,101	318	106	
	1995	1,695	23			22,356	391		
	1996	1,814				22,904			

Table 6 Infant and childhood deaths, ages 1, 2 and 3, by multiple birth status, England and Wales

		Numbers				Rates per 100,000			
Multiple births	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
Total	1993	4,141	299	192	122	617	45	29	18
	1994	3,982	301	179		599	46	27	
	1995	3,948	293			609	46		
	1996	3,853				593			
Singletons	1993	3,605	287	187	118	549	44	29	18
	1994	3,438	288	174		531	45	27	
	1995	3,392	279			538	45		
	1996	3,324				526			
Twins	1993	481	12	5	3	2,947	76	32	19
	1994	493	13	5		2,974	81	31	
	1995	490	14			2,851	84		
	1996	485				2,865			
Triplets+	1993	55	-	-	1	7,514	-	-	148
	1994	51	-	-		6,464	-	-	
	1995	66	-			7,674	-		
	1996	44				5,514			

Table 7 Infant and childhood deaths, ages 1, 2 and 3, by mother's country of birth, England and Wales

		Numbers				Rates per 100,000			
Mother's country of birth	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
United Kingdom	1993	3,518	248	152	104	594	42	26	18
	1994	3,377	255	158		580	44	27	
	1995	3,351	241			592	43		
	1996	3,276				578			
Irish Republic	1993	34	3	1	1	643	57	19	19
	1994	30	3	1		563	57	19	
	1995	32	1			619	20		
	1996	45				906			
Rest of European Union	1993	49	2	2	-	660	27	27	-
	1994	52	1	2		663	13	26	
	1995	34	-			423	-		
	1996	48				558			
Australia, Canada, New Zealand	1993	23	1	2	1	728	32	64	32
	1994	12	-	-		369	-	-	
	1995	18	3			590	99		
	1996	14				440			
New Commonwealth	1993	417	39	29	15	858	81	60	31
	1994	409	37	14		848	77	29	
	1995	396	39			837	83		
	1996	373				793			
Bangladesh	1993	29	4	3	5	495	69	52	86
	1994	43	3	2		688	48	32	
	1995	34	4			501	59		
	1996	53				765			
India	1993	44	3	-	2	601	41	-	28
	1994	40	2	-		569	29	-	
	1995	50	4			748	60		
	1996	36				545			
Pakistan	1993	161	19	15	6	1,236	148	117	47
	1994	140	17	4		1,096	135	32	
	1995	137	12			1,112	99		
	1996	134				1,088			
East Africa	1993	34	6	1	2	597	106	18	35
	1994	33	9	3		585	161	54	
	1995	29	6			566	118		
	1996	28				548			
Carribean	1993	39	1	4	-	1,260	33	131	-
	1994	37	2	1		1,222	67	33	
	1995	40	1			1,387	35		
	1996	23				843			
Other	1993	100	6	3	1	591	36	18	6
	1994	102	5	4		585	29	23	
	1995	117	8			645	44		
	1996	97				502			

Table 8 Infant and childhood deaths, ages 1, 2 and 3, by sex, England and Wales

		Numbers				Rates per 100,000			
Sex	Year of birth	Under 1	Age 1	Age 2	Age 3	Under 1	Age 1	Age 2	Age 3
Total	1993	4,141	299	192	122	617	45	29	18
	1994	3,982	301	179		599	46	27	
	1995	3,948	293			609	46		
	1996	3,853				593			
Male	1993	2,340	158	102	65	677	46	30	19
	1994	2,330	158	99		683	47	29	
	1995	2,270	174			683	53		
	1996	2,204				661			
Female	1993	1,801	141	90	57	550	43	28	18
	1994	1,652	143	80		511	44	25	
	1995	1,678	119			531	38		
	1996	1,649				522			

Conclusion

Both infant and childhood mortality are affected by various social and biological factors. This paper shows that factors known to increase the risk of infant mortality are also associated with higher mortality rates in children aged 1 and 2. More than one years' data are needed to confirm the effect at age 3. It has been known that low income groups have higher rates of children born with low birthweights and infant mortality compared with higher income groups. Low birth weight is also linked to poor health later in life and delayed physical and intellectual development in childhood and adolescence.[10]

As all of these factors are inter-related, an analysis of the associations between mortality and different combinations of these factors would tell us which babies and children are most at risk. This more detailed analysis for ages 1, 2 and 3 will follow at a later date when we have accumulated one or two years' more data.

Key findings

- Mortality rates for both infants and children in the 1–3 age group are highest for mothers in the under 20 age group.
- Mortality rates at ages 0, 1, 2 and 3 are lowest for children who were born either inside marriage, or outside marriage where the birth was registered by both parents giving the same address.
- The strong association between birthweight and mortality seen for infants under 1 year of age also exists for children at ages 1, 2 and 3.
- The children of mothers born in the New Commonwealth (primarily Bangladesh, India, Pakistan, East Africa and the Caribbean) experienced higher mortality rates at ages 0, 1, 2 and 3 than those children whose mothers were born in the UK.

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Deaths from hypothermia in England and Wales

Chris Chantler and Sue Kelly,
ONS

Deaths from hypothermia represent only a small percentage of the total deaths in England and Wales each year yet they continue to generate widespread interest throughout the winter months. This article briefly outlines some of the major trends in deaths from hypothermia since 1982. The analysis concentrates on an age and sex breakdown and the place of death, using text entries contained in the computerised records collected through death registration.

Introduction

This article briefly describes the trends in hypothermia deaths in England and Wales since 1982. Deaths were identified as those with a mention of hypothermia anywhere on the death certificate, whether as a main or contributory cause.

The condition of hypothermia is defined as 'having below-normal body temperature'. It is a preventable cause of death that principally affects the elderly.[1] Over the period 1982 to 1997, there was an average of 491 deaths per year. Although representing only a very small proportion of all deaths (0.06 per cent in 1997), these deaths are of political interest.

Trends since 1982

In 1982 there were 665 hypothermia deaths and, since a peak of 847 in 1986, the trend has been generally downward, with 357 deaths occurring in England and Wales in 1997. Over the same period, the number of male deaths has decreased from 280 to 162 and the number of female deaths from 385 to 195. The sex ratio (male deaths per 1,000 female deaths) has increased from 624 over the period 1982–86, to 728 over the period 1993–97.

Since 1982, higher death rates have been observed in winters with lower than average temperatures. This may explain a peak in death rates for both males and females during the winter of 1985–86.

The majority of hypothermia deaths occur at older ages, particularly for women. The average age at death has risen for both males and females from 69 to 70, and from 77 to 81, respectively, between 1982 and 1997. Over the period 1982–86, 82 per cent of deaths among males were to those aged 60 and over, and for females the proportion was higher at 93 per cent. By 1993–97, the proportion of men dying from hypothermia aged 60 and over fell to 75 per cent, but for females rose to 95 per cent (Table 1). These proportions compare with 85 and 91 per cent of all-cause mortality among men and women respectively occurring to those aged 60 and over during the period 1993–97.

The divergence in the proportions of male and female hypothermia deaths occurring under age 60 is due to a wide variation in the decline in the number of hypothermia deaths among those aged under 60. Between 1982–86 and 1993–97, the number of deaths decreased for each age/sex group shown in Table 1. However, the number of deaths to females aged under 60 fell by over 60 per cent (similar to the rates of decline in older age groups), whilst male deaths in this age group decreased by 19 per cent (a much slower rate of decline than in older age groups).

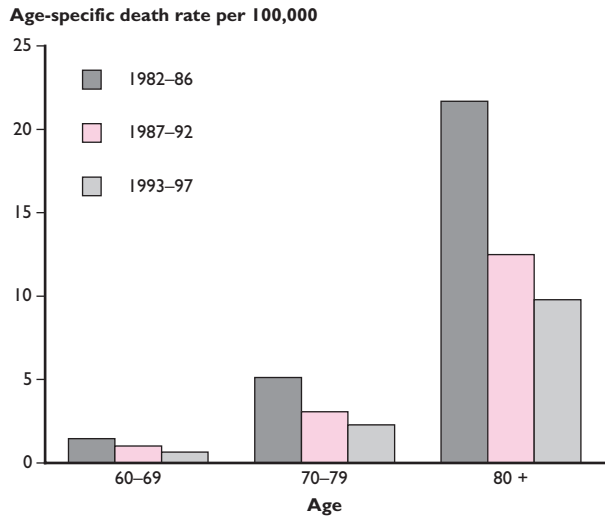
Table 1 Deaths from hypothermia, age and sex, England and Wales, 1982–97

	Males						Females				
	Total	Under 60	60–69	70–79	80+		Total	Under 60	60–69	70–79	80+
Numbers						**Numbers**					
1982–86	1,312	239	202	374	497	1982–86	2,102	147	170	585	1,200
1987–92	1,009	218	163	241	387	1987–92	1,567	107	124	386	950
1993–97	786	194	86	183	323	1993–97	1,079	56	68	247	708
Percentages						**Percentages**					
1982–86	100	18	15	29	38	1982–86	100	7	8	28	57
1987–92	100	22	16	24	38	1987–92	100	7	8	25	61
1993–97	100	25	11	23	41	1993–97	100	5	6	23	66

Age-specific death rates from hypothermia (deaths per 100,000 population) continue to decline for both males and females in all age groups. Rates for men and women have been very similar over the last 15 years and have also declined by similar amounts. Figure 1 therefore shows the rates for men and women combined, for three age groups over the period 1982–97. For each age group shown, the rate has fallen by over one half between 1982–86 and 1993–97.

When analysed by place of death, hypothermia deaths display some interesting differences compared to all-cause mortality (Table 2). Higher proportions of hypothermia deaths occur in hospital and 'elsewhere', whilst a lower proportion occur at the deceased's own home. More women die in hospital of hypothermia than men, an average of 81 per cent since 1982 compared with 71 per cent for men. The comparable figures for all-cause mortality are 65 and 63 per cent. Deaths 'elsewhere' include those occurring in the street, on a beach or in another person's house. The higher proportion of hypothermia deaths occurring 'elsewhere' compared to deaths from all causes can be explained, in part, by the fact that this category includes many deaths 'outdoors', and hypothermia is associated with cold weather (see below).

Figure 1 Age-specific death rates for hypothermia, England and Wales, 1982–86, 1987–92 and 1993–97



Other characteristics of deaths since 1993

Since 1993 ONS has held all deaths information electronically, following the successful computerisation of the majority of register offices.[2]

Examination of the text entry for those hypothermia deaths with place of death recorded as 'elsewhere' revealed that over the period 1993–97, 66 of the 68 male deaths with a specific place mentioned occurred 'outdoors'.

It is often thought that hypothermia particularly affects the homeless. Examination of text entries for place of death recorded as 'elsewhere' revealed that 15 (0.8 per cent) of the 1,865 hypothermia deaths over the period 1993–97 were to the homeless. Although this is only a very small percentage, it compares to just 0.02 per cent of all deaths in 1997 occurring to those identified at death registration as being homeless. Both these figures may be an underestimate as at death registration details of the usual residence of the deceased are supplied by an informant to the best of his/her ability. The registrar is expected to obtain the best possible information where the deceased had no obvious usual address. In the case of a homeless person found dead on a street this may mean recording the last hostel stayed in or, if necessary, the street name where they were found. Where a registrar has to copy details of usual residence from a coroner's certificate after inquest, the coroner may have insisted that wording such as 'no fixed abode' is used. This may go some way to explaining the higher percentage of hypothermia deaths among the homeless, since a large proportion (two-thirds) of hypothermia deaths have an external underlying cause, such as accident (see below). All external cause deaths will have been certified by a coroner after inquest.

Table 2 Deaths from hypothermia and all causes, by place of death, England and Wales, 1982–97

	Percentage of deaths			
	Males		Females	
Place of death	Hypothermia	All causes	Hypothermia	All causes
Hospital	71	63	81	65
Home	15	27	14	21
Other communal establishments	0	5	0	11
Elsewhere	14	6	5	3

Notes: Figures may not sum due to rounding.
'Elsewhere' includes street, beach, other person's house, etc.

Since 1993, the availability of a fully computerised mortality database has enabled the ONS to code every cause of death mentioned on death certificates, and then in the majority of cases to automatically select the underlying cause. An analysis of all these coded causes of death, derived from the attending doctor's and coroner's cause of death text entries, showed that the most common underlying causes of death for those with a mention of hypothermia are external causes. These accounted for 67 per cent of the 1,865 hypothermia deaths over the period 1993–97, the rest being largely assigned an underlying cause of diseases of the circulatory, respiratory and digestive systems. Of the external causes, 69 per cent (863) were coded as accidents due to excessive cold. For females, a further 16 per cent were coded to accidental falls.

The above finding is not unexpected, as the factor most commonly attributed to deaths from hypothermia is cold weather. An analysis by month of occurrence confirms this. Nearly two-thirds of hypothermia deaths over the period 1993–97 occurred between December and March, compared to just over a quarter of deaths from all causes.

Summary

The number of hypothermia deaths in England and Wales has declined over the last 15 years. More females than males die of hypothermia, though the female excess has declined over the years. Hypothermia deaths are more likely to occur in hospital or 'outdoors' compared to deaths from all causes. This article has illustrated the usefulness of the electronic maintenance of all deaths information since 1993. It allows us to look at the coding of all causes of death mentioned on death certificates, together with text on place of death and place of residence. The analysis by underlying cause of death and month of occurrence confirms the association of hypothermia with cold weather.

Key findings

- The number of deaths from hypothermia continues to fall.
- More women die from hypothermia than men.
- A higher proportion of hypothermia deaths occurs at age 85 and over than deaths from all causes.
- Hypothermia deaths are more likely to occur in hospital compared to deaths from all causes.
- There is an evident link between cold weather and deaths from hypothermia.

References

1 Royal College of Physicians of London. *Report of Committee on Accidental Hypothermia*. Royal College of Physicians (London: 1966).

2 Rooney C and Devis T. Mortality trends by cause of death in England and Wales 1980–94: the impact of introducing automated cause coding and related changes in 1993. *Population Trends* 86 (1997) 29–35.

Tables

Symbols

..	not available
:	not applicable
-	nil or less than half the final digit shown
blank	not yet available

Table 1.1 Population and vital rates: international

Selected countries

Year	United Kingdom (1)	Austria (2)	Belgium (2)	Denmark (2)	Finland (2)	France (2)	Germany (Fed. Rep (2))*	Germany (2)†	Greece (2)	Irish Republic (2)	Italy (2)	Luxem-bourg (2)	Nether-lands (2)	Portugal (2)
Population (thousands)														
1971	55,928	7,501	9,673	4,963	4,612	51,251	61,302	78,352	8,831	2,978	54,074	342	13,195	8,644
1976	56,216	7,566	9,811	5,073	4,726	52,909	61,531	78,321	9,167	3,228	55,718	361	13,774	9,355
1981	56,352	7,569	9,859	5,122	4,800	54,182	61,682	78,419	9,729	3,443	56,510	365	14,247	9,851
1986	56,852	7,588	9,862	5,121	4,918	55,547	61,066	77,694	9,967	3,541	56,596	368	14,572	10,011
1991	57,808	7,818	10,005	5,154	5,014	57,055	64,074	80,014	10,247	3,526	56,751	387	15,070	9,871
1992	58,006	7,915	10,045	5,170	5,042	57,373	64,865	80,624	10,322	3,557	56,859	393	15,184	9,867
1993	58,191	7,989	10,085	5,189	5,066	57,654	65,534	81,156	10,380	3,574	57,049	398	15,290	9,881
1994	58,395	8,028	10,116	5,205	5,089	57,899	65,858	81,438	10,426	3,587 ‡	57,204	404	15,383	9,902
1995	58,606	8,047	10,137	5,228	5,108	58,137 ‡	66,715	81,678	10,454	3,605 ‡	57,301	410	15,459	9,917
1996	58,801	8,059	10,157	5,262	5,125	58,374 ‡		82,071	10,475	3,626 ‡	57,397	416	15,531	9,927
1997	59,009	8,072	10,170	5,284	5,140	58,607 ‡			10,485 ‡	3,661 ‡	57,523	418	15,604	9,934 ‡
Population changes (per 1,000 per annum)														
1971–76	1.0	1.7	2.9	4.4	4.9	6.5	0.7	–0.1	7.6	16.8	6.1	10.7	8.8	16.5
1976–81	0.5	0.1	1.0	1.9	3.1	4.8	0.5	0.3	12.3	13.3	2.8	2.5	6.9	10.6
1981–86	1.8	0.5	0.1	0.0	4.9	5.0	–2.0	–1.8	4.9	5.7	0.3	1.8	4.6	3.2
1986–91	3.4	6.1	2.9	1.3	3.9	5.4	9.9	6.0	5.6	–0.8	0.5	10.2	6.8	–2.8
1991–92	3.4	12.3	4.1	3.2	5.6	5.6	12.3	7.6	7.3	8.8	1.9	13.9	7.6	–0.4
1992–93	3.2	9.3	3.9	3.7	4.8	4.9	10.3	6.6	5.6	4.8	3.4	14.3	7.0	1.4
1993–94	3.5	4.9	3.1	3.0	4.4	4.2	4.9	3.5	4.5	3.9 ‡	2.7	14.3	6.1	2.2
1994–95	3.6	2.4	2.1	4.4	3.7	4.1 ‡	13.0	2.9	2.7	5.0 ‡	1.7	14.6	4.9	1.4
1995–96	3.3	1.6	1.9	6.4	3.3	4.1 ‡		4.8	2.0	5.8 ‡	1.7	14.4	4.6	1.1
1996–97	3.5	1.6	1.3	4.3	3.0	4.0 ‡			1.0	9.6 ‡	2.2	5.8	4.7	0.7
Live birth rate (per 1,000 per annum)														
1971–75	14.1	13.3	13.4	14.6	13.1	16.0	10.8	10.5	15.8	22.2	16.0	11.6	14.9	20.3
1976–80	12.5	11.5	12.5	12.0	13.6	14.1	9.7	10.5	15.6	21.3	12.6	11.2	12.6	17.9
1981–85	12.9	12.0	12.0	10.2	13.4	14.2	9.8	10.7	13.3	19.2	10.6	11.6	12.2	14.5
1986–90	13.6	11.6	12.1	11.5	12.7	13.8	10.9		10.6	15.8	9.8	12.2	12.8	11.9
1991	13.7	12.1	12.6	12.5	13.0	13.3	11.3	10.4	10.1	15.0	9.9	12.9	13.2	11.8
1992	13.5	12.1	12.4	13.1	13.3	13.0	11.1	10.1	10.1	14.4	9.7	13.1	13.0	11.6
1993	13.1	11.9	12.0 ‡	13.0	12.8	12.3	11.0	9.9	9.8	13.8	9.6	13.4	12.8	11.5
1994	12.9	11.5	11.5 ‡	13.4	12.8	12.3	10.5	9.5	10.0	13.4 ‡	9.3	13.5	12.7	11.0
1995	12.5	11.0	11.4 ‡	13.4	12.3	12.5 ‡	10.2	9.4	9.7	13.5 ‡	9.2 ‡	13.2	12.3	10.8
1996	12.5	11.0	11.4 ‡	12.9 ‡	11.8	12.6 ‡	10.6 ‡	9.7 ‡	9.6 ‡	13.9 ‡	9.2 ‡	13.7	12.2	11.1
1997	12.3	10.4	11.4 ‡	12.8 ‡	11.5 ‡	12.4 ‡			9.7 ‡	14.3 ‡	9.2 ‡	13.1	12.2 ‡	11.4
Death rate (per 1,000 per annum)														
1971–75	11.8	12.6	12.1	10.1	9.5	10.7	11.9	12.3	8.6	11.0	9.8	12.2	8.3	11.0
1976–80	11.9	12.3	11.6	10.5	9.3	10.2	11.7	12.2	8.8	10.2	9.7	11.5	8.1	10.1
1981–85	11.7	12.0	11.4	11.1	9.3	10.1	11.6	12.0	9.0	9.4	9.5	11.2	8.3	9.6
1986–90	11.4	11.1	10.8	11.5	9.8	9.5	11.3		9.3	9.1	9.4	10.5	8.5	9.6
1991	11.3	10.7	10.5	11.6	9.8	9.2	11.1	11.4	9.3	8.9	9.7	9.7	8.6	10.5
1992	11.0	10.5	10.3	11.8	9.9	9.1	10.7	11.0	9.5	8.7	9.6	10.2	8.6	10.2
1993	11.3	10.3	10.7 ‡	12.1	10.1	9.2	10.9	11.1	9.4	8.7	9.7	9.8	9.0	10.7
1994	10.7	10.0	10.4 ‡	11.7	9.4	9.0	10.7	10.9	9.4	8.6 ‡	9.7 ‡	9.4	8.7	10.0
1995	10.9	10.1	10.5 ‡	12.1	9.6	9.1 ‡	10.6	10.8	9.6	9.0	9.5 ‡	9.3	8.8	10.4
1996	10.9	10.0	10.4 ‡	11.6 ‡	9.6	9.2 ‡	10.7	10.8	9.6	8.8 ‡	9.5 ‡	9.4	8.9 ‡	10.8
1997	10.8	9.8	10.2 ‡	11.3 ‡	9.6	9.1 ‡			9.6	8.6 ‡	9.6 ‡	9.4	8.7 ‡	10.5

* Excluding former GDR throughout.
† Including former GDR throughout.
‡ Provisional.
≠ Estimates prepared by the Population Division of the United Nations.
\+ Rates are for 1990–95.

(1) Population estimated at 30 June each year.
(2) Average of estimated populations at start and end of year as given in Council of Europe report *Recent demographic developments in Europe 1997*.
(3) EU as constituted 1 January 1986 and including countries subsequently admitted.
(4) Population estimated at 1 June each year.
(5) Population estimated at 31 December each year.
(6) Population estimated at 1 July except for 1991 (1 March).
(7) Population estimated at 1 October. (Rates for Japan are based on population of Japanese nationality only.)

Note: Figures may not add exactly due to rounding.

Table 1.1 continued **Population and vital rates: international** *Selected countries*

Spain (2)	Sweden (2)	European Union (3)	Russian Federation (2)	Australia (1)	Canada (4)	New Zealand (5)	China (5)	India (6)	Japan (7)	USA (1)	Year
											Population (thousands)
34,190	8,098	342,631		13,067	22,026	2,899	852,290	551,311	105,145	207,661	1971
35,937	8,222	350,384		14,033	23,517	3,163	943,033 ≠	617,248	113,094	218,035	1976
37,742	8,321	356,511	139,422	14,923	24,900	3,195	1,011,219 ≠	676,218	117,902	230,138	1981
38,537	8,370	359,543	144,475	16,018	26,204	3,317	1,086,733 ≠	767,199	121,672	240,680	1986
38,920	8,617	366,256	148,624	17,284	28,120	3,450	1,170,052 ≠	851,661	123,102	252,177	1991
39,008	8,668	368,033	148,689	17,495	28,542	3,516	1,183,617 ≠	867,818	123,476	255,078	1992
39,086	8,719	369,706 ‡	148,520	17,667	28,947	3,556	1,190,360 ≠	833,910	123,788	257,783	1993
39,150	8,781	371,005 ‡	148,336	17,855	29,256	3,604	1,208,841 ≠	918,570 ≠	124,069	260,341	1994
39,210	8,827	372,122 ‡	148,141	18,072	29,615	3,658	1,221,462 ≠	935,744 ≠	124,299	262,755	1995
39,270	8,841	373,331 ‡	147,739	18,311	29,964 ‡	3,716	1,232,083 ≠	936,000 ≠	124,709	265,284	1996
39,323	8,847			18,530							1997
											Population changes (per 1,000 per annum)
10.2	3.1	4.5	5.6	14.8	13.5	18.2	19.9	23.9	15.1	10.0	1971–76
10.0	2.4	3.5	8.5	12.7	11.8	2.0	15.2	18.8	8.5	10.9	1976–81
4.2	1.2	1.7	7.2	14.7	10.5	7.6	15.5	27.3	6.4	9.3	1981–86
2.0	5.9	3.7	5.7	15.8	14.6	8.0	15.3	22.0	2.4	9.6	1986–91
2.3	5.9	4.9 ‡	0.4	12.2	15.0	19.0	11.6	19.0	3.0	11.5	1991–92
2.0	5.8	4.5 ‡	–1.1	9.9	14.2	11.5	5.7	18.5	2.5	10.6	1992–93
1.6	7.1	3.5 ‡	–1.2	10.6	10.7	13.5	15.5	39.2	2.3	9.9	1993–94
1.5	5.3	3.0 ‡	–1.3	12.2	12.3	15.0	10.4	18.7	1.9	9.3	1994–95
1.5	1.6		–2.7	13.2	11.8 ‡	15.8	8.7		3.3	9.6	1995–96
1.3	0.7			12.0							1996–97
											Live birth rate (per 1,000 per annum)
19.2	13.5	14.7		18.8	15.9	20.4	27.2	35.6	18.6	15.3	1971–75
17.1	11.6	13.1		15.7	15.5	16.8	18.6	33.4	14.9	15.2	1976–80
12.8	11.3	12.2		15.6	15.1	15.8	19.2	..	12.6	15.7	1981–85
10.8	13.2	13.3		15.1	14.8	17.1			10.6	16.0	1986–90
10.2	14.3	11.7	12.1	14.9	14.3	17.4		29.5	9.9	16.3	1991
10.2	14.2	11.5	10.7	15.1	14.0	17.2		29.0	9.7	16.0	1992
9.9	13.5	11.2 ‡	9.3	14.7	13.4	17.1	18.3+	28.7	9.5	15.5	1993
9.5	12.8	10.9 ‡	9.5	14.5	13.2	16.4		28.7	9.9	15.2	1994
9.3 ‡	11.7	10.7 ‡	9.2	14.2	12.8	16.3		28.3	9.5	14.8	1995
9.1 ‡	10.8		8.8	13.9					9.6 ‡	14.8 ‡	1996
9.2 ‡	10.2		8.6								1997
											Death rate (per 1,000 per annum)
8.5	10.5	10.8		8.2	7.4	8.4	7.3	15.5	6.4	9.1	1971–75
8.0	10.9	10.6		7.6	7.2	8.2	6.6	13.8	6.1	8.7	1976–80
7.7	11.0	10.4		7.3	7.0	8.1	6.7	..	6.1	8.6	1981–85
8.2	11.1	11.4		7.2	7.3	8.2			6.4	8.7	1986–90
8.6	11.0	10.2	11.4	6.9	7.0	7.8		9.8	6.7	8.6	1991
8.5	10.9	10.0	12.2	7.1	6.9	7.9		10.1	6.9	8.5	1992
8.7	11.1	10.2 ‡	14.3	6.8	7.1	7.7	7.2+	9.3	7.0	8.8	1993
8.6	10.5	9.9 ‡	15.5	7.1	7.1	7.5		9.3	7.0	8.7	1994
8.8 ‡	10.6	10.0 ‡	14.9	6.9	7.1	7.6		9.0	7.4	8.8	1995
8.9 ‡	10.6		14.1	7.0	7.2	7.6			7.1	8.8 ‡	1996
8.9 ‡	10.5		13.7								1997

See notes opposite.

Table 1.2 **Population: national** *Constituent countries of the United Kingdom*
Numbers (thousands) and percentage age distribution

Mid-year	United Kingdom	Great Britain	England and Wales	England	Wales	Scotland	Northern Ireland
Estimates							
1971	55,928	54,388	49,152	46,412	2,740	5,236	1,540
1976	56,216	54,693	49,459	46,660	2,799	5,233	1,524
1981	56,352	54,815	49,634	46,821	2,813	5,180	1,538
1986	56,852	55,285	50,162	47,342	2,820	5,123	1,567
1991	57,808	56,207	51,100	48,208	2,891	5,107	1,601
1992	58,006	56,388	51,277	48,378	2,899	5,111	1,618
1993	58,191	56,559	51,439	48,533	2,906	5,120	1,632
1994	58,395	56,753	51,621	48,707	2,913	5,132	1,642
1995	58,606	56,957	51,820	48,903	2,917	5,137	1,649
1996	58,801	57,138	52,010	49,089	2,921	5,128	1,663
1997	59,009	57,334	52,211	49,284	2,927	5,123	1,675
of which (percentages)							
0–4	6.3	6.3	6.3	6.3	6.0	6.0	7.4
5–15	14.2	14.1	14.2	14.1	14.5	13.9	17.2
16–44	40.9	40.9	40.8	41.0	38.4	41.8	41.9
45–64M/59F	20.4	20.5	20.5	20.5	21.2	20.4	18.5
65M/60F–74	10.9	10.9	10.9	10.8	12.0	11.3	9.6
75 and over	7.2	7.3	7.3	7.3	7.9	6.6	5.5
Projections≠							
2001	59,618	57,924	52,818	49,871	2,947	5,106	1,694
2006	60,287	58,576	53,492	50,526	2,966	5,084	1,711
2011	60,929	59,209	54,151	51,161	2,989	5,059	1,720
2016	61,605	59,880	54,849	51,832	3,017	5,031	1,725
2021	62,244	60,519	55,526	52,484	3,043	4,993	1,724
of which (percentages)							
0–4	5.6	5.6	5.6	5.6	5.6	5.3	5.8
5–15	12.2	12.1	12.2	12.2	12.4	11.8	13.1
16–44	35.7	35.7	35.8	35.8	35.2	34.6	36.7
45–64†	27.3	27.3	27.2	27.3	26.2	28.7	27.0
65–74†	10.6	10.6	10.6	10.5	11.3	11.1	9.6
75 and over	8.6	8.6	8.7	8.6	9.4	8.5	7.7

≠ These projections are based on the mid-1996 population estimates.
† Between 2010 and 2020, state retirement age will change from 65 years for men and 60 years for women, to 65 years for both sexes.
Note: Figures may not add exactly due to rounding.

Table 1.3 **Population: subnational** *Health Regional Office areas of England**
Numbers (thousands) and percentage age distribution

Mid-year	Northern and Yorkshire +	Trent +	Anglia and Oxford	North Thames	South Thames	South and West	West Midlands	North West
Estimates								
1971	6,482	4,483	4,272	6,914	6,642	5,569	5,146	6,903
1976	6,512	4,557	4,531	6,695	6,567	5,789	5,178	6,832
1981	6,238	4,921	4,745	6,598	6,489	5,988	5,187	6,657
1986	6,207	4,945	4,979	6,652	6,567	6,224	5,197	6,570
1991	6,285	5,035	5,174	6,744	6,679	6,426	5,265	6,600
1992	6.309	5,060	5,206	6,766	6,696	6,459	5,278	6,603
1993	6,323	5,081	5,226	6,795	6,715	6,486	5,290	6,617
1994	6,332	5,096	5,261	6,830	6,749	6,529	5,295	6,616
1995	6,337	5,109	5,315	6,872	6,782	6,569	5,306	6,614
1996	6,338	5,121	5,361	6,934	6,819	6,594	5,317	6,605
1997	6,336	5,128	5,410	6,988	6,865	6,639	5,321	6,598
of which (percentages)								
0–4	6.1	6.1	6.4	6.9	6.4	5.8	6.4	6.3
5–15	14.4	14.1	14.3	13.8	13.5	13.7	14.6	14.9
16–44	40.4	40.3	41.5	44.1	41.6	39.1	40.0	40.2
45–64M/59F	20.6	20.9	20.8	19.2	20.1	21.1	20.9	20.6
65M/60F–74	11.3	11.3	10.2	9.6	10.6	11.8	11.1	11.0
75 and over	7.1	7.3	6.8	6.5	7.9	8.6	7.0	7.1
Projections≠								
2001	6,365	5,184	5,568	7,088	6,955	6,786	5,343	6,582
2006	6,382	5,232	5,747	7,220	7,077	6,958	5,358	6,553
2011	6,405	5,277	5,906	7,352	7,198	7,122	5,372	6,530
2016	6,435	5,324	6,057	7,487	7,326	7,291	5,391	6,521
2021	6,464	5,371	6,198	7,614	7,455	7,456	5,411	6,515
of which (percentages)								
0–4	4.5	4.4	4.6	5.1	4.7	4.2	4.6	4.6
5–15	12.8	12.7	13.1	13.4	12.9	12.2	13.3	13.2
16–44	37.6	37.4	37.8	40.8	38.3	35.8	37.1	37.8
45–64†	26.6	23.7	23.6	22.8	23.5	23.7	23.5	23.5
65–74†	12.8	12.9	12.5	10.8	12.0	13.9	12.8	12.5
75 and over	8.6	8.9	8.5	7.1	8.6	10.3	8.7	8.4

* Areas as constituted in 1996. Population figures for years before 1981 may relate to different areas where boundaries have changed.
≠ These projections are based on the mid-1996 population estimates.
\+ From 1 April 1996 boundary changes due to local government reorganisation have led to changes in the constitution of the Northern and Yorkshire and Trent Regional Office areas. South Humber Health Authority with 311.3 thousand people – mid-1996 is now included in the Trent Regional Office area rather than in the Northern and Yorkshire area.
† Between 2010 and 2020, state retirement age will change from 65 years for men and 60 years for women, to 65 years for both sexes.
Note: Figures may not add exactly because of rounding.

Table 1.4 **Population: subnational** *Government Office Regions of England*
Numbers (thousands) and percentage age distribution

Mid-year	North East	North West and Merseyside	North West	Mersey-side	Yorkshire and the Humber	East Midlands	West Midlands	Eastern	London	South East	South West
Estimates											
1971	2,679	7,108	5,446	1,662	4,902	3,652	5,146	4,454	7,529	6,830	4,112
1976	2,671	7,043	5,457	1,586	4,924	3,774	5,178	4,672	7,089	7,029	4,280
1981	2,636	6,940	5,418	1,522	4,918	3,853	5,187	4,854	6,806	7,245	4,381
1986	2,601	6,852	5,381	1,471	4,906	3,919	5,197	5,012	6,803	7,492	4,560
1991	2,603	6,885	5,436	1,450	4,983	4,035	5,265	5,150	6,890	7,679	4,718
1992	2,609	6,890	5,444	1.446	5,002	4,062	5,278	5,175	6,905	7,712	4,746
1993	2,612	6,903	5,462	1,441	5,014	4,083	5,290	5,193	6,933	7,737	4,768
1994	2,610	6,902	5,468	1,434	5,025	4,102	5,295	5,223	6,968	7,784	4,798
1995	2,605	6,900	5,473	1,427	5,029	4,124	5,306	5,257	7,007	7,847	4,827
1996	2,600	6,891	5,471	1,420	5,036	4,141	5,317	5,293	7,074	7,895	4,842
1997	2,594	6,885	5,471	1,413	5,037	4,156	5,321	5,334	7,122	7,959	4,876
of which (percentages)											
0–4	6.0	6.2	6.3	6.1	6.3	6.1	6.4	6.3	7.1	6.2	5.8
5–15	14.5	14.8	14.8	15.0	14.4	14.2	14.6	13.9	13.6	13.9	13.5
16–44	40.3	40.1	40.1	40.3	40.6	40.3	40.0	40.3	46.1	40.4	38.5
45–64M/59F†	20.6	20.6	20.8	19.9	20.4	21.1	20.9	21.1	18.2	21.0	21.1
65M/60F–74†	11.7	11.0	10.9	11.5	11.0	11.1	11.1	11.0	8.9	10.8	12.1
75 and over	6.9	7.1	7.1	7.2	7.3	7.2	7.0	7.4	6.2	7.8	9.0
Projections≠											
2001	2,579	6,871	5,485	1,386	5,071	4,234	5,343	5,448	7,215	8,134	4,977
2006	2,555	6,843	5,490	1,353	5,098	4,312	5,358	5,582	7,337	8,344	5,098
2011	2,536	6,820	5,497	1,323	5,130	4,384	5,372	5,702	7,470	8,534	5,213
2016	2,521	6,813	5,514	1,299	5,165	4,455	5,391	5,823	7,609	8,722	5,333
2021	2,509	6,808	5,530	1,278	5,200	4,523	5,411	5,941	7,736	8,905	5,452
of which (percentages)											
0–4	4.4	4.6	4.6	4.5	4.5	4.4	4.6	4.5	5.3	4.5	4.1
5–15	12.7	13.2	13.2	13.1	12.9	12.8	13.3	13.0	13.3	12.9	12.1
16–44	37.3	37.6	37.6	37.8	38.0	37.3	37.1	36.7	43.1	37.0	35.1
45–64†	23.9	23.6	23.6	23.2	23.5	23.7	23.5	23.5	22.6	23.7	23.9
65–74†	13.1	12.6	12.6	12.7	12.5	12.9	12.8	13.1	9.7	12.7	14.3
75 and over	8.6	8.5	8.4	8.7	8.5	8.8	8.7	9.3	6.1	9.2	10.7

≠ These projections are based on the mid-1996 population estimates.
† Between 2010 and 2020, state retirement age will change from 65 years for men and 60 years for women, to 65 years for both sexes.
Note: Figures may not add exactly because of rounding.

Table 1.5 **Population: age and sex** *Constituent countries of the United Kingdom*
Numbers (thousands)

		Age group														
Mid-year	All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
United Kingdom																
Persons																
1971	55,928	899	3,654	8,916	8,144	6,971	6,512	10,202	3,222	4,764	2,159	358	127	14,257	32,548	9,123
1976	56,216	677	3,043	9.176	8.126	7,868	6,361	9,836	3,131	5,112	2,348	390	147	13,797	32,757	9,663
1981	56,352	730	2,725	8,147	9,019	8,010	6,774	9,540	2,935	5,195	2,675	428	174	12,541	33,780	10,031
1986	56,852	749	2,893	7,163	9.283	8,048	7,717	9,210	3,067	5,017	2,986	516	203	11,679	34,846	10,328
1991	57,808	794	3,092	7,175	8,247	9,057	7,955	9,500	2,888	5,067	3,136	639	257	11,741	35,469	10,597
1992	58,006	787	3,124	7,289	7,969	9,199	7,818	9,814	2,868	5,104	3,100	662	274	11,850	35,533	10,623
1993	58,191	759	3,129	7,417	7,723	9,295	7,787	10,070	2,839	5,169	3,020	688	294	11,965	35,589	10,637
1994	58,395	759	3,117	7,483	7,554	9,375	7,837	10,277	2,808	5,223	2,952	703	308	12,075	35,689	10,630
1995	58,606	734	3,102	7,526	7,450	9,409	7,931	10,445	2,784	5,127	3,054	719	325	12,106	35,848	10,652
1996	58,801	719	3,044	7,595	7,325	9,420	8,093	10,582	2,772	5,058	3,125	728	339	12,098	36,035	10,668
1997	59,009	736	2,977	7,665	7,219	9,362	8,296	10,702	2,783	5,006	3,175	732	356	12,104	36,214	10,691
Males																
1971	27,167	461	1,874	4,576	4,137	3,530	3,271	4,970	1,507	1,999	716	97	29	7,318	17,008	2,841
1976	27,360	348	1,564	4,711	4,145	3,981	3,214	4,820	1,466	2,204	775	101	31	7,083	17.167	3,111
1981	27,409	374	1,399	4,184	4,596	4,035	3,409	4,711	1,376	2,264	921	105	35	6,438	17,646	3,325
1986	27,698	384	1,484	3,682	4,747	4,063	3,871	4,572	1,462	2,205	1,063	128	38	5,999	18,266	3,433
1991	28,246	407	1,588	3,688	4,227	4,591	3,986	4,732	1,390	2,272	1,151	167	47	6,033	18,576	3,637
1992	28,362	403	1,602	3,744	4,087	4,670	3,917	4,889	1,384	2,297	1,143	176	51	6,084	18,611	3,666
1993	28,474	389	1,603	3,808	3,965	4,723	3,904	5,017	1,374	2,333	1,117	186	55	6,140	18,642	3,692
1994	28,592	389	1,596	3,840	3,879	4,767	3,929	5,118	1,363	2,363	1,096	193	58	6,194	18,687	3,710
1995	28,727	376	1,589	3,861	3,825	4,793	3,984	5,201	1,358	2,330	1,147	201	62	6,208	18,779	3,740
1996	28,856	369	1,560	3,897	3,760	4,805	4,072	5,270	1,355	2,310	1,185	206	67	6,205	18,882	3,768
1997	28,990	377	1,526	3,932	3,705	4,780	4,182	5,329	1,361	2,299	1,215	211	71	6,209	18,984	3,796
Females																
1971	28,761	437	1,779	4,340	4,008	3,441	3,241	5,231	1,715	2,765	1,443	261	97	6,938	15,540	6,282
1976	28,856	330	1,479	4,465	3,980	3,887	3,147	5,015	1,665	2,908	1,573	289	116	6,714	15,590	6,552
1981	28,943	356	1,326	3,963	4,423	3,975	3,365	4,829	1,559	2,931	1,755	322	139	6,103	16,134	6,706
1986	29,153	365	1,409	3,480	4,536	3,986	3,846	4,638	1,605	2,813	1,923	388	164	5,679	16,580	6,894
1991	29,562	387	1,505	3,487	4,021	4,466	3,968	4,769	1,498	2,795	1,986	472	210	5,708	16,893	6,961
1992	29,645	384	1,522	3,545	3,882	4,530	3,900	4,925	1,484	2,807	1,957	486	223	5,766	16,922	6,957
1993	29,718	370	1,526	3,609	3,758	4,572	3,883	5,054	1,466	2,836	1,903	502	239	5,826	16,946	6,946
1994	29,803	370	1,521	3,643	3,674	4,608	3,908	5,159	1,444	2,861	1,856	510	249	5,881	17,002	6,920
1995	29,878	358	1,513	3,665	3,625	4,616	3,947	5,244	1,427	2,797	1,907	518	262	5,898	17,069	6,911
1996	29,946	350	1,484	3,698	3,565	4,615	4,020	5,312	1,418	2,748	1,940	522	273	5,893	17,153	6,900
1997	30,019	359	1,450	3,733	3,514	4,581	4,114	5,374	1,422	2,707	1,960	521	285	5,895	17,229	6,894
England and Wales																
Persons																
1971	49,152	782	3,170	7,705	7,117	6,164	5,736	9,034	2,853	4,228	1,926	323	115	12,334	28,710	8,108
1976	49,459	585	2,642	7,967	7,077	6,979	5,608	8,707	2,777	4,540	2,093	351	135	11,973	28,894	8,593
1981	49,634	634	2,372	7,085	7,873	7,086	5,996	8,433	2,607	4,619	2,388	383	157	10,910	29,796	8,928
1986	50,162	655	2,528	6,243	8,134	7,088	6,863	8,136	2,725	4,470	2,673	465	184	10,190	30,759	9,213
1991	51,100	702	2,728	6,281	7,237	8,008	7,056	8,407	2,553	4,506	2,810	576	233	10,303	31,351	9,446
1992	51,277	694	2,760	6,385	6,985	8,137	6,924	8,695	2,534	4,538	2,777	598	249	10,407	31,402	9,467
1993	51,439	670	2,764	6,504	6,768	8,219	6,887	8,929	2,507	4,596	2,704	623	268	10,515	31,445	9,480
1994	51,621	671	2,752	6,568	6,612	8,293	6,925	9,118	2,478	4,644	2,642	636	281	10,618	31,530	9,473
1995	51,820	649	2,739	6,613	6,521	8,329	7,003	9,272	2,458	4,554	2,734	651	297	10,653	31,676	9,491
1996	52,010	636	2,688	6,683	6,411	8,342	7,146	9,397	2,447	4,490	2,800	658	311	10,655	31,851	9,505
1997	52,211	651	2,632	6,751	6,332	8,290	7,325	9,503	2,456	4,440	2,844	661	327	10,672	32,018	9,522
Males																
1971	23,897	402	1,626	3,957	3,615	3,129	2,891	4,414	1,337	1,778	637	86	26	6,334	15,036	2,527
1976	24,089	300	1,358	4,091	3,610	3,532	2,843	4,280	1,304	1,963	690	91	29	6,148	15,169	2,773
1981	24,160	324	1,218	3,639	4,011	3,569	3,024	4,178	1,227	2,020	825	94	32	5,601	15,589	2,970
1986	24,456	336	1,297	3,211	4,156	3,579	3,445	4,053	1,302	1,972	954	115	35	5,236	16,143	3,076
1991	24,995	360	1,401	3,231	3,710	4,065	3,539	4,199	1,234	2,027	1,035	151	43	5,296	16,442	3,257
1992	25,099	356	1,416	3,282	3,583	4,137	3,472	4,343	1,228	2,049	1,028	160	46	5,346	16,470	3,283
1993	25,198	343	1,416	3,341	3,476	4,184	3,456	4,458	1,218	2,082	1,004	170	51	5,397	16,495	3,306
1994	25,304	344	1,410	3,371	3,396	4,225	3,475	4,551	1,209	2,109	985	175	53	5,448	16,533	3,323
1995	25,433	333	1,403	3,394	3,348	4,252	3,523	4,626	1,204	2,078	1,032	183	57	5,465	16,619	3,349
1996	25,557	327	1,378	3,430	3,291	4,265	3,602	4,689	1,201	2,059	1,066	188	61	5,466	16,716	3,375
1997	25,684	334	1,350	3,463	3,249	4,243	3,700	4,740	1,206	2,048	1,094	192	66	5,475	16,810	3,399
Females																
1971	25,255	380	1,544	3,749	3,502	3,036	2,845	4,620	1,516	2,450	1,289	236	89	6,000	13,673	5,581
1976	25,370	285	1,284	3,876	3,467	3,447	2,765	4,428	1,473	2,577	1,403	261	106	5,826	13,725	5,820
1981	25,474	310	1,154	3,446	3,863	3,517	2,972	4,255	1,380	2,599	1,564	289	126	5,309	14,207	5,958
1986	25,706	319	1,231	3,032	3,978	3,509	3,418	4,083	1,422	2,498	1,718	349	149	4,953	14,616	6,137
1991	26,104	342	1,328	3,050	3,527	3,943	3,517	4,208	1,319	2,479	1,775	425	191	5,007	14,908	6,189
1992	26,178	339	1,345	3,104	3,403	4,001	3,452	4,352	1,306	2,488	1,749	439	203	5,062	14,932	6,184
1993	26,241	326	1,348	3,163	3,293	4,035	3,431	4,471	1,289	2,514	1,700	453	218	5,117	14,950	6,173
1994	26,317	327	1,342	3,197	3,216	4,069	3,449	4,567	1,270	2,536	1,656	461	228	5,170	14,997	6,150
1995	26,387	316	1,335	3,219	3,172	4,076	3,480	4,646	1,254	2,477	1,702	468	240	5,188	15,058	6,141
1996	26,453	310	1,310	3,253	3,120	4,077	3,544	4,709	1,246	2,430	1,733	471	250	5,188	15,134	6,130
1997	26,527	317	1,282	3,287	3,083	4,046	3,625	4,763	1,250	2,392	1,750	470	262	5,196	15,208	6,123

Table 1.5 continued **Population: age and sex** *Constituent countries of the United Kingdom*
Numbers (thousands)

Mid-year	All ages	Age group														
		Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
England																
Persons																
1971	46,412	739	2,996	7,272	6,731	5,840	5,421	8,515	2,690	3,976	1,816	306	109	11,648	27,128	7,636
1976	46,660	551	2,491	7,513	6,688	6,599	5,298	8,199	2,616	4,274	1,972	332	127	11,293	27,275	8,092
1981	46,821	598	2,235	6,678	7,440	6,703	5,663	7,948	2,449	4,347	2,249	362	149	10,285	28,133	8,403
1986	47,342	618	2,385	5,885	7,692	6,717	6,484	7,672	2,559	4,199	2,518	438	174	9,608	29,070	8,665
1991	48,208	663	2,574	5,916	6,840	7,599	6,665	7,920	2,399	4,222	2,645	543	220	9,711	29,627	8,870
1992	48,378	657	2,606	6,014	6,601	7,724	6,541	8,193	2,381	4,252	2,612	564	235	9,811	29,678	8,889
1993	48,533	633	2,611	6,125	6,394	7,803	6,508	8,415	2,356	4,308	2,541	587	253	9,913	29,720	8,899
1994	48,707	634	2,601	6,186	6,246	7,873	6,545	8,593	2,329	4,355	2,481	600	265	10,012	29,803	8,893
1995	48,903	615	2,589	6,231	6,158	7,909	6.622	8,738	2,310	4,270	2,568	613	280	10,048	29,946	8,909
1996	49,089	603	2,543	6,298	6,054	7,922	6,761	8,856	2,299	4,210	2,629	620	293	10,053	30,114	8,922
1997	49,284	616	2,490	6,364	5,980	7,873	6,933	8,956	2,308	4,164	2,670	623	308	10,071	30,275	8,939
Males																
1971	22,569	380	1,537	3,734	3,421	2,965	2,733	4,161	1,261	1,671	599	107	25	5,982	14,209	2,377
1976	22,728	283	1,280	3,858	3,413	3,339	2,686	4,031	1,228	1,849	649	85	27	5,798	14,320	2,610
1981	22,795	306	1,147	3,430	3,790	3,377	2,856	3,938	1,154	1,902	777	89	30	5,280	14,717	2,798
1986	23,086	317	1.224	3,026	3,931	3,392	3,255	3,822	1,224	1,853	900	109	33	4,937	15,254	2,895
1991	23,588	340	1,322	3,043	3,507	3,859	3,344	3,957	1,159	1,900	975	143	41	4,991	15,539	3,058
1992	23,688	337	1,336	3,091	3,385	3,928	3,281	4,093	1,154	1,920	968	151	44	5,039	15,566	3,082
1993	23,782	325	1,338	3,146	3,282	3,974	3,267	4,202	1,145	1,951	945	160	48	5,089	15,590	3,103
1994	23,882	326	1,332	3,175	3,207	4,012	3,286	4,289	1,136	1,977	926	166	50	5,137	15,626	3,119
1995	24,008	315	1,327	3,198	3,160	4,039	3,333	4,360	1,132	1,948	969	173	54	5,155	15,709	3,144
1996	24,129	309	1,304	3,233	3,106	4,051	3,410	4,420	1,129	1,931	1,002	177	58	5,158	15,803	3,167
1997	24,251	316	1,278	3,265	3,067	4,030	3,504	4,468	1,134	1,921	1,027	181	62	5,168	15,893	3,191
Females																
1971	23,843	359	1,459	3,538	3,310	2,875	2,688	4,354	1,429	2,305	1,217	309	85	5,666	12,918	5,259
1976	23,932	269	1,211	3,656	3,275	3,260	2,612	4,168	1,387	2,425	1,323	246	100	5,495	14,968	5,481
1981	24,026	292	1,088	3,248	3,650	3,327	2,807	4,009	1,295	2,445	1,472	273	119	5,004	13,416	5,605
1986	24,257	301	1,161	2,859	3,761	3,325	3,229	3,850	1,335	2,346	1,618	330	141	4,671	13,816	5,770
1991	24,620	324	1,253	2,873	3,333	3,739	3,322	3,964	1,239	2,323	1,670	400	179	4,720	14,088	5,812
1992	24,691	320	1,270	2,923	3,215	3,795	3,260	4,100	1,227	2,332	1,644	413	191	4,772	14,112	5,807
1993	24,751	309	1,273	2,979	3,111	3,829	3,241	4,212	1,211	2,357	1,597	427	205	4,824	14,131	5,796
1994	24,825	309	1,268	3,010	3,039	3,862	3,259	4,304	1,193	2,378	1,555	434	214	4,874	14,177	5,774
1995	24,896	300	1,262	3,033	2,998	3,871	3,289	4,378	1,178	2,322	1,598	441	226	4,893	14,237	5,765
1996	24,960	293	1,239	3,065	2,948	3,872	3,351	4,437	1,170	2,279	1,627	443	235	4,894	14,311	5,755
1997	25,033	300	1,213	3,099	2,913	3,843	3,429	4,488	1,174	2,244	1,643	442	246	4,903	14,382	5,748
Wales																
Persons																
1971	2,740	43	173	433	386	325	315	519	164	252	110	16	6	686	1,582	472
1976	2,799	33	151	453	388	379	309	509	161	267	121	19	7	680	1,618	501
1981	2,813	36	136	407	434	383	333	485	158	272	139	21	8	626	1,663	525
1986	2,820	37	143	358	441	371	378	464	166	271	155	26	10	582	1,690	548
1991	2,891	39	154	365	397	409	391	486	154	284	165	33	13	592	1,724	576
1992	2,899	38	154	372	385	413	383	501	152	286	165	34	14	596	1,724	578
1993	2,906	36	153	379	375	416	379	514	151	288	163	36	15	602	1,725	580
1994	2,913	36	151	382	367	420	379	525	149	289	161	36	16	606	1,727	580
1995	2,917	35	149	383	363	420	380	534	148	284	166	37	17	605	1,730	581
1996	2,921	34	145	385	357	420	385	541	148	280	171	38	18	602	1,737	582
1997	2,927	35	141	387	352	417	392	547	148	276	174	39	19	601	1,743	583
Males																
1971	1,329	22	89	222	194	164	158	253	76	107	38	6	1	352	827	150
1976	1,361	17	78	233	197	193	157	249	75	114	41	5	2	350	849	162
1981	1,365	18	70	209	221	193	168	240	73	118	48	5	2	321	871	173
1986	1,370	19	73	185	225	187	190	231	79	119	54	7	2	300	889	181
1991	1,407	20	79	188	203	206	195	242	74	128	60	8	2	305	904	199
1992	1,411	19	79	191	198	208	191	250	74	129	60	9	3	306	904	201
1993	1,417	19	78	195	193	210	189	256	73	131	60	9	3	309	905	203
1994	1,422	19	77	196	190	213	189	262	72	131	60	10	3	311	907	204
1995	1,425	18	76	196	188	214	190	266	72	130	62	10	4	310	910	206
1996	1,428	17	74	197	185	214	192	269	72	128	65	10	4	308	913	207
1997	1,433	18	72	198	182	214	196	272	72	127	67	11	4	308	917	208
Females																
1971	1,412	21	85	211	191	161	157	265	88	146	73	16	4	335	755	322
1976	1,438	16	73	220	191	187	153	260	86	152	80	14	6	330	770	339
1981	1,448	18	66	199	213	190	165	246	85	154	91	16	6	305	791	352
1986	1,450	18	70	173	217	184	188	233	87	152	101	20	8	282	800	367
1991	1,484	19	75	177	194	203	195	244	80	156	105	25	11	288	820	377
1992	1,488	19	75	181	187	205	192	252	79	157	105	25	12	290	820	377
1993	1,490	18	75	185	181	206	190	258	78	157	103	26	13	293	819	377
1994	1,491	18	74	186	177	207	190	263	77	158	101	27	13	295	820	376
1995	1,491	17	73	187	175	206	190	268	76	154	104	27	14	295	820	376
1996	1,493	16	71	188	172	206	193	272	76	151	106	28	15	294	824	375
1997	1,494	17	69	189	170	204	196	275	76	148	107	28	15	293	826	375

Table 1.5 continued **Population: age and sex** *Constituent countries of the United Kingdom*
Numbers (thousands)

		Age group														
Mid-year	All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
Scotland																
Persons																
1971	5,236	86	358	912	781	617	612	926	294	430	183	29	9	1,440	2,986	810
1976	5,233	67	291	904	806	692	591	897	282	460	202	31	11	1,352	3,023	858
1981	5,180	69	249	780	875	724	603	880	260	460	232	35	14	1,188	3,110	882
1986	5,123	66	257	657	870	742	665	849	273	435	251	41	15	1,063	3,171	889
1991	5,107	66	259	634	754	809	699	853	265	441	259	50	19	1,023	3,174	910
1992	5,111	67	260	641	727	817	692	873	264	445	256	51	20	1,025	3,174	912
1993	5,120	64	260	648	705	825	694	888	262	451	249	52	21	1,032	3,176	912
1994	5,132	63	261	651	690	829	703	902	260	456	243	53	21	1,038	3,183	911
1995	5,137	61	261	649	677	827	715	911	258	450	250	55	22	1,036	3,187	914
1996	5,128	59	255	647	663	821	728	919	256	446	255	56	23	1,028	3,185	915
1997	5,123	60	247	649	651	809	744	924	255	443	259	56	24	1,021	3,185	917
Males																
1971	2,516	44	184	467	394	306	299	440	134	176	60	8	2	738	1,530	247
1976	2,517	34	149	463	408	347	290	429	128	193	65	8	2	693	1,556	269
1981	2,495	35	128	400	445	364	298	424	118	194	77	8	3	610	1,603	282
1986	2,474	34	131	337	445	375	332	410	127	184	86	10	3	545	1,647	283
1991	2,470	34	133	325	385	407	348	415	124	192	91	12	3	524	1,646	299
1992	2,473	34	133	328	371	412	344	426	124	194	90	13	4	525	1,646	301
1993	2,479	33	133	332	360	415	345	434	123	197	88	13	4	528	1,648	302
1994	2,486	32	133	333	353	418	350	441	122	200	86	14	4	531	1,651	304
1995	2,489	31	133	332	346	416	356	446	121	198	90	14	4	530	1,653	307
1996	2,486	30	130	331	339	413	362	450	121	197	92	15	4	526	1,651	309
1997	2,484	31	126	332	333	407	371	453	121	196	95	15	5	522	1,651	311
Females																
1971	2,720	42	174	445	387	311	313	485	160	254	122	20	7	701	1,455	563
1976	2,716	32	142	440	398	345	301	468	154	267	137	23	8	659	1,468	589
1981	2,685	33	121	380	430	359	305	456	142	265	155	27	11	579	1,506	600
1986	2,649	32	126	320	425	368	334	439	146	250	165	32	12	518	1,525	606
1991	2,637	32	126	309	369	402	351	437	141	249	168	37	16	499	1,528	611
1992	2,638	33	126	313	356	406	348	447	141	251	165	38	16	500	1,527	611
1993	2,642	32	127	316	345	409	349	454	139	254	161	39	17	504	1,528	609
1994	2,646	31	128	318	337	412	353	461	138	256	157	40	17	507	1,532	607
1995	2,647	30	128	317	331	411	359	465	136	252	160	40	18	506	1,534	607
1996	2,642	29	125	316	324	408	366	469	135	249	163	41	19	502	1,534	606
1997	2,638	29	121	317	318	403	374	471	135	247	164	41	19	498	1,534	605
Northern Ireland																
Persons																
1971	1,540	31	126	299	247	189	165	243	74	106	51	7	2	483	853	205
1976	1,524	26	111	306	243	198	163	231	73	111	53	8	2	471	840	212
1981	1,538	27	104	282	271	200	175	227	68	116	55	9	4	442	874	221
1986	1,567	28	108	262	280	218	189	225	69	113	62	10	4	426	915	226
1991	1,601	26	104	260	256	240	200	241	70	119	67	12	5	415	945	241
1992	1,618	26	104	263	256	245	202	247	70	121	67	13	5	417	957	244
1993	1,632	25	105	265	250	251	205	253	70	123	67	13	5	419	968	246
1994	1,642	25	104	265	251	253	209	257	70	123	68	13	5	419	976	246
1995	1,649	24	102	264	252	253	213	261	69	123	69	14	5	417	985	247
1996	1,663	24	101	264	251	257	218	266	69	123	71	14	5	416	999	249
1997	1,675	25	99	265	236	262	227	275	72	123	72	14	5	412	1,011	252
Males																
1971	755	16	64	152	127	95	81	116	36	45	19	2	1	246	441	67
1976	754	13	58	157	127	102	81	111	34	47	19	3	0	242	442	70
1981	754	14	53	145	140	102	87	109	32	50	20	3	1	227	454	73
1986	768	14	55	134	146	109	94	109	32	48	22	3	1	218	476	74
1991	781	13	54	133	132	119	100	118	32	52	24	3	1	213	487	81
1992	791	13	53	134	132	121	101	121	32	53	24	3	1	214	495	82
1993	797	13	54	135	129	124	102	124	33	54	25	3	1	214	500	83
1994	802	12	53	136	130	125	104	126	33	54	25	4	1	214	504	83
1995	805	12	52	135	130	125	105	128	32	54	26	4	1	214	508	84
1996	812	12	51	136	129	127	108	131	33	54	26	4	1	213	515	85
1997	821	13	51	136	123	130	112	136	34	55	27	4	1	211	523	86
Females																
1971	786	15	62	147	119	95	84	126	39	61	32	5	2	237	411	138
1976	769	13	53	149	116	96	81	120	38	64	33	6	2	229	398	143
1981	783	13	51	137	130	98	88	118	37	66	36	7	3	215	420	148
1986	798	13	52	128	133	108	95	116	37	64	40	7	3	208	439	152
1991	820	13	51	127	125	121	100	123	38	67	43	9	4	203	457	160
1992	828	13	51	128	124	124	101	126	38	68	43	9	4	204	463	162
1993	835	12	51	129	121	127	103	129	38	69	43	10	4	204	468	163
1994	840	12	51	129	121	128	105	131	37	69	43	10	4	205	472	163
1995	844	12	50	129	122	128	107	133	36	69	44	10	4	203	477	163
1996	851	12	49	129	121	130	111	135	36	69	45	10	4	203	484	164
1997	854	12	48	129	113	132	115	139	37	68	46	11	4	200	487	166

Table 1.6 **Population: age, sex and legal marital status** *England and Wales*
Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
Aged											
16 and over											
1971	36,818	4,173	12,522	187	682	17,563	3,583	12,566	296	2,810	19,255
1976	37,486	4,369	12,511	376	686	17,941	3,597	12,538	533	2,877	19,545
1981	38,724	5,013	12,238	611	698	18,559	4,114	12,284	828	2,939	20,165
1986	39,887	5,673	11,886	919	695	19,173	4,613	11,994	1,164	2,943	20,714
1991	40,796	6,024	11,745	1,200	731	19,699	4,822	11,838	1,459	2,978	21,097
1992	40,869	6,089	11,663	1,269	732	19,753	4,871	11,749	1,533	2,963	21,116
1993	40,925	6,147	11,580	1,342	732	19,801	4,906	11,661	1,610	2,946	21,124
1994	41,003	6,221	11,492	1,413	730	19,855	4,958	11,583	1,684	2,922	21,147
1995	41,167	6,345	11,415	1,480	729	19,968	5,058	11,488	1,754	2,898	21,199
1996	41,356	6,482	11,339	1,543	728	20,091	5,171	11,406	1,819	2,870	21,265
1997	41,540	6,622	11,256	1,604	726	20,209	5,292	11,319	1,882	2,838	21,331
16–19											
1971	2,666	1,327	34	0	0	1,362	1,163	142	0	0	1,305
1976	2,901	1,454	28	0	0	1,482	1,289	129	0	0	1,419
1981	3,310	1,675	20	0	0	1,694	1,523	93	0	0	1,616
1986	3,144	1,601	10	0	0	1,611	1,483	49	1	0	1,533
1991	2,680	1,372	8	0	0	1,380	1,267	32	0	0	1,300
1992	2,539	1,301	5	0	0	1,306	1,209	24	0	0	1,233
1993	2,421	1,242	4	0	0	1,246	1,157	18	0	0	1,175
1994	2,360	1,212	3	0	0	1,215	1,131	14	0	0	1,145
1995	2,374	1,220	3	0	0	1,222	1,139	13	0	0	1,152
1996	2,436	1,251	2	0	0	1,253	1,171	12	0	0	1,183
1997	2,517	1,291	2	0	0	1,293	1,212	11	0	0	1,224
20–24											
1971	3,773	1,211	689	3	0	1,904	745	1,113	9	2	1,869
1976	3,395	1,167	557	4	0	1,728	725	925	16	2	1,667
1981	3,744	1,420	466	10	1	1,896	1,007	811	27	2	1,847
1986	4,203	1,794	322	14	0	2,130	1,382	658	32	1	2,072
1991	3,966	1,764	249	12	0	2,025	1,421	490	29	1	1,941
1992	3,879	1,760	214	10	0	1,984	1,434	434	26	1	1,895
1993	3,770	1,742	182	8	0	1,933	1,432	381	23	1	1,838
1994	3,625	1,699	152	7	0	1,858	1,416	330	20	1	1,767
1995	3,495	1,658	127	6	0	1,791	1,404	282	17	0	1,703
1996	3,329	1,597	105	5	0	1,707	1,369	238	15	0	1,622
1997	3,177	1,536	87	4	0	1,628	1,333	204	12	0	1,549
25–29											
1971	3,267	431	1,206	16	1	1,654	215	1,367	29	4	1,614
1976	3,758	533	1,326	39	2	1,900	267	1,522	65	5	1,859
1981	3,372	588	1,057	54	1	1,700	331	1,247	89	4	1,671
1986	3,724	841	956	79	1	1,877	527	1,204	113	4	1,847
1991	4,246	1,183	894	85	1	2,163	800	1,158	123	2	2,083
1992	4,256	1,232	852	83	1	2,169	848	1,112	124	2	2,087
1993	4,220	1,263	807	80	1	2,152	880	1,062	124	2	2,069
1994	4,168	1,293	754	76	1	2,124	908	1,011	122	2	2,044
1995	4,094	1,326	696	70	1	2,092	936	947	116	2	2,002
1996	4,045	1,368	639	64	1	2,071	977	887	109	2	1,975
1997	3,972	1,401	577	58	1	2,037	1,014	818	101	2	1,935
30–34											
1971	2,897	206	1,244	23	3	1,475	111	1,269	34	8	1,422
1976	3,220	236	1,338	55	3	1,632	118	1,388	75	8	1,588
1981	3,715	318	1,451	97	3	1,869	165	1,544	129	9	1,846
1986	3,341	356	1,200	125	2	1,683	206	1,292	154	6	1,658
1991	3,762	535	1,206	160	2	1,903	335	1,330	189	5	1,859
1992	3,882	596	1,202	167	2	1,968	375	1,336	198	5	1,914
1993	3,999	662	1,194	174	2	2,032	418	1,338	205	5	1,967
1994	4,126	732	1,187	179	2	2,100	467	1,340	213	5	2,025
1995	4,235	799	1,177	182	2	2,160	518	1,333	218	5	2,075
1996	4,296	855	1,155	181	2	2,194	560	1,316	221	5	2,103
1997	4,318	903	1,125	177	3	2,207	598	1,287	222	5	2,111
35–44											
1971	5,736	317	2,513	48	13	2,891	201	2,529	66	48	2,845
1976	5,608	286	2,442	104	12	2,843	167	2,427	129	42	2,765
1981	5,996	316	2,519	178	12	3,024	170	2,540	222	41	2,972
1986	6,863	397	2,743	293	12	3,444	213	2,816	350	39	3,419
1991	7,056	482	2,658	388	12	3,539	280	2,760	444	34	3,517
1992	6,924	497	2,561	403	11	3,472	295	2,669	456	32	3,452
1993	6,887	522	2,500	423	12	3,456	316	2,612	473	31	3,431
1994	6,925	556	2,463	444	12	3,475	343	2,587	491	29	3,449
1995	7,003	601	2,446	464	12	3,523	374	2,568	509	29	3,480
1996	7,146	657	2,449	483	13	3,602	414	2,575	527	28	3,544
1997	7,325	725	2,458	503	13	3,700	459	2,593	545	28	3,625

Note: Population estimates by marital status for 1971 and 1976 are based on the 1971 Census and those for 1981 and 1986 are based on the 1981 Census and have not been rebased using the 1991 Census.

Table 1.6 continued **Population: age, sex and legal marital status** *England and Wales*
Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
45–64											
1971	11,887	502	4,995	81	173	5,751	569	4,709	125	733	6,136
1976	11,484	496	4,787	141	160	5,583	462	4,568	188	683	5,901
1981	11,040	480	4,560	218	147	5,405	386	4,358	271	620	5,635
1986	10,860	461	4,423	332	141	5,356	326	4,221	388	569	5,504
1991	10,960	456	4,394	456	127	5,433	292	4,211	521	503	5,527
1992	11,228	468	4,479	499	125	5,571	295	4,308	568	487	5,658
1993	11,436	479	4,532	544	122	5,677	297	4,376	615	471	5,759
1994	11,596	489	4,564	587	120	5,759	300	4,422	659	456	5,837
1995	11,730	500	4,581	630	119	5,830	305	4,452	703	440	5,900
1996	11,844	512	4,587	673	118	5,890	310	4,473	746	425	5,954
1997	11,959	524	4,590	715	117	5,946	318	4,494	789	412	6,013
65 and over											
1971	6,592	179	1,840	17	492	2,527	580	1,437	32	2,016	4,065
1976	7,119	197	2,033	33	510	2,773	569	1,579	60	2,138	4,347
1981	7,548	216	2,167	54	534	2,971	533	1,692	90	2,263	4,578
1986	7,752	223	2,233	76	539	3,070	475	1,754	127	2,325	4,681
1991	8,127	231	2,337	99	589	3,257	427	1,858	153	2,433	4,870
1992	8,162	235	2,349	106	593	3,283	416	1,866	161	2,436	4,879
1993	8,191	237	2,360	113	596	3,306	405	1,873	170	2,436	4,885
1994	8,203	239	2,368	121	595	3,323	393	1,879	179	2,429	4,880
1995	8,237	241	2,385	128	595	3,349	382	1,893	190	2,422	4,887
1996	8,259	242	2,401	137	594	3,375	370	1,904	201	2,410	4,884
1997	8,272	242	2,417	147	593	3,399	358	1,912	213	2,390	4,873

See note opposite.

Table 2.1 **Vital statistics summary** *Constituent countries of the United Kingdom*
Numbers (thousands) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Divorces		Deaths		Infant mortality***		Neonatal mortality†††		Perinatal mortality****	
	Number	Rate*	Number	Rate†	Number	Rate**	Number	Rate††	Number	Rate*	Number	Rate†	Number	Rate†	Number	Rate††††
United Kingdom																
1971	901.6	16.1	73.9	82	459.4	..	79.6	..	645.1	11.5	16.2	17.9	10.8	12.0	20.7	22.6
1976	675.5	12.0	61.1	90	406.0	..	135.4	..	680.8	12.1	9.79	14.5	6.68	9.9	12.3	18.0
1981	730.8	13.0	91.3	125	397.8	49.4	156.4	11.3	658.0	11.7	8.16	11.2	4.93	6.7	8.79	12.0
1986	755.0	13.3	158.5	210	393.9	43.5	168.2	12.5	660.7	11.6	7.18	9.5	4.00	5.3	7.31	9.6
1991	792.5	13.7	236.1	298	349.7	36.0	173.5	13.0	646.2	11.3	5.82	7.4	3.46	4.4	6.45	8.1
1992	781.0	13.5	240.8	308	356.0	..	175.1	..	634.2	10.9	5.14	6.6	3.37	4.3	6.01	7.7
1993	761.7	13.1	241.8	318	341.6	..	180.0	..	658.5	11.3	4.83	6.3	3.18	4.2	6.73	8.8
1994	750.7	12.9	240.1	320	331.2	..	173.6	..	627.6	10.7	4.63	6.2	3.09	4.1	6.74	9.0
1995	732.0	12.5	245.7	336	322.3	..	170.0	..	645.5	11.0	4.52	6.2	3.05	4.2	6.52	8.9
1996	733.4	12.5	260.4	355	317.5	..	171.7	..	636.0	10.8	4.50	6.1	3.00	4.1	6.41	8.7
1997	725.8	12.3	266.7	367	310.2‡	..	161.1‡	..	629.7	10.7	4.25	5.9	2.81	3.9	6.06	8.3
1998	715.3‡	12.1‡	269.0‡	376‡					627.6‡	10.6‡	4.06‡	5.7‡	2.70‡	3.8‡	5.92‡	8.2‡
1997 March	178.4	12.3	65.5	367	39.3‡	..			182.7	12.6	1.10	6.1	0.70	3.9	1.53	8.5
1997 June	184.7	12.6	66.2	358	87.1‡	..			146.6	10.0	1.10	6.0	0.73	4.0	1.53	8.2
1997 Sept	185.8	12.5	68.7	370	128.9‡	..			141.2	9.5	1.01	5.4	0.69	3.7	1.49	8.0
1997 Dec	176.9	11.9	66.3	375	54.9‡	..			159.3	10.7	1.08	6.1	0.71	4.0	1.53	8.6
1998 March	175.5‡	12.1‡	65.5‡	374‡	37.4‡	..			166.7‡	11.5‡	1.02‡	5.8‡	0.67‡	3.8‡	1.51‡	8.5‡
1998 June	178.7‡	12.2‡	65.5‡	366‡					152.3‡	10.4‡	0.97‡	5.4‡	0.65‡	3.7‡	1.45‡	8.1‡
1998 Sept	186.8‡	12.6‡	70.6‡	378‡					143.1‡	9.6‡	0.98‡	5.2‡	0.68‡	3.6‡	1.44‡	7.7‡
1998 Dec	174.3‡	11.7‡	67.4‡	387‡					165.4‡	11.1‡	1.10‡	6.3‡	0.70‡	4.0‡	1.53‡	8.7‡
England and Wales																
1971	783.2	15.9	65.7	84	404.7	69.0	74.4	5.9	567.3	11.5	13.7	17.5	9.11	11.6	17.6	22.3
1976	584.3	11.8	53.8	92	358.6	57.7	126.7	10.1	598.5	12.1	8.34	14.3	5.66	9.7	10.5	17.7
1981	634.5	12.8	81.0	128	352.0	49.6	145.7	11.9	577.9	11.6	7.02	11.1	4.23	6.7	7.56	11.8
1986	661.0	13.2	141.3	214	347.9	43.5	153.9	12.9	581.2	11.6	6.31	9.6	3.49	5.3	6.37	9.6
1991	699.2	13.7	211.3	302	306.8	35.6	158.7	13.5	570.0	11.2	5.16	7.4	3.05	4.4	5.65	8.0
1992	689.7	13.4	215.2	312	311.6	35.8	160.4	13.7	558.3	10.9	4.54	6.6	2.96	4.3	5.24	7.6
1993	673.5	13.1	216.5	322	299.2	33.9	165.0	14.2	578.8	11.3	4.24	6.3	2.80	4.2	6.03	8.9
1994	664.7	12.9	215.5	324	291.1	32.6	158.2	13.7	553.2	10.7	4.10	6.2	2.74	4.1	5.95	8.9
1995	648.1	12.5	219.9	339	283.0	31.0	155.5	13.6	569.7	11.0	3.98	6.1	2.70	4.2	5.70	8.8
1996	649.5	12.5	232.7	358	279.0	30.0	157.1	13.8	560.1	10.8	3.99	6.1	2.68	4.1	5.62	8.6
1997	642.1	12.3	237.9	370	272.5‡	28.7‡	146.7‡	13.0‡	555.3	10.6	3.80	5.9	2.52	3.9	5.38	8.3
1998	634.5‡	12.2‡	240.0‡	378					553.4‡	10.6‡	3.61‡	5.7‡	2.41‡	3.8‡	5.25‡	8.2‡
1997 March	158.1	12.3	58.5	370	34.9‡	14.9‡	34.9‡	12.5‡	161.9	12.6	0.98	6.2	0.63	4.0	1.36	8.6
1997 June	162.9	12.5	58.8	361	76.7‡	32.4‡	39.6‡	14.1‡	128.6	9.9	0.99	6.0	0.65	4.0	1.36	8.3
1997 Sept	164.4	12.5	61.3	373	113.2‡	47.4‡	37.2‡	13.1‡	124.3	9.4	0.91	5.5	0.62	3.8	1.32	8.0
1997 Dec	156.7	11.9	59.3	378	47.7‡	19.9‡	35.0‡	12.3‡	140.4	10.7	0.96	6.1	0.64	4.1	1.36	8.6
1998 March	155.4‡	12.1‡	58.4‡	375‡	33.2‡	14.2‡	37.0‡	13.3‡	146.9‡	11.4‡	0.93‡	6.0‡	0.60‡	3.9‡	1.34‡	8.6‡
1998 June	158.3‡	12.2‡	58.3‡	368‡			36.6‡	13.0‡	134.0‡	10.3‡	0.83‡	5.3‡	0.57‡	3.6‡	1.28‡	8.1‡
1998 Sept	165.8‡	12.6‡	63.1‡	381‡					125.8‡	9.6‡	0.86‡	5.2‡	0.60‡	3.6‡	1.26‡	7.5‡
1998 Dec	154.9‡	11.8‡	60.2‡	389‡					146.6‡	11.1‡	0.99‡	6.4‡	0.64‡	4.1‡	1.37‡	8.8‡
England																
1971	740.1	15.9	62.6	85	382.3	..	..	..	532.4	11.5	12.9	17.5	8.58	11.6	16.6	22.1
1976	550.4	11.8	50.8	92	339.0	..	..	..	560.3	12.0	7.83	14.2	5.32	9.7	9.81	17.6
1981	598.2	12.8	76.9	129	332.2	..	..	..	541.0	11.6	6.50	10.9	3.93	6.6	7.04	11.7
1986	623.6	13.2	133.5	214	328.4	..	146.0	..	544.5	11.5	5.92	9.5	3.27	5.2	5.98	9.5
1991	660.8	13.7	198.9	301	290.1	..	150.1	..	534.0	11.2	4.86	7.3	2.87	4.3	5.33	8.0
1992	651.8	13.5	202.4	311	295.0	..	151.5	..	522.7	10.8	4.26	6.5	2.79	4.3	4.95	7.6
1993	636.5	13.1	203.6	320	283.3	..	156.1	..	541.1	11.1	4.00	6.3	2.65	4.2	5.70	8.9
1994	629.0	13.0	202.7	322	275.5	..	149.6	..	517.6	10.6	3.83	6.1	2.57	4.1	5.58	8.8
1995	613.2	12.5	206.8	337	268.3	..	147.5	..	532.6	10.9	3.74	6.1	2.55	4.2	5.41	8.8
1996	614.2	12.5	218.2	355	264.2	..	148.7	..	524.0	10.7	3.74	6.1	2.53	4.1	5.36	8.7
1997	607.2	12.3	223.0	367	258.0‡	..	138.7‡	..	519.1	10.5	3.60	5.9	2.37	3.9	5.09	8.3
1998	601.1‡	12.2‡	225.2‡	375‡					518.1‡	10.5‡	3.37‡	5.6‡	2.28‡	3.8‡	4.96‡	8.2‡
1997 March	149.3	12.3	54.8	367	33.1‡	..	33.0‡	..	151.5	12.5	0.91	6.1	0.58	3.9	1.29	8.6
1997 June	154.2	12.6	55.1	358	72.7‡	..	37.5‡	..	120.1	9.8	0.91	5.9	0.61	3.9	1.28	8.2
1997 Sept	155.5	12.5	57.6	370	107.0‡	..	35.1‡	..	116.1	9.3	0.86	5.5	0.60	3.8	1.26	8.0
1997 Dec	148.2	11.9	55.5	374	45.1‡	..	33.1‡	..	131.4	10.6	0.91	6.1	0.61	4.1	1.28	8.6
1998 March	147.2‡	12.1‡	54.8‡	372‡	31.4‡	..	35.0‡	..	137.6‡	11.3‡	0.87‡	5.9‡	0.57‡	3.9‡	1.26‡	8.5‡
1998 June	150.0‡	12.2‡	54.8‡	365‡			34.6‡		125.4‡	9.6‡	0.77‡	5.2‡	0.54‡	3.6‡	1.21‡	8.0‡
1998 Sept	157.1‡	12.6‡	59.2‡	377‡					117.6‡	8.9‡	0.79‡	5.1‡	0.56‡	3.5‡	1.18‡	7.5‡
1998 Dec	146.9‡	11.8‡	56.5‡	384‡					137.5‡	10.4‡	0.94‡	6.4‡	0.61‡	4.2‡	1.31‡	8.8‡

* Per 1,000 population of all ages. † Per 1,000 live births. ** Persons marrying per 1,000 unmarried population 16 and over. †† Per 1,000 married population. *** Deaths under 1 year. ††† Deaths under 4 weeks. **** Stillbirths and deaths under 1 week. In October 1992 the legal definition of a stillbirth was changed, from baby born dead after 28 completed weeks of gestation or more, to one born dead after 24 completed weeks of gestation or more. †††† Per 1,000 live and stillbirths. ‡ Provisional.

Table 2.1 continued **Vital statistics summary** *Constituent countries of the United Kingdom*
Numbers (thousands) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Divorces		Deaths		Infant mortality***		Neonatal mortality†††		Perinatal mortality****	
	Number	Rate*	Number	Rate†	Number	Rate**	Number	Rate††	Number	Rate*	Number	Rate†	Number	Rate†	Number	Rate††††
Wales																
1971	43.1	15.7	3.1	71	22.4	..	..	..	34.8	12.7	0.79	18.4	0.53	12.3	1.07	24.4
1976	33.4	11.9	2.9	86	19.5	..	..	..	36.3	13.0	0.46	13.7	0.32	9.6	0.64	19.0
1981	35.8	12.7	4.0	112	19.8	..	..	..	35.0	12.4	0.45	12.6	0.29	8.1	0.51	14.1
1986	37.0	13.1	7.8	211	19.5	..	7.9	..	34.7	12.3	0.35	9.5	0.21	5.6	0.38	10.3
1991	38.1	13.2	12.3	323	16.6	..	8.6	..	34.1	11.8	0.25	6.6	0.16	4.1	0.30	7.9
1992	37.5	12.9	12.8	340	16.6	..	8.9	..	33.8	11.7	0.23	6.0	0.14	3.8	0.26	7.0
1993	36.6	12.6	12.9	352	15.9	..	8.9	..	35.9	12.4	0.20	5.5	0.12	3.3	0.30	8.2
1994	35.4	12.2	12.7	360	15.5	..	8.6	..	33.9	11.6	0.22	6.1	0.14	4.1	0.33	9.3
1995	34.5	11.8	13.1	381	14.7	..	8.0	..	35.6	12.2	0.20	5.9	0.13	3.9	0.27	7.9
1996	34.9	11.9	14.4	412	14.8	..	8.4	..	34.6	11.8	0.20	5.6	0.13	3.6	0.26	7.5
1997	34.5	11.8	14.8	428	14.6‡	..	8.0‡	..	34.6	11.8	0.20	5.9	0.13	3.9	0.27	7.9
1998	33.4‡	11.4‡	14.8‡	443‡					33.9‡	11.6‡	0.19‡	5.7‡	0.12‡	3.7‡	0.27‡	8.0‡
1997 March	8.7	12.0	3.7	427	1.8‡	..	1.9‡	..	10.1	14.0	0.06	6.8	0.04	4.6	0.06	7.4
1997 June	8.6	11.8	3.6	422	4.0‡	..	2.1‡	..	8.1	11.1	0.06	7.4	0.05	5.2	0.08	9.4
1997 Sept	8.8	12.0	3.7	420	6.2‡	..	2.0‡	..	7.7	10.5	0.04	4.9	0.02	2.5	0.06	7.2
1997 Dec	8.4	11.4	3.7	446	2.5‡	..	1.9‡	..	8.7	11.8	0.04	4.5	0.03	3.3	0.07	7.7
1998 March	8.3‡	11.4‡	3.6‡	435‡	1.8‡	..	2.0‡	..	9.0‡	12.5‡	0.04‡	5.3‡	0.03‡	3.4‡	0.07‡	7.9‡
1998 June	8.4‡	11.4‡	3.6‡	428‡			2.0‡	..	8.3‡	11.3‡	0.04‡	5.3‡	0.03‡	3.7‡	0.07‡	8.5‡
1998 Sept	8.8‡	11.9‡	3.9‡	444‡					7.8‡	10.6‡	0.05‡	5.9‡	0.04‡	4.3‡	0.08‡	8.5‡
1998 Dec	8.0‡	10.9‡	3.7‡	467‡					8.8‡	12.0‡	0.05‡	6.1‡	0.03‡	3.1‡	0.06‡	7.1‡
Scotland																
1971	86.7	16.6	7.0	81	42.5	64.1	4.8	3.9	61.6	11.8	1.72	19.9	1.17	13.5	2.15	24.5
1976	64.9	12.5	6.0	93	37.5	53.8	8.1	6.5	65.3	12.5	0.96	14.8	0.67	10.3	1.20	18.3
1981	69.1	13.4	8.5	122	36.2	47.5	9.9	8.0	63.8	12.3	0.78	11.3	0.47	6.9	0.81	11.6
1986	65.8	12.9	13.6	206	35.8	42.8	12.8	10.7	63.5	12.4	0.58	8.8	0.34	5.2	0.67	10.2
1991	67.0	13.1	19.5	291	33.8	38.7	12.4	10.6	61.0	12.0	0.47	7.1	0.29	4.4	0.58	8.6
1992	65.8	12.9	20.0	303	35.1	39.9	12.5	10.7	60.9	11.9	0.45	6.8	0.30	4.6	0.60	9.0
1993	63.3	12.4	19.9	313	33.4	37.6	12.8	11.0	64.0	12.5	0.41	6.5	0.25	4.0	0.61	9.6
1994	61.7	12.0	19.2	312	31.5	35.1	13.1	11.4	59.3	11.6	0.38	6.2	0.25	4.0	0.56	9.0
1995	60.1	11.7	20.3	337	30.7	33.7	12.2	10.7	60.5	11.8	0.38	6.2	0.24	4.0	0.58	9.6
1996	59.3	11.6	21.4	360	30.2	32.8	12.3	10.9	60.7	11.8	0.37	6.2	0.23	3.9	0.55	9.2
1997	59.4	11.6	22.4	377	29.6	31.7	12.2	11.0	59.5	11.6	0.32	5.3	0.19	3.2	0.47	7.8
1998	57.2‡	11.2‡	22.3‡	389	29.6‡	31.6‡	12.3‡	11.0‡	59.2‡	11.6‡	0.32‡	5.5‡	0.20‡	3.5‡	0.49‡	8.5‡
1997 March	14.3	11.3	5.4	376	3.4	14.7	2.8	10.2	16.6	13.1	0.10	6.7	0.06	3.9	0.12	8.4
1997 June	15.4	12.1	5.6	370	8.3	35.6	3.3	11.7	14.4	11.3	0.09	5.7	0.05	3.4	0.11	7.3
1997 Sept	15.2	11.7	5.7	379	12.1	51.4	3.1	11.1	13.4	10.4	0.06	4.0	0.04	2.8	0.11	7.4
1997 Dec	14.6	11.3	5.6	382	5.8	24.6	3.0	10.8	15.1	11.7	0.07	4.9	0.04	2.6	0.12	8.1
1998 March	14.2‡	11.2‡	5.5‡	389‡	3.5‡	15.0‡			15.7‡	12.5‡	0.06‡	4.2‡	0.04‡	2.8‡	0.12‡	8.1‡
1998 June	14.3‡	11.2‡	5.5‡	383‡	8.4‡	35.9‡			14.4‡	11.3‡	0.09‡	6.4‡	0.06‡	4.0‡	0.12‡	8.5‡
1998 Sept	14.8‡	11.5‡	5.7‡	384‡	11.9‡	50.6‡			13.8‡	10.7‡	0.09‡	5.7‡	0.06‡	4.1‡	0.13‡	9.0‡
1998 Dec	13.9‡	10.8‡	5.6‡	402‡	5.8‡	24.6‡			15.2‡	11.8‡	0.08‡	5.9‡	0.05‡	3.2‡	0.12‡	8.3‡
Northern Ireland																
1971	31.8	20.7	1.2	38	12.2	..	0.3	..	17.6	12.8	0.72	22.7	0.51	15.9	0.88	27.2
1976	26.4	17.3	1.3	50	9.9	..	0.6	..	17.0	11.2	0.48	18.3	0.35	13.3	0.59	22.3
1981	27.3	17.8	1.9	70	9.6	45.4	1.4	4.2	16.3	10.6	0.36	13.2	0.23	8.3	0.42	15.3
1986	28.2	18.0	3.6	127	10.2	..	1.5	..	16.1	10.3	0.36	13.2	0.23	8.3	0.42	15.3
1991	26.3	16.5	5.3	202	9.2	37.7	2.3	6.8	15.1	9.4	0.19	7.4	0.12	4.6	0.22	8.4
1992	25.6	15.9	5.6	219	9.4	..	2.3	..	15.0	9.3	0.15	6.0	0.10	4.1	0.21	8.2
1993	24.9	15.3	5.5	219	9.0	..	2.2	..	15.6	9.6	0.18	7.1	0.12	4.9	0.22	8.8
1994	24.3	14.9	5.4	220	8.7	..	2.3	..	15.1	9.2	0.15	6.1	0.10	4.2	0.24	9.7
1995	23.9	14.5	5.5	231	8.6	..	2.3	..	15.3	9.3	0.17	7.1	0.13	5.5	0.25	10.4
1996	24.6	14.8	6.4	259	8.3	..	2.3	..	15.2	9.1	0.14	5.8	0.09	3.7	0.23	9.4
1997	24.3	14.5	6.4	266	8.1	..	2.2	..	15.0	9.0	0.14	5.6	0.10	4.2	0.21	8.6
1998	23.6‡	14.2‡	6.7‡	285‡					15.0‡	8.9‡	0.13‡	5.6‡	0.09‡	3.9‡	0.20‡	8.1‡
1997 March	6.1	14.7	1.6	269	1.0	..			4.2	10.2	0.02	3.6	0.02	3.1	0.05	7.6
1997 June	6.3	15.2	1.7	261	2.1	..			3.6	8.7	0.05	4.9	0.02	3.6	0.06	8.8
1997 Sept	6.3	14.8	1.7	269	3.6	..			3.4	8.2	0.04	5.7	0.03	4.2	0.05	8.1
1997 Dec	5.6	13.3	1.5	264	1.4	..			3.7	8.9	0.05	8.6	0.03	6.1	0.06	10.3
1998 March	5.9‡	14.3‡	1.7‡	286‡	0.8‡	..			4.1‡	9.9‡	0.04‡	5.8‡	0.03‡	4.3‡	0.05‡	8.8‡
1998 June	6.1‡	14.8‡	1.7‡	272‡	2.2‡	..			3.8‡	9.2‡	0.04‡	7.1‡	0.03‡	4.4‡	0.05‡	7.7‡
1998 Sept	6.2‡	14.7‡	1.8‡	288‡					3.5‡	8.2‡	0.03‡	5.5‡	0.02‡	3.5‡	0.05‡	8.0‡
1998 Dec	5.5‡	13.1‡	1.6‡	294‡					3.6‡	8.5‡	0.02‡	4.0‡	0.02‡	3.3‡	0.05‡	8.2‡

Notes: 1. Rates for the most recent quarters will be particularly subject to revision, even when standard detail is given, as they are based on provisional numbers or on estimates derived from events registered in the period. 2. Figures for England and Wales represent the numbers of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993. Provisional figures are registrations. 3. The marriage and divorce rates for 1991 onwards differ in part from those previously published because of a revision of the denominators. 4. From 1972 births for England and Wales are excluded if the mother was usually resident outside England and Wales, but included in the total for the United Kingdom. 5. From 1972 deaths for England and for Wales separately exclude deaths to persons usually resident outside England and Wales, but these deaths are included in the totals for England and Wales combined, and the United Kingdom.

Table 2.2 **Key demographic and health indicators** *Constituent countries of the United Kingdom*
Numbers (thousands), rates, percentages, mean age

				Dependency ratio		Live births				Expectation of life (in years) at birth		
	Population	Live births	Deaths	Children*	Elderly†	TPFR**	Outside marriage as percentage of total live births	Mean age of mother at birth (years)	Age-standardised mortality rate††	Males	Females	Infant mortality rate***
United Kingdom												
1971	55,928.0	901.6	645.1	43.8	28.0	2.41	8.2	26.2	10,448	68.8	75.0	17.9
1976	56,216.1	675.5	680.8	42.1	29.5	1.74	9.0	26.4	10,486	69.6	75.2	14.5
1981	56,352.2	730.8	658.0	37.1	29.7	1.82	12.5	26.8	9,506	70.8	76.8	11.2
1986	56,851.9	755.0	660.7	33.5	29.6	1.78	21.0	27.0	8,897	71.9	77.7	9.5
1991	57,807.9	792.5	646.2	33.1	29.9	1.82	29.8	27.6	8,107	73.2	78.8	7.4
1992	58,006.5	781.0	634.2	33.3	29.9	1.79	30.8	27.9	7,860	73.4	78.9	6.6
1993	58,191.2	761.7	658.5	33.6	29.9	1.76	31.8	28.1	8,037	73.7	79.1	8.3
1994	58,394.6	750.7	627.6	33.8	29.8	1.74	32.0	28.4	7,622	73.9	79.2	6.2
1995	58,605.8	732.0	645.5	33.8	29.7	1.71	33.6	28.5	7,706	74.1	79.4	6.2
1996	58,801.5	733.4	636.0	33.6	29.6	1.72	35.5	28.6	7,522	74.2‡	79.5‡	6.1
1997	59,008.6	725.8	629.7	33.4	29.5	1.72	36.7	28.8	7,370			5.9‡
1998		715.3‡	627.6‡				37.6‡		7,344‡			
England												
1971	46,411.7	740.1	532.4	42.9	28.1	2.37	8.5		10,278			17.5
1976	46,659.9	550.4	560.3	41.4	29.7	1.70	9.2	26.4	10,271			14.2
1981	46,820.8	598.2	541.0	36.4	29.9	1.79	12.9	26.8	9,298	71.1	77.0	10.9
1986	47,342.4	623.6	544.5	33.1	29.8	1.87	21.4	27.0	8,694	72.0	77.9	9.5
1991	48,208.1	660.8	534.0	32.8	29.9	1.81	30.1	27.7	7,941	73.4	79.0	7.3
1992	48,378.3	651.8	522.7	33.1	30.0	1.79	31.1	27.9	7,678	73.7	79.1	6.5
1993	48,532.7	636.5	541.1	33.4	29.9	1.76	32.0	28.1	7,825	74.0	79.3	6.3
1994	48,707.5	629.0	517.6	33.6	29.8	1.74	32.2	28.4	7,440	74.1	79.4	6.1
1995	48,903.4	613.2	532.6	33.6	29.8	1.71	33.7	28.6	7,526	74.4	79.6	6.1
1996	49,089.1	614.2	524.0	33.4	29.6	1.73	35.5	28.7	7,333	74.6‡	79.7‡	6.1
1997	49,284.2	607.2	519.1	33.3	29.5	1.72	36.7	28.8	7,190			5.9‡
1998		601.1‡	518.1‡				37.5‡		7,175‡			
Wales												
1971	2,740.3	43.1	34.8	43.4	29.8	2.44	7.2		11,175			18.4
1976	2,799.3	33.4	36.3	42.0	30.9	1.79	8.7	26.0	10,858			13.7
1981	2,813.5	35.8	35.0	37.6	31.6	1.87	11.2	26.6	9,846	70.4	76.4	12.6
1986	2,819.6	37.0	34.7	34.4	32.5	1.86	21.1	26.5	9,012	71.6	77.6	9.5
1991	2,891.5	38.1	34.1	34.4	33.4	1.88	32.3	27.0	8,074	73.2	78.9	6.6
1992	2,898.5	37.5	33.8	34.6	33.6	1.87	34.0	27.3	7,886	73.3	78.9	6.0
1993	2,906.5	36.6	35.9	34.9	33.6	1.84	35.2	27.4	8,227	73.5	79.0	5.5
1994	2,913.0	35.4	33.9	35.1	33.6	1.79	36.0	27.7	7,753	73.5	79.0	6.1
1995	2,916.8	34.5	35.6	35.0	33.6	1.78	38.1	27.8	7,953	73.8	79.2	5.8
1996	2,921.1	34.9	34.6	34.7	33.5	1.82	41.2	27.8	7,664	74.0‡	79.2‡	5.6
1997	2,926.9	34.5	34.6	34.5	33.5	1.82	42.8	28.0	7,578			5.9‡
1998		33.4‡	33.9‡				44.3‡		7,419‡			
Scotland												
1971	5,235.6	86.7	61.6	48.2	27.1	2.53	8.1		11,444	67.3	73.7	19.9
1976	5,233.4	64.9	65.3	44.7	28.4	1.80	9.3	26.0	11,675	68.2	74.4	14.8
1981	5,180.2	69.1	63.8	38.2	28.4	1.84	12.2	26.3	10,849	69.1	75.3	11.3
1986	5,123.0	65.8	63.5	33.5	28.0	1.67	20.6	26.6	10,135	70.2	76.2	8.8
1991	5,107.0	67.0	61.0	32.2	28.7	1.70	29.1	27.4	9,254	71.4	77.1	7.1
1992	5,111.2	65.8	60.9	32.3	28.7	1.67	30.3	27.7	9,146	71.5	77.1	6.8
1993	5,120.2	63.3	64.0	32.5	28.7	1.62	31.3	27.9	9,529	71.7	77.3	6.5
1994	5,132.4	61.7	59.3	32.6	28.6	1.58	31.2	28.2	8,840	71.9	77.4	6.2
1995	5,136.6	60.1	60.5	32.5	28.7	1.55	33.7	28.4	8,887	72.1	77.6	6.2
1996	5,128.0	59.3	60.7	32.3	28.7	1.55	36.0	28.5	8,868	72.2‡	77.8‡	6.2
1997	5,122.5	59.4	59.5	32.0	28.8	1.57	37.7	28.6	8,623			5.3‡
1998		57.2‡	59.2‡				38.9‡		8,595‡			
Northern Ireland												
1971	1,540.4	31.8	17.6	56.6	24.0	3.13	3.8		11,607	67.6	73.7	22.7
1976	1,523.5	26.4	17.0	56.1	25.3	2.70	5.0	27.4	11,746	67.5	73.8	18.3
1981	1,537.7	27.3	16.3	50.6	25.3	2.60	7.0	27.6	10,567	69.1	75.4	13.2
1986	1,566.8	28.2	16.1	46.5	24.7	2.46	12.7	27.6	10,071	70.6	76.7	10.2
1991	1,601.4	26.3	15.1	44.0	25.6	2.18	20.2	28.0	8,564	72.3	78.1	7.4
1992	1,618.4	25.6	15.0	43.6	25.4	2.09	21.9	28.1	8,347	72.5	78.3	6.0
1993	1,631.8	24.9	15.6	43.3	25.4	2.01	21.9	28.4	8,600	72.8	78.4	7.1
1994	1,641.7	24.3	15.1	42.9	25.2	1.95	22.0	28.6	8,256	72.9	78.4	6.1
1995	1,649.0	23.9	15.3	42.3	25.1	1.91	23.1	28.8	8,255	73.3	78.7	7.1
1996	1,663.3	24.6	15.2	41.6	24.9	1.95	25.9	28.8	8,057	73.6‡	78.9‡	5.8
1997	1,675.0	24.3	15.0	40.8	25.0	1.93	26.6	29.0	7,810			5.6‡
1998		23.6‡	15.0‡				28.5‡		7,811‡			

‡ Provisional.
* Percentage of children under 16 to working population (males 16–64 and females 16–59).
† Percentage of males 65 and over and females 60 and over to working population (males 16–64 and females 16–59).
** TPFR (the total period fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life.
†† Per million population. The age-standardised mortality rate makes allowances for changes in the age structure of the population. See Notes to tables.
***Deaths under one year per 1,000 live births.
Notes: 1. Some of these indicators are also in other tables. They are brought together to make comparison easier.
2. Figures for England and Wales represent the number of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993.

Table 3.1 **Live births: age of mother** *England and Wales*
Numbers (thousands), rates, mean age and TPFRs

Year and quarter		Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean age (years)	TPFR†
		Total live births (numbers)							Age-specific fertility rates*								
1961		811.3	59.8	249.8	248.5	152.3	77.5	23.3	89.2	37.3	172.6	176.9	103.1	48.1	15.0	27.6	2.77
1964(max)†		876.0	76.7	276.1	270.7	153.5	75.4	23.6	92.9	42.5	181.6	187.3	107.7	49.8	13.7	27.2	2.93
1966		849.8	86.7	285.8	253.7	136.4	67.0	20.1	90.5	47.7	176.0	174.0	97.3	45.3	12.5	26.8	2.75
1971		783.2	82.6	285.7	247.2	109.6	45.2	12.7	83.5	50.6	152.9	153.2	77.1	32.8	8.7	26.2	2.37
1976		584.3	57.9	182.2	220.7	90.8	26.1	6.5	60.4	32.2	109.3	118.7	57.2	18.6	4.8	26.4	1.71
1977(min)†		569.3	54.5	174.5	207.9	100.8	25.5	6.0	58.1	29.4	103.7	117.5	58.6	18.2	4.4	26.5	1.66
1981		634.5	56.6	194.5	215.8	126.6	34.2	6.9	61.3	28.1	105.3	129.1	68.6	21.7	4.9	26.8	1.80
1986		661.0	57.4	192.1	229.0	129.5	45.5	7.6	60.6	30.1	92.7	124.0	78.1	24.6	4.8	27.0	1.77
1991		699.2	52.4	173.4	248.7	161.3	53.6	9.8	63.6	33.0	89.3	119.4	86.7	32.1	5.3	27.7	1.82
1992		689.7	47.9	163.3	244.8	166.8	56.7	10.2	63.5	31.7	86.2	117.3	87.2	33.4	5.8	27.9	1.80
1993		673.5	45.1	152.0	236.0	171.1	58.8	10.5	62.6	31.0	82.7	114.1	87.0	34.1	6.2	28.1	1.76
1994		664.7	42.0	140.2	229.1	179.6	63.1	10.7	61.9	29.0	79.4	112.1	88.7	35.8	6.4	28.4	1.75
1995		648.1	41.9	130.7	217.4	181.2	65.5	11.3	60.4	28.5	76.8	108.6	87.3	36.2	6.8	28.5	1.72
1996		649.5	44.7	125.7	211.1	186.4	69.5	12.1	60.5	29.8	77.5	106.9	88.6	37.2	7.2	28.6	1.73
1997		642.1	46.3	118.4	202.5	187.2	74.8	12.9	59.7	30.2	76.4	104.6	88.7	38.8	7.6	28.8	1.73
1998‡		634.5	48.2	113.2	192.7	188.1	78.7	13.5	59.0	30.7	75.3	102.4	89.7	39.8	7.8	28.9	1.72
1996	Dec	164.2	12.0	32.1	52.6	46.6	17.7	3.2	61.9	32	82	109	90	38	8	28.6	1.79
1997	March	158.1	11.5	29.8	50.4	45.6	17.7	3.1	60.6	31	78	107	89	38	8	28.7	1.75
	June	162.9	11.3	29.5	51.5	48.3	19.2	3.3	60.4	29	75	106	91	40	8	28.9	1.74
	Sept	164.4	11.8	30.3	51.9	48.0	19.2	3.3	59.1	30	76	104	88	38	7	28.8	1.71
	Dec	156.7	11.8	29.0	48.7	45.3	18.7	3.2	58.7	31	76	102	87	39	8	28.8	1.71
1998	March‡	155.4	11.7	27.7	47.8	46.1	18.8	3.3	59.3	31	75	103	90	39	8	28.9	1.73
	June‡	158.3	11.4	27.4	48.5	48.0	19.7	3.3	58.7	29	72	102	91	40	8	29.0	1.71
	Sept‡	165.8	12.6	29.7	50.5	48.8	20.7	3.6	59.4	31	76	104	90	40	8	28.9	1.74
	Dec‡	154.9	12.4	28.4	45.9	45.2	19.6	3.4	58.4	32	77	100	88	40	8	28.9	1.72

* Births per 1,000 women in the age-group; all quarterly rates and total period fertility rates (TPFRs) are seasonally adjusted.
† TPFR (the total period fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life. During the post Second World War period the TPFR reached a maximum in 1964 and a minimum in 1997.
‡ Provisional.
Note: The rates for women of all ages, under 20, and 40 and over are based upon the populations of women aged 15–44, 15–19, and 40–44 respectively.

Table 3.2 **Live births outside marriage: age of mother and type of registration** *England and Wales*
Numbers (thousands), mean age and percentages

Year and quarter	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean age (years)	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Registration*: Joint: Same address†	Joint: Different address†	Sole
	Live births outside marriage (numbers)								Percentage of total births							As a percentage of all births outside marriage		
1971	65.7	21.6	22.0	11.5	6.2	3.2	1.1	23.7	8.4	26.1	7.7	4.7	5.7	7.0	9.0	45.5		54.5
1976	53.8	19.8	16.6	9.7	4.7	2.3	0.7	23.3	9.2	34.2	9.1	4.4	5.2	8.6	10.1	51.0		49.0
1981	81.0	26.4	28.8	14.3	7.9	1.3	0.9	23.4	12.8	46.7	14.8	6.6	6.2	3.9	12.5	58.2		41.8
1986	141.3	39.6	54.1	27.7	13.1	5.7	1.1	23.8	21.4	69.0	28.2	12.1	10.1	12.6	14.7	46.6	19.6	33.8
1991	211.3	43.4	77.8	52.4	25.7	9.8	2.1	24.8	30.2	82.9	44.9	21.1	16.0	18.3	21.3	54.6	19.8	25.6
1992	215.2	40.1	77.1	55.9	28.9	10.9	2.3	25.2	31.2	83.7	47.2	22.8	17.3	19.3	22.9	55.4	20.7	23.9
1993	216.5	38.2	75.0	57.5	31.4	11.9	2.5	25.4	32.2	84.8	49.4	24.4	18.4	20.2	23.5	54.8	22.0	23.2
1994	215.5	35.9	71.0	58.5	34.0	13.4	2.7	25.8	32.4	85.5	50.6	25.5	18.9	21.2	25.2	57.5	19.8	22.7
1995	219.9	36.3	69.7	59.6	37.0	14.4	3.0	25.9	33.9	86.6	53.3	27.4	20.4	22.0	26.2	58.1	20.1	21.8
1996	232.7	39.3	71.1	62.3	40.5	16.2	3.2	26.0	35.8	88.0	56.5	29.5	21.7	23.4	26.7	58.1	19.9	21.9
1997	237.9	41.1	69.4	63.3	42.2	18.2	3.7	26.2	37.0	88.7	58.6	31.3	22.5	24.3	28.6	59.6	19.3	21.3
1998‡	240.0	42.9	67.6	62.2	43.8	19.5	3.9	26.3	37.8	89.1	59.7	32.3	23.3	24.8	29.0	60.9	18.3	20.7
1996 Dec	61.3	10.6	18.7	16.4	10.5	4.2	0.8	26.0	37.3	87.9	58.2	31.2	22.6	23.9	26.7	58.2	19.9	21.8
1997 March	58.5	10.2	17.4	15.7	10.2	4.2	0.9	26.1	37.0	88.7	58.4	31.0	22.4	23.9	28.8	58.4	19.5	22.0
1997 June	58.8	10.0	17.1	15.5	10.6	4.7	0.9	26.2	36.1	89.1	58.0	30.1	22.0	24.3	28.3	59.6	19.5	21.0
1997 Sept	61.3	10.5	17.8	16.5	10.9	4.7	0.9	26.2	37.3	88.8	58.9	31.8	22.7	24.4	27.9	59.9	18.9	21.2
1997 Dec	59.3	10.4	17.1	15.7	10.4	4.6	0.9	26.2	37.8	88.3	59.2	32.2	23.0	24.8	29.4	60.0	19.2	20.7
1998 March‡	58.3	10.4	16.5	15.3	10.6	4.6	1.0	26.3	37.5	89.0	59.4	31.9	23.1	24.4	29.6	60.4	18.4	21.1
1998 June‡	58.3	10.2	16.2	15.4	10.8	4.7	0.9	26.4	36.8	89.6	59.1	31.8	22.5	24.0	28.3	61.0	18.2	20.8
1998 Sept‡	63.1	11.3	17.8	16.3	11.5	5.2	1.0	26.3	38.1	89.2	60.0	32.3	23.5	25.2	28.6	60.9	18.4	20.8
1998 Dec‡	60.2	11.0	17.1	15.3	10.8	5.0	1.0	26.3	38.9	88.5	60.3	33.3	23.9	25.6	29.6	61.3	18.3	20.3

* Births outside marriage can be registered by both the mother and father (joint) or by the mother alone (sole).
† Usual address of parents.
‡ Provisional.

Table 4.1 **Conceptions: age of woman at conception** *England and Wales (residents)*
Numbers (thousands) and rates; and percentage terminated by abortion

Year and quarter	Age of woman at conception							
	All ages	Under 16	Under 20	20–24	25–29	30–34	35–39	40 and over
(a) numbers (thousands)								
1990	871.5	8.6	115.1	245.2	283.8	160.2	55.4	11.8
1991	853.6	7.8	103.3	234.1	281.1	166.3	56.9	11.9
1992	828.0	7.3	93.0	215.0	274.8	172.9	60.1	12.2
1993	819.0	7.2	86.7	202.9	271.4	181.9	63.5	12.6
1994	801.6	7.8	85.0	189.6	261.5	185.9	66.7	12.9
1995	790.3	8.0	86.2	180.4	249.9	191.2	69.2	13.3
1996	816.1	8.8	94.4	179.1	251.9	200.5	76.0	14.2
1997‡	799.2	8.3	95.5	166.5	241.8	201.2	79.4	14.8
1995 March	193.2	1.9	20.9	45.2	61.4	45.8	16.6	3.3
1995 June	194.1	2.0	21.3	44.7	61.1	46.4	17.2	3.4
1995 Sept	195.2	2.1	21.0	43.3	62.0	48.4	17.2	3.3
1995 Dec	207.8	2.0	23.0	47.2	65.4	50.6	18.2	3.4
1996 March	206.3	2.3	24.1	47.2	63.8	49.4	18.4	3.4
1996 June	200.7	2.3	23.7	44.4	61.9	48.9	18.4	3.6
1996 Sept	202.3	2.1	22.5	42.9	63.0	51.0	19.3	3.6
1996 Dec	206.7	2.1	24.1	44.7	63.2	51.3	19.8	3.6
1997 March‡	193.9	2.0	23.1	41.4	59.3	47.7	18.7	3.6
1997 June ‡	198.1	2.2	23.8	41.5	59.6	49.9	19.6	3.8
1997 Sept ‡	199.0	2.0	23.2	40.2	60.5	51.3	20.1	3.6
1997 Dec ‡	208.2	2.1	25.5	43.3	62.3	52.3	20.9	3.9
(b) rates (conceptions per thousand women in age group)								
1990	79.2	10.1	69.1	124.4	137.8	89.1	33.2	6.4
1991	77.7	9.3	65.1	120.6	135.0	89.4	34.0	6.4
1992	76.3	8.5	61.7	113.5	131.7	90.4	35.4	7.0
1993	76.1	8.1	59.6	110.4	131.2	92.5	36.8	7.4
1994	74.7	8.3	58.6	107.3	128.0	91.8	37.8	7.7
1995	73.7	8.5	58.7	105.9	124.8	92.1	38.2	8.0
1996	76.0	9.4	63.0	110.4	127.6	95.3	40.7	8.5
1997‡	74.3	8.9	62.3	107.5	124.9	95.3	41.2	8.7
1995 March	73.0	8.2	58.0	106.0	123.5	90.3	37.6	8.0
1995 June	72.6	8.7	58.2	104.9	122.1	89.9	38.2	8.1
1995 Sept	72.2	8.7	56.5	101.5	123.1	92.5	37.5	7.8
1995 Dec	76.8	8.6	61.7	112.0	130.2	96.2	39.5	8.0
1996 March	77.3	9.9	65.2	114.9	129.4	94.9	40.1	8.1
1996 June	75.2	9.8	63.7	109.3	125.8	93.6	39.7	8.6
1996 Sept	74.9	9.1	59.6	105.8	127.2	96.4	41.0	8.6
1996 Dec	76.5	9.0	63.4	111.5	128.3	96.8	41.8	8.6
1997 March‡	73.1	8.7	61.6	106.5	123.4	91.8	39.9	8.6
1997 June ‡	73.9	9.4	62.3	106.9	123.2	94.8	41.0	8.9
1997 Sept ‡	73.4	8.6	60.3	104.2	125.6	97.3	41.6	8.5
1997 Dec ‡	76.8	8.9	65.8	113.1	130.1	99.3	43.0	9.1
(c) percentage terminated by abortion								
1990	19.9	50.6	35.6	22.2	13.5	13.8	23.3	43.3
1991	19.3	51.0	34.4	22.1	13.4	13.7	22.0	41.8
1992	19.3	51.0	34.5	22.4	13.9	13.7	21.8	40.6
1993	19.2	52.1	34.9	22.9	13.8	13.4	21.2	39.4
1994	19.5	52.8	35.3	23.5	14.3	13.4	20.8	40.0
1995	19.7	49.8	35.2	24.3	14.8	13.4	20.3	37.2
1996	20.8	51.5	36.8	25.9	15.6	14.0	20.9	36.7
1997‡	21.3	51.8	37.3	26.8	16.4	14.1	20.8	37.2
1995 March	19.8	48.7	35.3	23.8	14.9	13.8	20.6	38.0
1995 June	20.2	48.8	35.4	24.7	15.4	13.8	20.8	37.4
1995 Sept	19.3	52.1	35.1	24.1	14.4	12.9	19.6	38.1
1995 Dec	19.6	49.3	34.8	24.5	14.5	13.4	20.3	35.3
1996 March	21.0	49.4	36.7	25.6	15.8	14.3	21.5	36.1
1996 June	21.3	51.6	37.2	26.6	16.0	14.3	21.6	37.2
1996 Sept	19.8	52.9	35.7	24.8	14.9	13.2	20.0	36.4
1996 Dec	21.1	52.5	37.7	26.4	15.9	14.2	20.8	37.1
1997 March‡	21.4	50.8	36.6	26.7	16.6	14.4	20.7	37.7
1997 June ‡	21.8	52.0	37.3	27.3	16.8	14.5	21.7	38.2
1997 Sept ‡	20.6	50.2	37.2	25.9	15.8	13.5	20.4	35.5
1997 Dec ‡	21.6	54.1	38.2	27.2	16.5	14.2	20.3	37.2

‡ Provisional

Notes: 1. Conceptions are estimates derived from birth registrations and abortion notifications.
2. Rates for women of all ages, under 16, under 20 and 40 and over are based on the population of women aged 15–44, 13–15, 15–19 and 40–44 respectively. Some figures for September 1996 onwards have been amended.
These rates use mid-1997 population estimates.

Table 4.2 **Abortions: residents and non-residents; age and gestation (residents only)** *England and Wales*
Numbers (thousands) and rates; and percentages for gestation weeks

Year and quarter		All women	Residents	Non-residents	Under 16	16–19	20–34	35–44	45 and over	Not stated	Under 9	9–12	13–19	20 and over	Not stated
		All women (residents)													
		All ages			Age group						Gestation weeks				
		Numbers (thousands)									Percentages				
1971		126.8	94.6	32.2	2.3	18.2	56.0	15.9	0.5	1.8	16.6	57.9	21.8	1.0	2.8
1976		129.7	101.9	27.8	3.4	24.0	57.5	14.7	0.5	1.8	24.8	55.8	15.0	1.1	3.4
1981		162.5	128.6	33.9	3.5	31.4	74.9	17.6	0.6	0.6	31.0	53.4	13.5	1.3	0.8
1986		172.3	147.6	24.7	3.9	33.8	92.0	17.5	0.4	0.0	33.4	53.8	11.5	1.4	0.0
1991		179.5	167.4	12.1	3.2	31.1	114.7	17.9	0.4	0.0	35.2	52.9	10.6	1.2	0.0
1992		172.1	160.5	11.6	3.0	27.6	113.5	18.1	0.5	0.0	36.8	51.8	10.3	1.2	0.0
1993		168.7	157.8	10.9	3.1	25.8	109.7	18.8	0.5	0.0	39.2	49.7	9.9	1.2	0.0
1994		166.9	156.5	10.3	3.2	25.1	108.1	19.1	0.4	0.0	40.5	48.4	9.9	1.2	0.0
1995		163.6	154.3	9.3	3.2	24.9	106.4	19.2	0.5	0.0	41.9	47.3	9.6	1.2	0.0
1996		177.5	167.9	9.6	3.6	28.8	113.9	21.1	0.4	0.0	40.0	48.7	10.1	1.3	0.0
1997		179.7	170.1	9.6	3.4	29.9	114.0	22.3	0.5	0.0	41.2	47.9	9.6	1.2	0.0
1998‡		186.9	177.3	9.5	3.7	33.2	116.2	23.7	0.5	0.0	41.4	47.6	9.7	1.3	0.0
1995	March	42.9	40.4	2.4	0.9	6.5	28.0	5.0	0.1	0.0	39.1	49.4	10.4	1.1	0.0
	June	40.0	37.7	2.3	0.8	6.0	26.1	4.7	0.1	0.0	41.9	47.5	9.4	1.2	0.0
	Sept	41.3	38.9	2.4	0.8	6.4	26.7	4.9	0.1	0.0	42.2	46.7	9.7	1.3	0.0
	Dec	39.5	37.3	2.2	0.8	6.1	25.6	4.6	0.1	0.0	44.6	45.4	8.7	1.2	0.0
1996	March	45.7	43.2	2.4	0.9	7.4	29.7	5.2	0.1	0.0	38.0	50.5	10.2	1.2	0.0
	June	45.5	42.9	2.5	0.9	7.3	29.2	5.4	0.1	0.0	38.9	49.3	10.5	1.4	0.0
	Sept	44.0	41.6	2.4	0.9	7.1	28.0	5.4	0.1	0.0	40.0	48.3	10.3	1.4	0.0
	Dec	42.4	40.1	2.2	0.9	7.0	26.9	5.2	0.1	0.0	43.1	46.3	9.3	1.3	0.0
1997	March	46.2	43.6	2.5	0.9	7.7	29.4	5.5	0.1	0.0	37.4	50.2	11.1	1.3	0.0
	June	45.2	42.8	2.4	0.8	7.4	28.9	5.6	0.1	0.0	41.3	48.0	9.4	1.2	0.0
	Sept	45.1	42.7	2.4	0.9	7.5	28.4	5.8	0.1	0.0	42.0	47.2	9.6	1.2	0.0
	Dec	43.3	41.0	2.3	0.8	7.4	27.3	5.4	0.1	0.0	44.5	46.0	8.3	1.2	0.0
1998	March‡	47.9	45.4	2.5	1.0	8.6	30.0	5.8	0.1	0.0	37.6	50.3	10.8	1.3	0.0
	June‡	46.1	43.7	2.4	0.9	8.1	28.9	5.8	0.1	0.0	40.9	48.1	9.5	1.4	0.0
	Sept‡	46.6	44.2	2.4	1.0	8.2	28.8	6.1	0.1	0.0	42.6	46.6	9.5	1.2	0.0
	Dec‡	45.2	43.0	2.2	0.9	8.0	28.0	5.9	0.1	0.0	45.0	45.0	8.9	1.2	0.0
Rates (per thousand women 14–49)															
1971		:	8.4	:	3.5	13.9	11.4	5.6	0.3						
1976		:	8.9	:	4.4	16.9	11.2	5.3	0.3						
1981		:	10.6	:	4.5	19.4	14.0	5.9	0.4						
1986		:	11.7	:	5.4	22.0	16.5	5.1	0.3						
1991		:	13.1	:	5.6	24.0	19.6	5.1	0.3						
1992		:	12.5	:	5.4	22.4	18.9	5.2	0.3						
1993		:	12.3	:	5.3	22.0	18.7	5.5	0.3						
1994		:	12.2	:	5.2	22.0	18.6	5.6	0.2						
1995		:	12.0	:	5.2	21.7	18.4	5.5	0.2						
1996		:	13.0	:	5.8	24.3	20.0	6.0	0.2						
1997		:	13.3	:	5.5	24.5	20.4	6.1	0.3						
1998‡		:	13.8	:	6.0	27.1	20.8	6.5	0.3						
1995	March	:	12.8	:	5.6	22.9	19.6	5.8	0.3						
	June	:	11.8	:	4.9	21.0	18.1	5.4	0.2						
	Sept	:	12.0	:	5.1	21.9	18.3	5.6	0.3						
	Dec	:	11.5	:	5.2	21.0	17.6	5.2	0.2						
1996	March	:	13.5	:	5.7	25.0	21.0	5.9	0.2						
	June	:	13.4	:	5.9	24.9	20.6	6.1	0.2						
	Sept	:	12.8	:	5.9	24.0	19.6	6.1	0.2						
	Dec	:	12.4	:	5.8	23.5	18.8	5.8	0.3						
1997	March	:	13.8	:	5.7	25.5	21.3	6.2	0.2						
	June	:	13.4	:	5.4	24.1	20.7	6.2	0.3						
	Sept	:	13.2	:	5.7	24.3	20.2	6.3	0.3						
	Dec	:	12.7	:	5.3	24.0	19.4	5.9	0.3						
1998	March‡	:	14.4	:	6.3	28.5	21.7	6.5	0.3						
	June‡	:	13.7	:	5.7	26.4	20.7	6.4	0.3						
	Sept‡	:	13.7	:	6.1	26.7	20.4	6.7	0.3						
	Dec‡	:	13.3	:	5.9	26.0	19.9	6.4	0.3						

‡ Provisional.

Table 5.1 **Expectation of life (in years) at birth and selected age** *Constituent countries of the United Kingdom*

Year	Males: At birth	Males: At age 5	20	30	50	60	70	80	Year	Females: At birth	Females: At age 5	20	30	50	60	70	80
United Kingdom																	
1971	68.8	65.3	50.9	41.3	23.0	15.3	9.5	5.5	1971	75.0	71.4	56.7	47.0	28.3	19.8	12.5	6.9
1976	69.6	66.0	51.4	41.9	23.4	15.7	9.6	5.6	1976	75.2	72.0	57.3	47.5	28.7	20.3	12.9	7.2
1981	70.8	66.9	52.3	42.7	24.1	16.3	10.1	5.7	1981	76.8	72.7	57.9	48.1	29.2	20.8	13.3	7.5
1986	71.9	67.8	53.2	43.6	24.9	16.8	10.5	6.0	1986	77.7	73.5	58.7	48.9	29.8	21.2	13.8	7.9
1991	73.2	68.9	54.2	44.7	26.0	17.7	11.1	6.4	1991	78.8	74.4	59.6	49.7	30.7	21.9	14.4	8.3
1992	73.4	69.1	54.4	44.8	26.1	17.8	11.1	6.4	1992	78.9	74.4	59.6	49.8	30.7	21.9	14.4	8.3
1993	73.7	69.3	54.6	45.1	26.4	18.0	11.3	6.5	1993	79.1	74.6	59.8	50.0	30.9	22.1	14.5	8.4
1994	73.9	69.5	54.8	45.2	26.5	18.1	11.3	6.5	1994	79.2	74.7	59.9	50.0	31.0	22.2	14.5	8.4
1995	74.1	69.7	55.0	45.5	26.8	18.4	11.5	6.6	1995	79.4	74.9	60.1	50.2	31.2	22.4	14.6	8.5
1996‡	74.3	69.9	55.2	45.7	26.9	18.5	11.6	6.6	1996‡	79.5	75.0	60.1	50.3	31.2	22.4	14.6	8.5
England and Wales																	
1971	69.0	65.6	51.1	41.5	23.1	15.4	9.5	5.5	1971	75.2	71.6	56.9	47.1	28.4	20.0	12.6	7.0
1976	69.9	66.2	51.6	42.1	23.5	15.8	9.7	5.7	1976	76.0	72.2	57.4	47.7	28.8	20.4	13.0	7.2
1981	71.0	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.1	48.3	29.4	20.9	13.4	7.5
1986	72.1	68.0	53.4	43.8	25.0	16.9	10.6	6.1	1986	77.9	73.6	58.9	49.0	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.5	44.9	26.2	17.9	11.2	6.4	1991	79.0	74.6	59.8	49.9	30.8	22.1	14.5	8.4
1992	73.6	69.3	54.6	45.0	26.3	17.9	11.2	6.4	1992	79.1	74.6	59.8	50.0	30.9	22.1	14.5	8.4
1993	74.0	69.6	54.9	45.3	26.5	18.2	11.4	6.5	1993	79.3	74.8	60.0	50.2	31.1	22.3	14.6	8.5
1994	74.1	69.7	55.0	45.4	26.7	18.3	11.4	6.5	1994	79.4	74.9	60.1	50.3	31.2	22.3	14.6	8.5
1995	74.4	70.0	55.2	45.7	26.9	18.5	11.6	6.6	1995	79.6	75.1	60.3	50.4	31.3	22.5	14.7	8.6
1996‡	74.6	70.2	55.4	45.9	27.1	18.7	11.7	6.7	1996‡	79.7	75.2	60.3	50.6	31.4	22.6	14.7	8.6
England																	
1981	71.1	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.2	48.4	29.4	20.9	13.4	7.5
1986	72.2	68.1	53.4	43.8	25.1	17.0	10.6	6.1	1986	77.9	73.7	58.9	49.1	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.5	44.9	26.2	17.9	11.2	6.4	1991	79.0	74.6	59.8	49.9	30.9	22.1	14.5	8.4
1992	73.7	69.3	54.6	45.0	26.3	18.0	11.2	6.4	1992	79.1	74.6	59.8	50.0	30.9	22.1	14.5	8.4
1993	74.0	69.6	54.9	45.3	26.6	18.2	11.4	6.5	1993	79.3	74.9	60.0	50.2	31.1	22.3	14.6	8.5
1994	74.1	69.7	55.0	45.5	26.7	18.3	11.4	6.6	1994	79.4	74.9	60.1	50.3	31.2	22.4	14.6	8.5
1995	74.4	70.0	55.3	45.7	27.0	18.5	11.6	6.6	1995	79.6	75.1	60.3	50.5	31.4	22.5	14.7	8.6
1996‡	74.6	70.2	55.5	45.9	27.2	18.7	11.7	6.7	1996‡	79.7	75.2	60.4	50.6	31.4	22.6	14.8	8.6
Wales																	
1981	70.4	66.5	51.9	42.2	23.6	15.8	9.7	5.5	1981	76.4	72.3	57.5	47.7	28.9	20.4	13.1	7.4
1986	71.6	67.5	52.9	43.3	24.6	16.6	10.4	6.0	1986	77.6	73.3	58.5	48.7	29.7	21.1	13.8	7.8
1991	73.2	68.9	54.2	44.6	25.9	17.6	11.0	6.4	1991	78.9	74.4	59.6	49.8	30.7	21.9	14.4	8.4
1992	73.3	68.9	54.2	44.7	25.9	17.7	11.0	6.4	1992	78.9	74.4	59.6	49.8	30.7	21.9	14.3	8.3
1993	73.5	69.1	54.4	44.9	26.1	17.8	11.2	6.6	1993	79.0	74.5	59.7	49.9	30.8	22.0	14.4	8.4
1994	73.5	69.1	54.4	44.9	26.2	17.9	11.1	6.5	1994	79.0	74.5	59.7	49.8	30.8	22.0	14.4	8.4
1995	73.8	69.4	54.7	45.2	26.5	18.1	11.3	6.6	1995	79.2	74.7	59.8	50.0	30.9	22.2	14.5	8.5
1996‡	74.0	69.5	54.8	45.4	26.6	18.3	11.4	6.5	1996‡	79.2	74.7	59.8	50.0	31.0	22.2	14.5	8.5
Scotland																	
1971	67.3	64.0	49.5	40.1	22.0	14.6	9.1	5.4	1971	73.7	70.1	55.4	45.6	27.2	19.0	11.9	6.7
1976	68.2	64.4	49.9	40.4	22.3	14.9	9.2	5.3	1976	74.4	70.6	55.9	46.1	27.6	19.4	12.4	6.9
1981	69.1	65.2	50.6	41.1	22.9	15.4	9.5	5.5	1981	75.3	71.2	56.4	46.7	27.9	19.7	12.7	7.2
1986	70.2	66.0	51.4	41.9	23.5	15.8	9.9	5.7	1986	76.2	71.9	57.1	47.3	28.4	20.1	13.0	7.5
1991	71.4	67.1	52.5	43.0	24.6	16.6	10.4	6.1	1991	77.1	72.6	57.8	48.1	29.1	20.6	13.4	7.8
1992	71.5	67.2	52.5	43.1	24.6	16.6	10.4	6.0	1992	77.1	72.6	57.8	48.1	29.1	20.6	13.4	7.7
1993	71.7	67.3	52.7	43.2	24.8	16.8	10.5	6.0	1993	77.3	72.8	58.0	48.2	29.3	20.7	13.4	7.8
1994	71.9	67.5	52.8	43.4	24.9	16.9	10.6	6.1	1994	77.4	72.9	58.1	48.3	29.4	20.8	13.5	7.8
1995	72.1	67.7	53.1	43.6	25.2	17.2	10.8	6.2	1995	77.6	73.2	58.3	48.6	29.6	21.0	13.7	7.9
1996‡	72.2	67.8	53.1	43.7	25.3	17.3	10.9	6.2	1996‡	77.8	73.2	58.4	48.7	29.7	21.1	13.7	7.9
Northern Ireland																	
1971	67.6	64.6	50.1	40.7	22.6	15.0	9.4	5.3	1971	73.7	70.4	55.6	45.9	27.3	18.9	11.7	6.5
1976	67.5	64.1	49.7	40.5	22.5	14.9	9.2	4.8	1976	73.8	70.4	55.7	46.0	27.3	19.0	11.8	6.1
1981	69.1	65.3	50.8	41.4	23.1	15.5	9.6	5.5	1981	75.4	71.4	56.7	47.0	28.1	19.9	12.6	7.1
1986	70.6	66.4	51.8	42.4	23.9	16.0	10.0	5.7	1986	76.7	72.5	57.7	47.9	28.9	20.4	13.0	7.2
1991	72.3	67.9	53.3	43.8	25.2	17.0	10.6	6.0	1991	78.1	73.7	58.9	49.1	30.0	21.3	13.8	7.8
1992	72.5	68.2	53.6	44.1	25.5	17.2	10.7	6.0	1992	78.3	73.9	59.1	49.3	30.2	21.5	13.9	8.0
1993	72.8	68.4	53.8	44.4	25.6	17.4	10.8	6.1	1993	78.4	74.0	59.2	49.4	30.3	21.6	14.0	7.9
1994	72.9	68.6	54.0	44.5	25.8	17.5	10.9	6.1	1994	78.4	74.0	59.2	49.4	30.3	21.6	14.0	7.9
1995	73.3	68.9	54.3	44.8	26.1	17.7	11.0	6.0	1995	78.7	74.2	59.4	49.6	30.5	21.7	14.0	7.9
1996‡	73.6	69.2	54.5	45.0	26.3	17.9	11.0	6.0	1996‡	78.9	79.5	59.7	49.8	30.7	21.9	14.1	8.0

Note: Figures from 1981 are calculated from the population estimates revised in the light of the 1991 Census. All figures are based on a three-year period; see Notes to tables for further information.

‡ Provisional.

Table 6.1 **Deaths: age and sex** *England and Wales*
Numbers (thousands) and rates

		Age group											
Year and quarter	All ages	Under 1*	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
Numbers (thousands)														
Males														
1971	288.4	7.97	1.23	0.92	0.69	1.54	1.77	3.05	6.68	21.0	55.7	89.8	71.9	26.1
1976	300.1	4.88	0.88	0.68	0.64	1.66	1.66	3.24	5.93	20.4	52.0	98.7	80.3	29.0
1981	289.0	4.12	0.65	0.45	0.57	1.73	1.58	3.18	5.54	16.9	46.9	92.2	86.8	28.5
1986	287.9	3.72	0.57	0.32	0.38	1.43	1.75	3.10	5.77	14.4	43.6	84.4	96.2	32.2
1991	277.6	2.97	0.55	0.34	0.35	1.21	1.76	3.69	6.16	13.3	34.9	77.2	95.8	39.3
1992	271.7	2.61	0.49	0.30	0.32	0.97	1.62	3.75	5.95	13.1	33.7	76.4	92.7	39.9
1993	279.6	2.41	0.51	0.28	0.34	0.91	1.60	3.81	5.78	13.4	33.3	78.9	93.8	44.5
1994	267.6	2.37	0.43	0.28	0.33	0.84	1.55	4.07	5.77	12.9	31.3	76.3	88.2	43.2
1995	274.4	2.31	0.39	0.27	0.34	0.91	1.53	4.04	5.88	13.5	31.0	75.0	92.3	47.1
1996	268.7	2.27	0.44	0.24	0.29	0.93	1.41	4.06	5.84	13.6	30.1	71.0	90.7	47.8
1997	264.9	2.14	0.41	0.27	0.33	0.95	1.44	3.94	5.71	13.5	28.9	68.0	90.2	49.1
1998‡	264.2	2.06	0.42	0.25	0.31	0.96	1.40	4.11	5.88	13.6	28.9	66.0	90.0	50.2
Females														
1971	278.9	5.75	0.98	0.57	0.42	0.63	0.79	1.84	4.53	13.3	30.8	64.0	95.0	60.4
1976	298.5	3.46	0.59	0.45	0.42	0.62	0.67	1.94	4.04	12.8	29.6	67.1	104.7	72.1
1981	288.9	2.90	0.53	0.30	0.37	0.65	0.64	1.82	3.74	10.5	27.2	62.8	103.6	73.9
1986	293.3	2.59	0.49	0.25	0.27	0.56	0.67	1.65	3.83	8.8	25.8	58.4	106.5	83.6
1991	292.5	2.19	0.44	0.25	0.22	0.46	0.64	1.73	3.70	8.4	21.3	54.2	103.3	95.7
1992	286.6	1.93	0.39	0.21	0.20	0.43	0.62	1.72	3.72	8.3	20.6	53.4	99.5	95.5
1993	299.2	1.84	0.37	0.19	0.25	0.39	0.58	1.80	3.63	8.6	20.4	55.2	100.9	105.0
1994	285.6	1.75	0.36	0.19	0.20	0.36	0.54	1.77	3.67	8.7	19.0	53.9	94.2	101.0
1995	295.2	1.68	0.33	0.20	0.21	0.38	0.50	1.86	3.64	9.0	18.9	53.0	97.2	108.4
1996	291.5	1.69	0.32	0.18	0.20	0.43	0.51	1.85	3.66	8.9	18.2	50.2	96.7	108.7
1997	290.4	1.66	0.30	0.18	0.21	0.43	0.49	1.72	3.74	9.0	18.0	48.3	95.5	110.9
1998‡	289.2	1.55	0.30	0.19	0.21	0.43	0.47	1.77	3.71	9.1	17.9	46.7	94.3	112.6
Rates (deaths per 1,000 population in each age group)														
Males														
1971	12.1	19.8	0.76	0.44	0.37	0.90	0.93	0.97	2.31	7.07	20.1	50.5	113.0	231.8
1976	12.5	16.2	0.65	0.34	0.31	0.88	0.96	0.92	2.09	6.97	19.6	50.3	116.4	243.2
1981	12.0	12.6	0.53	0.27	0.29	0.82	0.83	0.89	1.83	6.11	17.7	45.6	105.2	226.5
1986	11.8	11.0	0.44	0.21	0.23	0.71	0.82	0.87	1.67	5.27	16.6	42.9	101.1	214.8
1991	11.2	8.3	0.40	0.21	0.23	0.69	0.86	0.94	1.76	4.62	13.8	38.5	93.6	197.1
1992	10.8	7.3	0.34	0.18	0.20	0.61	0.82	0.91	1.71	4.29	13.4	37.3	90.1	193.9
1993	11.1	7.0	0.36	0.16	0.21	0.59	0.83	0.91	1.67	4.24	13.3	37.9	93.3	202.3
1994	10.6	6.9	0.31	0.16	0.20	0.55	0.83	0.96	1.66	3.99	12.4	36.2	89.5	188.6
1995	10.8	6.9	0.28	0.15	0.21	0.58	0.86	0.95	1.67	4.08	12.3	36.1	89.4	196.0
1996	10.5	7.0	0.32	0.13	0.18	0.58	0.83	095	1.62	4.02	12.0	34.5	85.1	192.1
1997	10.3	6.5	0.31	0.15	0.19	0.58	0.89	0.93	1.54	3.94	11.5	33.2	82.5	190.3
1998‡	10.3	6.3	0.31	0.14	0.18	0.59	0.86	0.97	1.59	3.97	11.5	32.2	82.3	194.8
1997 March	11.9	7.0	0.32	0.15	0.21	0.60	0.95	0.96	1.55	4.11	12.3	37.1	98.4	235.2
1997 June	9.7	6.6	0.32	0.17	0.16	0.55	0.85	0.89	1.52	3.85	11.0	32.2	76.3	170.6
1997 Sept	9.3	5.9	0.24	0.16	0.20	0.57	0.89	0.93	1.48	3.76	10.9	30.5	72.4	161.8
1997 Dec	10.4	6.6	0.34	0.12	0.19	0.62	0.86	0.94	1.61	4.04	11.7	33.2	83.1	194.4
1998 March‡	11.0	6.5	0.38	0.17	0.19	0.60	0.93	1.02	1.64	4.13	12.1	34.7	88.0	210.9
1998 June‡	10.1	6.0	0.29	0.14	0.21	0.65	0.87	0.93	1.57	3.90	11.3	31.6	80.8	186.5
1998 Sept‡	9.4	5.7	0.27	0.13	0.15	0.50	0.84	0.88	1.52	3.88	10.7	29.5	74.7	169.9
1998 Dec‡	10.7	7.1	0.30	0.14	0.19	0.62	0.80	1.04	1.64	4.00	11.7	33.2	85.9	212.1
Females														
1971	11.0	15.1	0.63	0.29	0.24	0.39	0.42	0.60	1.59	4.32	10.0	26.1	73.6	185.7
1976	11.8	12.2	0.46	0.24	0.21	0.35	0.40	0.56	1.46	4.30	10.1	26.0	74.6	196.6
1981	11.3	9.4	0.46	0.19	0.19	0.32	0.35	0.52	1.26	3.80	9.5	24.1	66.2	178.2
1986	11.4	8.0	0.40	0.17	0.17	0.29	0.33	0.47	1.12	3.23	9.2	23.4	62.5	171.0
1991	11.3	6.4	0.33	0.16	0.15	0.28	0.33	0.45	1.06	2.91	8.1	22.0	58.6	163.8
1992	10.9	5.7	0.29	0.14	0.13	0.29	0.32	0.43	1.08	2.73	7.9	21.5	56.9	148.8
1993	11.4	5.6	0.28	0.12	0.16	0.27	0.31	0.45	1.06	2.73	7.9	22.0	59.4	156.5
1994	10.9	5.4	0.27	0.11	0.13	0.25	0.30	0.44	1.06	2.68	7.3	21.3	56.9	146.6
1995	11.2	5.3	0.25	0.12	0.13	0.26	0.29	0.46	1.05	2.72	7.3	21.4	57.1	153.1
1996	11.0	5.4	0.24	0.10	0.12	0.29	0.31	0.45	1.03	2.62	7.1	20.7	55.8	150.8
1997	10.9	5.3	0.23	0.10	0.13	0.28	0.32	0.42	1.03	2.63	6.9	20.2	54.6	151.8
1998‡	10.9	5.0	0.23	0.11	0.13	0.28	0.30	0.44	1.02	2.65	6.9	19.5	53.9	154.1
1997 March	13.3	5.6	0.29	0.12	0.10	0.28	0.28	0.43	1.12	2.76	7.8	23.1	65.8	195.0
1997 June	10.0	5.3	0.24	0.10	0.13	0.27	0.35	0.40	1.00	2.57	6.5	19.1	50.6	134.3
1997 Sept	9.6	4.8	0.18	0.08	0.15	0.26	0.33	0.43	1.01	2.57	6.6	18.3	48.0	127.2
1997 Dec	10.9	5.6	0.22	0.12	0.15	0.31	0.30	0.44	1.00	2.63	6.9	20.3	54.1	151.3
1998 March‡	11.8	5.4	0.25	0.12	0.18	0.30	0.31	0.41	1.03	2.64	7.1	21.3	58.5	169.3
1998 June‡	10.5	4.4	0.21	0.11	0.09	0.29	0.29	0.45	1.00	2.68	6.8	18.9	52.4	146.6
1998 Sept‡	9.8	4.6	0.19	0.08	0.10	0.28	0.29	0.45	0.98	2.51	6.4	17.8	48.1	134.9
1998 Dec‡	11.5	5.6	0.30	0.13	0.14	0.25	0.30	0.43	1.07	2.77	7.3	20.1	56.6	165.8

* Rates per 1,000 live births.
‡ Provisional registrations.
Note: Figures represent the numbers of deaths registered in each year up to 1992 and the numbers of deaths occurring in each year from 1993.

Table 6.2 **Deaths: subnational** *Health Regional Office areas of England**
Rates

Year and quarter	Northern and Yorkshire	Trent	Anglia and Oxford	North Thames	South Thames	South and West	West Midlands	North West
Total deaths (deaths per 1,000 population of all ages)								
1991	11.8	11.2	9.7	10.0	11.3	11.5	10.8	12.0
1992	11.4	11.0	9.5	9.6	11.1	11.3	10.6	11.7
1993	11.8	11.4	9.8	9.9	11.5	11.6	11.0	12.1
1994	11.2	10.8	9.4	9.5	10.9	11.1	10.5	11.5
1995	11.3	11.0	9.6	9.7	11.1	11.5	10.9	11.6
1996	11.2	10.9	9.6	9.4	10.9	11.2	10.6	11.5
1997	11.0	10.8	9.4	9.2	10.7	11.2	10.5	11.4
1998‡	11.3	10.9	9.5	9.1	10.4	11.0	10.5	11.4
1997 Sept	9.8	9.6	8.3	8.3	9.4	9.8	9.4	10.2
1997 Dec	11.1	11.1	9.4	9.1	10.6	11.2	10.6	11.6
1998 March‡	12.4	11.7	10.0	9.8	11.3	11.9	11.2	12.1
1998 June‡	10.9	10.7	9.2	8.6	10.1	11.0	10.1	11.1
1998 Sept‡	10.0	9.5	8.7	8.3	9.4	10.0	9.5	10.4
1998 Dec‡	11.8	11.8	10.1	9.6	10.8	11.3	11.1	12.1
Infant mortality (deaths under 1 year per 1,000 live births)								
1991	8.5	8.0	6.8	6.5	6.5	6.4	8.7	7.5
1992	6.9	6.8	5.4	6.4	6.0	5.6	8.2	7.3
1993	6.9	7.0	5.3	6.2	6.4	5.6	7.0	6.5
1994	6.8	7.2	5.6	6.1	5.2	5.0	7.2	6.2
1995	6.6	6.4	5.2	5.7	5.8	5.6	7.1	6.6
1996	6.4	6.3	5.8	5.6	6.1	5.5	6.8	6.4
1997	6.3	5.9	5.1	5.3	5.3	5.8	7.0	6.7
1998‡	6.1	6.0	5.1	5.5	5.1	4.7	6.5	6.2
1997 Sept	6.5	5.8	4.4	5.0	5.8	5.1	5.8	5.9
1997 Dec	6.0	5.2	6.0	5.9	4.5	6.0	8.0	7.8
1998 March‡	6.5	6.0	5.1	5.2	5.8	5.1	7.2	6.8
1998 June‡	6.4	5.6	4.4	5.4	4.4	3.8	6.3	5.2
1998 Sept‡	5.1	5.5	5.2	4.8	4.2	4.5	5.7	5.9
1998 Dec‡	6.6	6.8	6.0	6.7	6.0	5.5	6.6	6.9
Neonatal mortality (deaths under 4 weeks per 1,000 live births)								
1991	4.9	4.7	3.8	4.2	3.8	3.6	5.9	4.0
1992	4.5	4.5	3.5	4.2	3.9	3.4	5.9	4.4
1993	4.3	4.7	3.6	4.4	4.2	3.6	4.8	4.0
1994	4.4	5.1	3.8	3.9	3.7	3.1	5.4	3.9
1995	4.5	4.5	3.4	3.9	3.9	3.9	5.3	4.2
1996	4.1	4.2	3.7	3.9	4.1	3.9	5.0	4.1
1997	4.1	4.0	3.3	3.4	3.6	3.9	5.0	4.3
1998‡	3.8	4.1	3.4	3.7	3.6	3.0	4.7	4.1
1997 Sept	4.5	4.2	2.6	3.5	4.1	3.6	4.3	3.9
1997 Dec	3.8	3.5	3.8	3.4	3.2	4.3	5.6	5.5
1998 March‡	3.8	4.2	2.9	3.2	3.9	3.3	5.2	4.8
1998 June‡	4.0	4.2	3.6	3.6	3.1	2.5	4.9	3.2
1998 Sept‡	3.1	3.9	3.6	3.7	3.1	3.2	3.9	4.1
1998 Dec‡	4.3	4.3	3.3	4.6	4.5	3.2	4.9	4.3
Perinatal mortality (stillbirths and deaths under 1 week per 1,000 total births)†								
1991	8.7	8.6	7.2	8.0	7.4	7.0	9.9	7.8
1992	7.3	8.5	6.2	7.5	7.2	6.7	9.2	8.1
1993	9.4	8.6	8.5	9.2	8.9	7.8	9.9	8.9
1994	9.1	9.1	7.9	9.1	8.1	7.8	10.6	9.2
1995	9.4	9.5	7.2	9.0	8.6	7.7	10.2	8.6
1996	8.6	8.7	7.7	9.0	8.6	7.5	10.2	8.7
1997	8.2	7.9	7.5	8.4	7.8	8.4	9.6	8.8
1998‡	8.6	8.7	7.2	8.3	8.0	6.8	9.3	8.7
1997 Sept	8.6	8.4	6.5	8.0	7.9	7.3	8.5	9.1
1997 Dec	8.4	7.5	7.6	8.8	7.3	9.4	11.1	9.1
1998 March‡	9.5	8.9	6.5	8.5	7.8	6.5	10.6	10.3
1998 June‡	9.0	8.8	7.4	8.2	7.5	5.9	9.5	8.3
1998 Sept‡	7.0	8.8	6.3	7.7	7.7	7.6	7.8	7.0
1998 Dec‡	8.8	8.4	8.7	9.0	9.2	7.4	9.3	9.6

* As constituted on 1 April 1996.
† In October 1992 the legal definition of a stillbirth was changed, from baby born dead after 28 completed weeks of gestation or more, to one born dead after 24 completed weeks of gestation or more.
‡ Provisional registrations.
Note: Figures represent the numbers of deaths registered in each year up to 1992 and the number of deaths occurring in each year from 1993.

Table 6.3 **Deaths: selected causes (International Classification)* and sex** *England and Wales*

Number (thousands) and rate for all deaths and age-standardised rates† per million population for selected causes

Year and quarter	All deaths		All causes	Malignant neoplasms									
	Number (thousands)	Rate**		Oesophagus	Stomach	Colon, rectum, rectosigmoid junction and anus	Trachea, bronchus and lung	Melanoma of skin	Other neoplasm of skin	Breast	Cervix uteri	Ovary and other uterine	Prostate
				(150)	(151)	(153,154)	(162)	(172)	(173)	(174)	(180)	(183)	(185)
Males													
1971	288.4	1,207	13,464	76	317	331	1,066	10	12	:	:	:	198
1976	300.1	1,246	13,613	84	292	339	1,091	14	12	:	:	:	211
1981	289.0	1,196	12,200	90	251	316	1,028	17	9	:	:	:	214
1986	287.9	1,177	11,349	101	224	313	949	18	9	:	:	:	263
1991	277.6	1,121	10,234	117	185	310	841	23	10	:	:	:	302
1992	271.7	1,083	9,870	120	179	316	810	22	10	:	:	:	303
1993	279.6	1,109	10,010	123	162	294	766	25	8	:	:	:	296
1994	267.6	1,057	9,502	128	162	283	743	24	9	:	:	:	295
1995	274.4	1,079	9,582	126	148	281	712	26	9	:	:	:	296
1996	268.7	1,051	9,271	126	145	272	681	25	8	:	:	:	287
1997	264.9	1,031	9,019	125	136	267	649	25	7	:	:	:	277
1998‡	264.2	1,029	9,011	130	133	266	650	26	8	:	:	:	278
1996 Dec	69.3	1,078	9,634	132	146	282	684	25	8	:	:	:	306
1997 Mar	75.2	1,187	10,330	119	139	274	668	22	7	:	:	:	275
1997 Jun	62.1	970	8,501	125	128	262	634	27	5	:	:	:	269
1997 Sep	60.1	928	8,142	132	138	267	630	27	8	:	:	:	277
1997 Dec	67.5	1,042	9,126	125	141	267	663	23	7	:	:	:	285
1998 Mar‡	69.7	1,100	9,626	130	133	276	667	26	8	:	:	:	277
1998 Jun‡	64.4	1,006	8,711	126	127	257	622	26	8	:	:	:	274
1998 Sep‡	60.6	936	8,209	134	135	263	640	26	6	:	:	:	275
1998 Dec‡	69.5	1,074	9,413	130	136	265	663	26	9	:	:	:	284
Females													
1971	278.9	1,104	8,186	40	149	255	183	14	6	379	83	127	:
1976	298.5	1,176	8,303	43	136	262	219	16	6	393	78	125	:
1981	288.9	1,134	7,433	42	111	231	252	16	5	405	69	122	:
1986	293.3	1,141	6,947	47	89	220	285	19	4	420	69	121	:
1991	292.5	1,127	6,399	49	74	207	300	18	4	401	54	118	:
1992	286.6	1,095	6,197	49	73	206	297	17	5	395	52	118	:
1993	299.2	1,140	6,347	51	66	190	294	22	3	376	47	116	:
1994	285.6	1,085	6,039	50	66	187	298	22	4	370	42	114	:
1995	295.2	1,119	6,128	52	61	179	294	20	4	359	42	116	:
1996	291.5	1,102	5,995	51	55	174	292	20	3	343	41	122	:
1997	290.4	1,095	5,925	51	57	169	285	20	3	336	37	115	:
1998‡	289.2	1,090	5,891	49	54	163	292	21	3	330	35	118	:
1996 Dec	75.5	1,136	6,259	55	56	172	300	20	4	350	38	130	:
1997 Mar	86.7	1,326	6,992	50	56	168	292	21	4	336	33	116	:
1997 Jun	66.5	1,005	5,499	49	55	170	268	19	3	327	41	112	:
1997 Sep	64.3	961	5,309	54	58	169	293	20	3	340	38	116	:
1997 Dec	73.0	1,091	5,921	51	58	170	286	20	3	338	37	118	:
1998 Mar‡	77.3	1,181	6,321	45	50	158	295	21	4	331	37	120	:
1998 Jun‡	69.6	1,053	5,649	48	57	160	274	18	3	312	35	113	:
1998 Sep‡	65.2	976	5,333	49	58	166	288	23	3	330	35	120	:
1998 Dec‡	77.1	1,153	6,026	52	51	168	310	23	3	343	34	117	:

* The Ninth Revision of the International Classification of Diseases, 1975, came into operation in England and Wales on 1 January 1979. ONS has produced a publication containing details of the effect of this Revision *(Mortality statistics: comparison of the 8th and 9th revision of the International Classification of Diseases, 1978* (*sample*), (Series DH1 no.10).

‡ Provisional registrations.

† Directly age-standardised to the European Standard population. See Notes to Tables.

** Per 100,000 population.

Notes 1. Between 1 January 1984 and 31 December 1992, ONS applied the International Classification of Diseases Selection Rule 3 in the coding of deaths where terminal events and other 'modes of dying' such as cardiac arrest, cardiac failure, certain thromboembolic disorders, and unspecified pneumonia and bronchopneumonia, were stated by the certifier to be the underlying cause of death and other major pathology appeared on the certificate. In these cases Rule 3 allows the terminal event to be considered a direct sequel to the major pathology and that primary condition was selected as the underlying cause of death. Prior to 1984 and from 1993 onwards, such certificates are coded to the terminal event. ONS also introduced automated coding of cause of death in 1993, which may also affect comparisons of deaths by cause from 1993. Further details may be found in the annual volumes *Mortality statistics:* Cause *1984,* Series DH2 no.11, and *Mortality statistics:* Cause *1993 (revised) and 1994,* Series DH2 no.21.

2. On 1 January 1986 a new certificate for deaths within the first 28 days of life was introduced. It is not possible to assign one underlying cause of death from this certificate. The 'cause' figures for 1986 onwards therefore exclude deaths at ages under 28 days.

3. Figures represent the numbers of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993. Provisional figures are registrations.

Table 6.3 continued **Deaths: selected causes (International Classification)* and sex** *England and Wales*

Number (thousands) and rate for all deaths and age-standardised rates† per million population for selected causes

Malignant neoplasms													
Bladder	Leukaemia	Diabetes mellitus	Ischaemic heart disease	Cerebro-vascular disease	Pneumonia	Bronchitis, emphysema and allied conditions	Asthma	Gastric, duodenal and peptic ulcers	Chronic liver disease and cirrhosis	Chronic renal failure	Motor vehicle traffic accidents	Suicides and undeter-mined deaths	Year and quarter
(188)	(204-208)	(250)	(410-414)	(430-438)	(480-486)	(490-492, 496)	(493)	(531-533)	(571)	(585)	(E810-E819)	(E950-E959, E980-E989 exc. E9888)	
													Males
124	74	82	3,801	1,541	920	944	21	107	35	48	198	124	1971
128	76	91	3,930	1,357	1,237	852	17	108	45	61	170	135	1976
121	74	82	3,664	1,141	1,054	683	28	90	49	44	113	151	1981
120	75	134	3,463	1,071	460	725	33	85	56	38	130	154	1986
121	76	130	2,981	939	390	605	31	73	70	24	117	158	1991
123	72	127	2,854	886	361	573	27	69	70	14	109	157	1992
114	69	100	2,829	794	759	566	24	67	67	21	90	149	1993
109	68	97	2,595	755	679	494	23	67	67	20	86	148	1994
111	70	100	2,535	754	753	524	20	63	75	21	83	146	1995
104	65	96	2,410	743	725	480	19	63	88	19	87	137	1996
100	66	94	2,261	714	741	475	19	61	95	17	86	140	1997
99	67	94	2,223	708	717	462	18	60	107	18	86	153	1998‡
104	66	99	2,513	759	800	502	21	69	97	18	90	131	1996 Dec
102	66	110	2,588	825	1,119	699	22	68	93	19	79	138	1997 Mar
98	64	85	2,189	670	603	398	16	57	89	15	91	134	1997 Jun
101	68	87	1,976	637	531	347	20	53	89	17	90	145	1997 Sep
100	65	93	2,296	726	717	458	19	65	108	19	84	145	1997 Dec
94	64	99	2,419	758	843	560	17	64	107	18	93	158	1998 Mar‡
101	65	87	2,167	685	689	424	18	57	104	18	86	153	1998 Jun‡
100	67	86	1,980	637	552	363	17	55	109	16	76	144	1998 Sep‡
101	70	105	2,304	746	781	497	18	63	106	19	89	155	1998 Dec‡
													Females
32	47	89	1,668	1,352	623	193	25	44	26	30	80	84	1971
35	48	81	1,774	1,212	824	183	22	49	29	35	65	83	1976
35	46	66	1,601	1,012	741	155	30	57	36	28	39	81	1981
36	46	100	1,554	930	349	194	35	52	38	21	49	67	1986
34	43	95	1,404	809	324	211	30	46	45	13	44	51	1991
35	42	94	1,347	773	284	216	29	46	43	8	40	51	1992
34	43	73	1,330	711	569	223	27	45	43	12	34	48	1993
34	42	69	1,222	677	499	202	24	43	46	12	33	44	1994
32	41	72	1,179	677	553	227	24	42	49	11	29	46	1995
31	40	67	1,126	667	534	220	21	43	52	10	29	44	1996
31	43	65	1,060	639	559	225	23	41	55	9	28	45	1997
31	41	64	1,042	637	531	223	22	40	58	11	30	46	1998‡
31	42	68	1,181	686	587	243	22	45	49	11	31	43	1996 Dec
31	43	73	1,237	752	908	339	29	50	57	10	29	44	1997 Mar
30	38	59	1,013	608	424	178	19	40	53	9	27	48	1997 Jun
30	43	64	934	559	378	160	19	36	55	10	28	43	1997 Sep
32	47	66	1,061	640	530	227	23	38	55	9	30	46	1997 Dec
32	41	66	1,140	691	651	288	24	45	57	13	29	46	1998 Mar‡
32	35	61	1,020	614	493	198	19	41	54	11	34	43	1998 Jun‡
32	40	60	931	576	380	157	19	35	55	9	27	45	1998 Sep‡
29	46	69	1,068	661	598	250	24	40	65	11	30	50	1998 Dec‡

Notes to tables

Changes to tables
With the introduction of *Health Statistics Quarterly,* the previous *Population Trends* tables have been reviewed and some small changes introduced, in particular, a new table, Table 2.2, showing key demographic and health indicators for the constituent countries of the United Kingdom.

For most tables, years start at 1971 and then continue at five-year intervals until 1991. Individual years are shown thereafter. If a year is not present the data are not available.

Population
The estimated and projected populations of an area include all those usually resident in the area, whatever their nationality. Members of HM forces stationed outside the United Kingdom are excluded. Students are taken to be resident at their term-time addresses.

Figures for the United Kingdom do not include the population of the Channel Islands or the Isle of Man.

The population estimated for mid-1991 onwards are final figures based on the 1991 Census of Population with allowance for subsequent births, deaths and migration.

Live births
For England and Wales, figures relate to numbers occurring in a period; for Scotland and Northern Ireland, figures relate to those registered in a period. See also Note on page 63 of *Population Trends 67*.

Perinatal mortality
In October 1992 the legal definition of a stillbirth was changed, from baby born dead after 28 completed weeks of gestation or more, to one born dead after 24 completed weeks of gestation or more.

Expectation of life
The life tables on which these expectations are based use current death rates to describe mortality levels for each year. Each individual year shown is based on a three-year period, so that for instance 1986 represents 1985–87. More details may be found in *Population Trends 60,* page 23.

Deaths
Figures for England and Wales represent the numbers of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993. Provisional figures are registrations.

Figures for both Scotland and Northern Ireland represent the number of deaths registered in each year.

Age-standardised mortality
Directly age-standardised rates make allowances for changes in the age structure of the population. 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. Tables 2.2 and 6.3 use the European Standard Population. This is a hypothetical population standard which is the same for both males and females allowing standardised rates to be compared for each sex, and between males and females.

Abortions
Figures relate to numbers occurring in a period.

Marriages and divorces
Marriages are tabulated according to date of solemnisation. Divorces are tabulated according to date of decree absolute, and the term ‘divorces’ includes decrees of nullity.

Government Office Regions
Figures refer to Government Office Regions (GORs) of England which were adopted as the primary classification for the presentation of regional statistics from April 1997.

Health Regional Office areas
Figures refer to new health regions of England which are as constituted on 1 April 1996.

Sources
Figures for Scotland and Northern Ireland shown in these tables (or included in totals for the United Kingdom or Great Britain) have been provided by their respective General Register Offices, except for the projections in Table1.2 which are provided by the Government Actuary.

Rounding
All figures are rounded independently; constituent parts may not add to totals. Generally numbers and rates per 1,000 population are rounded to one decimal place (e.g. 123.4); where appropriate, for small figures (below 10.0), two decimal places are given (e.g. 7.62). Figures which are provisional or estimated are given in less detail (e.g. 123 or 7.6 respectively) if their reliability does not justify giving the standard amount of detail. Where, for some other reason, figures need to be treated with particular caution, an explanation is given as a footnote.

Latest figures
Figures for the latest quarters and years may be provisional (see note above on rounding) and will be updated in future issues when later information becomes available. Where figures are not yet available, cells are left blank. Population estimates and rates based on them may be revised in the light of results from future censuses of populations.

Report:

Legal abortions in England and Wales 1998

This report shows provisional figures relating to notifications received by 9 March 1999, in respect of terminations performed during 1998 under the Abortion Act 1967, on women normally resident in England and Wales.

Key observations:

- In 1998 a total of 177,332 were performed on residents of England and Wales (as shown in Table 1), an increase of 7,187 (4.2 per cent) compared with 1997.
- There was a rise in the number of abortions in all age groups when compared to 1997. Abortions rose by 11 per cent in the under 20 age group, by 6 per cent in the over 30 age group, but by only 1 per cent in the 20–29 age group.
- 74 per cent (131,372) of the terminations were purchased by the NHS, an increase of 6 per cent compared with 1997. Privately purchased terminations decreased by 1 per cent (299) compared with 1997.
- The overall abortion rate for women resident in England and Wales was 13.8 abortions per 1,000 women aged 14–49 (based on the mid-1997 population estimates) compared with a rate of 13.3 in 1997.
- 89 per cent of the terminations were performed before 13 weeks of gestation and 10 per cent were performed between 13 and 19 weeks' gestation, the same as last year.

Explantory notes:

Area of usual residence is derived from the woman's usual address of residence. Some women may have stated a temporary residence as their place of usual residence, therefore these figures should be treated with caution.

The data in the table relate to the Regional Offices and health authorities of England and Wales as created on 1 April 1996.

Longer term trends are shown in Table 4.2, and the graph on page 6 shows quarterly abortion rates from 1981 to 1998.

Table 1 **Legal abortions: Regional Office and health authority of residence by age group, gestation weeks and purchaser, 1998** *England and Wales*

Place of usual residence	Total*	Age group							Gestation weeks				Purchaser		
		Under 16	16–19	20–24	25–29	30–34	35–44	45+	Under 9	9–12	13–19	20+	NHS	NHS contract	Non–NHS
England and Wales	**177,332**	**3,748**	**33,152**	**45,632**	**40,260**	**30,352**	**23,676**	**509**	**73,436**	**84,413**	**17,180**	**2,303**	**87,048**	**44,324**	**45,960**
England	**169,558**	**3,513**	**31,393**	**43,586**	**38,637**	**29,172**	**22,770**	**484**	**70,424**	**80,572**	**16,342**	**2,220**	**82,708**	**41,992**	**44,858**
Wales	**7,774**	**235**	**1,759**	**2,046**	**1,623**	**1,180**	**906**	**25**	**3,012**	**3,841**	**838**	**83**	**4,340**	**2,332**	**1,102**
Regional Offices and health authorities															
Northern and Yorkshire	**17,079**	**520**	**3,814**	**4,537**	**3,547**	**2,573**	**2,044**	**43**	**7,089**	**8,069**	**1,728**	**193**	**13,199**	**1,384**	**2,496**
Bradford	1,315	46	300	325	291	201	149	3	394	720	182	19	984	62	269
County Durham	1,435	54	342	351	305	211	168	4	532	721	172	10	1,284	26	125
East Riding	1,593	56	357	442	317	235	183	3	739	723	112	19	1,350	68	175
Gateshead and South Tyneside	821	33	200	219	157	113	99	-	293	437	78	13	752	5	64
Leeds	2,430	45	476	729	522	349	302	7	908	1,187	300	35	1,716	115	599
Newcastle and North Tyneside	1,512	42	353	434	304	224	155	-	598	715	180	19	1,389	18	105
North Cumbria	786	30	173	217	141	120	105	-	435	289	56	6	751	1	34
Northumberland	678	15	157	169	125	115	95	2	350	272	49	7	643	7	28
Sunderland	894	32	223	233	191	119	95	1	294	472	123	5	798	14	82
Tees	1,492	68	364	408	291	223	136	2	838	498	145	11	1,421	8	63
Wakefield	776	25	162	195	161	137	92	3	331	374	61	10	420	70	286
North Yorkshire	1,750	43	396	419	354	278	248	12	698	904	125	23	1,295	93	362
Calderdale and Kirklees	1,597	31	311	396	388	248	217	6	679	757	145	16	396	897	304
Trent	**13,938**	**400**	**3,067**	**3,568**	**2,958**	**2,213**	**1,704**	**28**	**5,194**	**7,432**	**1,168**	**144**	**11,028**	**974**	**1,936**
Barnsley	562	24	109	133	120	101	75	-	184	306	66	6	434	21	107
North Derbyshire	906	25	201	195	206	160	117	2	500	332	64	10	688	104	114
South Derbyshire	1,420	32	316	380	290	226	175	1	514	764	120	22	1,116	66	238
Doncaster	884	34	212	233	187	138	78	2	376	445	59	4	448	298	138
Leicestershire	2,824	73	572	745	618	437	372	7	1,101	1,512	172	39	2,198	194	432
Lincolnshire	1,426	49	367	336	270	226	177	1	487	816	105	18	1,228	36	162
North Nottinghamshire	921	31	191	236	198	154	108	3	306	499	107	9	767	35	119
Nottingham	1,829	36	376	511	409	278	211	8	575	1,115	129	10	1,420	169	240
Rotherham	659	11	169	164	148	87	79	1	155	412	85	7	544	14	101
Sheffield	1,631	54	320	432	340	268	214	3	534	908	181	8	1,387	26	218
South Humber	876	31	234	203	172	138	98	-	462	323	80	11	798	11	67
Anglia and Oxford	**15,068**	**314**	**2,951**	**3,742**	**3,192**	**2,625**	**2,192**	**51**	**7,058**	**6,560**	**1,219**	**231**	**9,383**	**2,259**	**3,426**
Bedfordshire	1,784	39	384	433	374	272	273	9	960	633	160	31	1,247	218	319
Berkshire	2,735	52	501	663	623	477	410	9	1,399	1,055	236	45	716	711	1,308
Buckinghamshire	2,095	41	405	501	425	392	321	9	1,026	832	207	30	430	1,052	613
Cambridge and Huntingdon	1,136	23	199	308	226	198	178	4	484	598	41	13	978	12	146
East Norfolk	1,442	33	278	359	308	256	205	3	659	661	101	21	1,328	20	94
Northamptonshire	1,684	43	371	400	360	288	219	3	595	907	157	25	1,095	134	455
North West Anglia	988	19	188	237	241	158	142	3	344	531	93	20	763	63	162
Oxfordshire	1,894	34	332	512	367	355	289	5	1,041	685	139	29	1,670	36	188
Suffolk	1,310	30	293	329	268	229	155	6	550	658	85	17	1,156	13	141
North Thames	**39,336**	**439**	**5,565**	**10,403**	**10,060**	**7,407**	**5,350**	**112**	**17,574**	**17,788**	**3,465**	**509**	**16,389**	**9,768**	**13,179**
Barking and Havering	1,606	33	333	413	336	276	213	2	494	941	142	29	707	407	492
Barnet	1,707	11	189	459	433	349	260	6	983	605	99	20	864	149	694
Brent and Harrow	3,532	28	432	983	931	659	489	10	2,155	1,022	305	50	96	2,685	751
Camden and Islington	3,464	25	422	952	976	684	395	10	1,517	1,565	333	49	1,525	755	1,184
Ealing, Hammersmith and Hounslow	4,820	31	619	1,272	1,332	903	645	18	2,023	2,127	604	66	986	1,801	2,033
East London and The City	5,273	69	714	1,484	1,400	985	606	15	1,564	3,065	582	62	3,483	143	1,647
North Essex	2,586	42	456	636	570	460	412	10	1,027	1,355	177	27	1,446	382	758
South Essex	2,342	52	469	579	508	416	312	6	921	1,234	150	37	1,422	310	610
Hillingdon	1,150	24	207	287	261	209	160	2	450	567	115	18	288	504	358
Kensington, Chelsea and Westminster	3,222	14	315	892	1,027	575	392	7	1,905	1,066	224	27	1,686	325	1,211
Enfield and Haringey	3,626	35	455	945	917	721	544	9	1,754	1,510	304	58	1,596	722	1,308
Redbridge and Waltham Forest	2,796	30	396	730	688	551	395	6	1,217	1,307	240	32	719	958	1,119
East and North Hertfordshire	1,508	17	259	376	298	297	258	3	697	709	88	14	784	307	417
West Hertfordshire	1,704	28	299	395	383	322	269	8	867	715	102	20	787	320	597
South Thames	**29,908**	**494**	**4,710**	**7,365**	**7,250**	**5,541**	**4,444**	**104**	**12,657**	**13,550**	**3,218**	**483**	**8,689**	**11,415**	**9,804**
Bexley and Greenwich	1,889	42	291	469	473	356	256	2	754	949	148	38	1,145	259	485
Bromley	1,027	21	161	228	226	214	174	3	394	538	82	13	429	243	355
Croydon	2,077	41	347	453	504	412	314	6	1,175	708	172	22	39	1,567	471
East Kent	1,245	34	289	294	252	190	183	3	487	572	158	28	665	207	373
West Kent	2,923	56	564	679	626	518	466	14	1,329	1,237	297	60	230	2,062	631

Table 1 continued **Legal abortions: Regional Office and health authority of residence by age group, gestation weeks and purchaser, 1998** *England and Wales*

Place of usual residence	Total*	Age group							Gestation weeks				Purchaser		
		Under 16	16–19	20–24	25–29	30–34	35–44	45+	Under 9	9–12	13–19	20+	NHS	NHS contract	Non–NHS
Kingston and Richmond	1,381	19	165	338	360	247	243	9	764	496	104	17	603	107	671
Lambeth, Southwark and Lewisham	7,987	96	1,047	2,123	2,143	1,549	1,008	21	3,065	3,637	1,127	158	1,589	4,118	2,280
Merton, Sutton and Wandsworth	3,785	50	507	922	1065	728	504	9	1,732	1,627	379	47	1,807	553	1,425
East Surrey	1,115	20	203	255	233	194	205	5	456	550	94	15	608	111	396
West Surrey	2,033	19	319	503	424	390	371	7	1,124	712	169	28	299	1,078	656
East Sussex, Brighton and Hove	2,411	45	426	623	518	422	366	11	738	1,394	252	27	454	824	1,133
West Sussex	2,035	51	391	478	426	321	354	14	639	1,130	236	30	821	286	928
South and West	**17,016**	**412**	**3,482**	**4,218**	**3,539**	**2,900**	**2,409**	**56**	**5,928**	**9,231**	**1,657**	**200**	**10,347**	**2,809**	**3,860**
Cornwall and Isles of Scilly	1,080	28	233	257	206	175	176	5	278	726	63	13	886	60	134
Dorset	1,845	42	408	443	386	303	255	8	670	995	169	11	843	267	735
North and East Devon	1,033	24	210	254	200	193	150	2	394	550	79	10	953	18	62
Gloucestershire	1,504	39	324	341	302	264	228	6	452	857	178	17	1,171	88	245
North and Mid Hampshire	1,353	20	261	327	288	243	208	6	716	503	110	24	231	427	695
Portsmouth and South East Hampshire	1,603	41	311	412	372	268	197	2	393	1,025	170	15	1,333	92	178
Southampton and South West Hampshire	1,565	34	313	458	320	245	190	5	740	678	131	16	375	826	364
Isle of Wight	231	4	59	40	36	53	36	3	73	135	21	2	150	44	37
Somerset	1,149	36	248	247	231	199	183	5	467	533	135	14	948	75	126
South and West Devon	1,357	35	288	341	269	218	202	4	269	983	94	11	1,176	76	105
Wiltshire	1,485	44	296	334	310	254	243	4	700	612	152	21	325	566	594
Avon	2,811	65	531	764	619	485	341	6	776	1,634	355	46	1,956	270	585
West Midlands	**17,257**	**459**	**3,593**	**4,351**	**3,728**	**2,864**	**2,222**	**40**	**7,383**	**7,594**	**2,047**	**233**	**3,095**	**9,466**	**4,696**
Birmingham	4,077	92	811	1,094	884	673	513	10	1,617	1,758	637	65	94	2,727	1,256
Coventry	1,359	27	293	384	312	207	134	2	687	518	135	19	8	1,285	66
Dudley	975	26	191	244	225	166	121	2	379	443	141	12	18	631	326
Herefordshire	410	10	72	100	89	78	61	-	205	175	24	6	343	14	53
Sandwell	1,155	29	259	273	252	217	125	-	497	480	162	16	34	853	268
Shropshire	1,155	37	256	275	234	186	163	4	497	524	112	22	248	588	319
Solihull	559	22	108	117	113	102	95	2	225	248	77	9	45	204	310
North Staffordshire	1,181	44	273	330	238	163	132	1	482	611	78	10	736	117	328
South Staffordshire	1,570	39	359	346	326	257	239	4	704	680	172	14	829	261	480
Walsall	798	25	136	199	209	138	88	3	214	512	67	5	501	54	243
Warwickshire	1,620	39	325	401	355	275	216	9	822	594	174	30	40	1,373	207
Wolverhampton	944	26	209	236	218	148	107	-	340	452	140	12	22	487	435
Worcestershire	1,454	43	301	352	273	254	228	3	714	599	128	13	177	872	405
North West	**19,956**	**475**	**4,211**	**5,402**	**4,363**	**3,049**	**2,405**	**50**	**7,541**	**10,348**	**1,840**	**227**	**10,578**	**3,917**	**5,461**
Bury and Rochdale	1,123	31	264	290	258	162	116	2	494	479	137	13	560	133	430
North Cheshire	992	29	204	236	203	182	136	2	428	452	103	9	15	794	183
South Cheshire	1,829	29	392	442	362	312	284	8	614	990	192	33	708	770	351
East Lancashire	1,401	55	300	373	293	207	169	4	613	607	162	19	1,198	15	188
North West Lancashire	1,370	34	280	366	313	216	161	-	706	528	114	22	127	595	648
South Lancashire	701	19	140	165	164	117	95	1	250	398	45	8	378	66	257
Liverpool	2,002	27	412	619	437	290	210	7	521	1,270	201	10	1,381	252	369
Manchester	1,811	28	320	628	383	275	175	2	674	926	191	20	1,037	239	535
Morecambe Bay	712	25	164	186	151	85	97	4	231	428	46	7	612	22	78
St Helens and Knowsley	1,011	20	243	265	210	145	127	1	269	621	106	15	699	107	205
Salford and Trafford	1,237	26	249	340	287	185	148	2	504	640	83	10	606	128	503
Sefton	742	16	166	210	162	92	94	2	257	429	51	5	530	44	168
Stockport	973	18	203	261	220	155	113	3	473	433	62	5	354	268	351
West Pennine	1,421	44	319	329	327	218	181	3	608	663	137	13	727	145	549
Wigan and Bolton	1,623	50	321	428	360	272	186	6	705	791	101	26	1,008	120	495
Wirral	1,008	24	234	264	233	136	113	3	194	693	109	12	638	219	151
Wales	**7,774**	**235**	**1,759**	**2,046**	**1,623**	**1,180**	**906**	**25**	**3,012**	**3,841**	**838**	**83**	**4,340**	**2,332**	**1,102**
Gwent	1,454	50	330	345	333	219	169	8	642	634	158	20	406	952	96
Bro Taf	2,143	62	461	611	458	299	246	6	656	1,219	239	29	1,530	52	561
Dyfed Powys	1,044	31	220	295	211	161	120	6	451	477	111	5	918	30	96
North Wales	1,872	49	435	463	385	292	246	2	800	836	219	17	299	1,291	282
Morgannwg	1,261	43	313	332	236	209	125	3	463	675	111	12	1,187	7	67

* Includes cases with age not stated.

Report:

Death registrations 1998: cause, England and Wales

This report gives numbers of deaths **registered** in England and Wales in 1998 by age and sex, and for selected causes of death. It also compares death rates by age and sex with those corresponding to deaths which **occurred** in 1996 and 1997.

Deaths by sex and age of deceased

- 553,435 deaths were registered in 1998, compared with 558,052 registered in 1997, a decline of 0.8 per cent.
- Between 1997 and 1998 male deaths fell by 0.7 per cent, while female deaths fell by 0.9 per cent.

Table 1 shows death rates by sex and age, for the years 1996 to 1998, together with percentage changes.

- In 1998 the provisional crude death rates (based on mid-1997 population estimates) were 10.3 per thousand for males and 10.9 per thousand for females. These rates were unchanged from those of 1997.
- Between 1997 and 1998 the greatest percentage changes in age-specific death rates were for men aged 35–39 (up 7.5 per cent) and girls under 1 (down 5.9 per cent).
- The infant mortality rate in 1998 fell again, to 5.7 deaths per thousand live births.

Table 1 **Death rates per 1,000 population, by age and sex: 1996–1998*** *England and Wales*

Age group	1996*		1997*		1998+		Percentage change 1996/97		Percentage change 1997/98	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
All ages	10.5	11.0	10.3	10.9	10.3	10.9	-1.9	-0.6	-0.2	-0.4
Under 1**	6.8	5.3	6.5	5.3	6.3	5.0	-4.7	-0.5	-2.6	-5.9
1–4	0.3	0.2	0.3	0.2	0.3	0.2	-4.6	-5.1	1.0	1.3
5–9	0.1	0.1	0.1	0.1	0.1	0.1	12.3	0.3	-4.9	4.5
10–14	0.2	0.1	0.2	0.1	0.2	0.1	10.4	5.3	-4.9	-1.0
15–19	0.6	0.3	0.6	0.3	0.6	0.3	0.1	-3.2	1.6	1.4
20–24	0.8	0.3	0.9	0.3	0.9	0.3	7.3	1.2	-2.6	-4.9
25–29	0.9	0.4	0.9	0.4	0.9	0.4	-1.0	-9.1	3.5	5.6
30–34	1.0	0.5	1.0	0.5	1.0	0.5	-4.0	-5.1	5.0	1.2
35–39	1.3	0.8	1.2	0.8	1.3	0.8	-7.2	3.1	7.5	-5.2
40–44	2.0	1.3	1.9	1.3	1.9	1.3	-2.8	-2.1	0.0	2.4
45–49	3.1	2.0	3.0	2.0	3.0	1.9	-2.1	2.0	-1.9	-4.6
50–54	5.1	3.4	4.9	3.2	5.0	3.4	-4.4	-3.2	2.7	4.1
55–59	8.9	5.5	8.7	5.3	8.7	5.3	-2.8	-3.4	0.4	1.2
60–64	15.3	8.8	14.5	8.7	14.5	8.6	-5.3	-1.1	0.0	-1.5
65–69	26.1	15.3	25.2	14.9	24.3	14.3	-3.7	-2.7	-3.5	-3.9
70–74	44.2	26.2	42.6	25.7	41.5	25.0	-3.5	-1.7	-2.7	-2.8
75–79	68.6	42.1	67.0	41.5	69.8	42.9	-2.3	-1.3	4.1	3.4
80–84	111.5	73.4	109.1	72.4	104.0	68.8	-2.2	-1.3	-4.7	-5.0
85 and over	192.1	150.8	190.3	151.7	194.8	154.1	-0.9	0.6	2.3	1.5

* 1996 and 1997 rates are based on occurrences; 1998 rates on death registrations.
** Deaths per 1,000 live births.
\+ Provisional rates based on mid-1997 population estimates.

Figures 1 and 2 show the relative change in age-specific death rates for males and females, respectively, between 1988 and 1998.

The long-term decline in death rates continued for most sex/age groups. For both males and females the decline since 1988 has been greatest at ages 1–14 and 45–64.

The trend since 1988 in death rates at ages 15–44 is level for men, but declining slightly for women. In 1998 the male rate increased slightly, while that for females was static.

Deaths by underlying cause

Table 2 gives deaths by sex and age for selected underlying causes of death.

In 1998 the main causes of death were cancer (25 per cent), heart disease (22 per cent), respiratory disease (16 per cent), and cerebrovascular disease (10 per cent). This shows little change from 1997.

Explanatory notes:

Changes to coding of underlying cause of death

From 1993 an automated coding system has been used to assign cause of death. We have also reviewed and clarified some of the internal coding rules and procedures for dealing with particular types of certificate. Most of the changes from 1993 in numbers of deaths for particular conditions arise from a revised interpretation of WHO coding Rule 3, and from the absence of medical enquiries. More information about these changes, and their effect on mortality data, may be found in a recent volume.

Deaths assigned to external causes of injury and poisoning

There were particular problems in coding deaths for 1993 and 1994 which were due to external causes (ICD codes E800–E999). Since 1993 deaths from these causes have been coded clerically using information from coroners' certificates (including verdicts) to produce more reliable figures on suicides, homicides, and other deaths not from natural causes.[1]

Every death from an external cause will have some injury or injuries associated with it, and these are included in Table 2 (ICD codes 800–999). Where more than one injury is described for a particular death, ONS assigns a single injury code, in accordance with WHO guidelines.

Occurrences and registrations

Up to 1992 ONS (formerly OPCS) publications gave numbers of deaths registered in the data year. Since 1993 most of our published figures represent the number of deaths which occurred in the data year. This change has had little effect on annual totals but makes it easier to analyse seasonal variations in mortality. We also reviewed our production of deaths data by period of occurrence or registration, and decided to take two annual extracts. The main reason for this is the considerable number of late registrations, particularly for deaths from external causes.[2]

The first annual extract from our deaths database, produced in April following the data year, comprises registrations in that year. Outputs produced using this extract include this report and an area based report in *Population Trends*, VS tables, and the Public Health Common Dataset. The second extract is produced in the following September, and comprises occurrences in the data year. This extract forms the basis for annual mortality publications, with the exception of the two reports mentioned above. These new arrangements began in 1996, for annual extracts of 1995 data.

References

1 Office for National Statistics. *Mortality statistics: cause 1993 (revised) and 1994*, series DH2 no 21, part 3. The Stationery Office (London: 1996).

2 Office for National Statistics. *Mortality statistics: cause 1997*, series DH2 no 24, section 2.2. The Stationery Office (London: 1998).

Figure 1 Male age-specific death rates as a percentage of rates in 1988, England and Wales 1988–1998

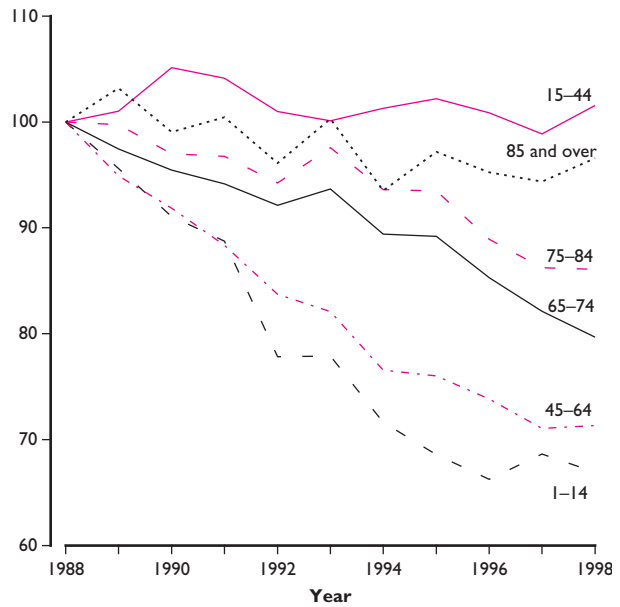


Figure 2 Female age-specific death rates as a percentage of rates in 1988, England and Wales 1988–1998

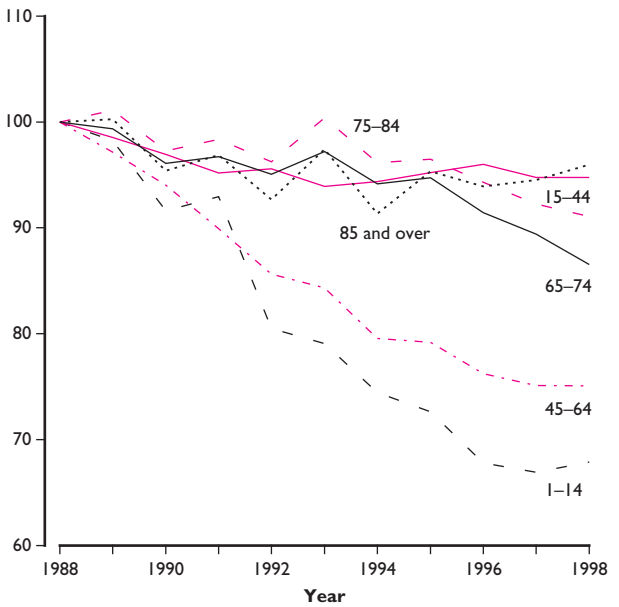


Table 2 **Deaths by age, sex and underlying cause, 1998 registrations** *England and Wales*

ICD9 code	Causes of death *		All ages	Age group: Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
	All causes, all ages	**M**	**264,202**	**2,058**	**415**	**563**	**2,366**	**4,111**	**5,886**	**13,606**	**28,947**	**65,989**	**90,048**	**50,213**
		F	**289,233**	**1,547**	**301**	**392**	**898**	**1,768**	**3,705**	**9,077**	**17,872**	**46,742**	**94,281**	**112,650**
	All causes, ages under 28 days	**M**	**1,379**	**1,379**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
		F	**1,031**	**1,031**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	All causes, age 28 days and over	**M**	**262,823**	**679**	**415**	**563**	**2,366**	**4,111**	**5,886**	**13,606**	**28,947**	**65,989**	**90,048**	**50,213**
		F	**288,202**	**516**	**301**	**392**	**898**	**1,768**	**3,705**	**9,077**	**17,872**	**46,742**	**94,281**	**112,650**
001–139	**Infectious and parasitic diseases**	**M**	**1,743**	**62**	**40**	**18**	**49**	**81**	**137**	**140**	**216**	**346**	**430**	**224**
		F	**1,636**	**64**	**29**	**13**	**41**	**60**	**71**	**72**	**136**	**290**	**427**	**433**
001–009	Intestinal infectious diseases	M	161	25	1	-	-	-	-	5	8	31	51	40
		F	252	15	2	-	-	-	-	3	7	27	72	126
010–018	Tuberculosis	M	257	-	-	-	1	7	13	18	39	65	80	34
		F	129	-	-	-	1	5	5	8	14	33	42	21
010–012	Pulmonary and other respiratory tuberculosis	M	198	-	-	-	1	4	11	11	28	54	59	30
		F	78	-	-	-	1	-	2	4	6	21	25	19
033	Whooping cough	M	3	3	-	-	-	-	-	-	-	-	-	-
		F	1	1	-	-	-	-	-	-	-	-	-	-
034–035	Streptococcal sore throat, scarlatina and erysipelas	M	3	-	-	-	-	-	-	-	2	-	-	1
		F	3	-	-	-	-	1	-	-	-	1	-	1
036	Meningococcal infection	M	91	12	25	7	27	8	3	4	3	1	-	1
		F	118	16	19	5	29	5	7	7	8	6	13	3
038	Septicaemia	M	559	9	8	3	3	6	19	29	46	133	194	109
		F	659	14	3	-	3	9	23	18	56	137	196	200
042–044	HIV infection	M	128	1	1	-	3	30	55	20	13	5	-	-
		F	34	2	-	-	-	12	11	5	3	-	1	-
055	Measles	M	2	-	-	-	2	-	-	-	-	-	-	-
		F	1	-	-	-	1	-	-	-	-	-	-	-
084	Malaria	M	8	-	-	-	-	1	2	2	3	-	-	-
		F	2	-	-	-	-	-	-	-	1	-	-	1
137	Late effects of tuberculosis	M	31	-	-	-	-	-	-	1	2	10	12	6
		F	27	-	-	-	-	-	-	2	-	5	17	3
140–239	**Neoplasms**	**M**	**72,055**	**14**	**55**	**151**	**202**	**384**	**1,132**	**4,432**	**11,063**	**22,871**	**23,403**	**8,348**
		F	**66,196**	**8**	**38**	**81**	**120**	**451**	**1,725**	**4,983**	**8,892**	**17,161**	**20,733**	**12,004**
140–208	**Malignant neoplasms**	**M**	**71,098**	**9**	**50**	**140**	**185**	**365**	**1,097**	**4,351**	**10,953**	**22,630**	**23,096**	**8,222**
		F	**65,191**	**7**	**31**	**78**	**113**	**441**	**1,698**	**4,923**	**8,807**	**16,934**	**20,387**	**11,772**
140–149	Malignant neoplasm of lip, oral cavity and pharynx	M	1,087	-	-	3	6	10	40	179	270	297	210	72
		F	604	-	-	1	1	6	19	43	88	185	153	108
150–159	Malignant neoplasm of digestive organs and peritoneum	M	20,611	-	-	3	5	59	309	1,360	3,365	6,699	6,576	2,235
		F	17,134	1	-	-	3	44	195	752	1,732	4,075	6,179	4,153
150	Malignant neoplasm of oesophagus	M	3,732	-	-	-	-	8	65	312	687	1,233	1,089	338
		F	2,202	-	-	-	-	4	15	76	200	540	821	546
151	Malignant neoplasm of stomach	M	3,942	-	-	-	1	9	58	186	558	1,311	1,356	463
		F	2,498	-	-	-	-	12	44	72	194	567	937	672
153	Malignant neoplasm of colon	M	4,994	-	-	2	-	17	52	279	776	1,567	1,668	633
		F	5,171	-	-	-	-	10	53	230	520	1,171	1,883	1,304
154	Malignant neoplasm of rectum, rectosigmoid junction and anus	M	2,778	-	-	-	-	4	38	198	450	937	851	300
		F	2,037	-	-	-	-	8	19	109	209	466	695	531
157	Malignant neoplasm of pancreas	M	2,819	-	-	-	1	7	49	218	495	904	870	275
		F	2,985	-	-	-	-	4	30	148	341	772	1,086	604

*The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths by age, sex and underlying cause, 1998 registrations** *England and Wales*

ICD9 code	Causes of death *		All ages	Age group: Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
161	Malignant neoplasm of larynx	M	579	-	-	-	-	1	2	52	137	208	136	43
		F	160	-	-	-	-	-	-	18	27	34	65	16
162	Malignant neoplasm of trachea, bronchus, and lung	M	19,041	-	-	-	-	13	149	1,015	3,230	6,923	6,168	1,543
		F	11,156	-	-	-	1	13	119	709	1,589	3,923	3,720	1,082
172	Malignant melanoma of skin	M	719	-	-	-	4	29	65	112	143	161	161	44
		F	749	-	-	-	3	26	59	86	112	184	184	95
173	Other malignant neoplasm of skin	M	230	-	-	-	-	1	2	8	21	50	84	64
		F	167	-	-	-	-	2	1	7	10	25	54	68
174	Malignant neoplasm of female breast	F	11,764	-	-	-	4	112	633	1,631	2,005	2,584	2,735	2,060
179–189	Malignant neoplasm of genitourinary organs	M	13,355	1	5	4	11	21	76	354	1,206	3,624	5,287	2,766
		F	9,472	-	2	5	6	100	324	850	1,521	2,470	2,718	1,476
179	Malignant neoplasm of uterus, part unspecified	F	468	-	-	-	-	1	6	34	62	111	154	100
180	Malignant neoplasm of cervix uteri	F	1,155	-	-	-	4	56	162	178	168	222	258	107
182	Malignant neoplasm of body of uterus	F	822	-	-	-	-	1	9	35	118	253	249	157
183	Malignant neoplasm of ovary	F	4,035	-	1	-	2	30	117	460	869	1,155	1,023	378
185	Malignant neoplasm of prostate	M	8,570	-	-	-	-	-	3	84	530	2,196	3,743	2,014
186	Malignant neoplasm of testis	M	75	-	-	-	11	11	14	19	6	8	4	2
188	Malignant neoplasm of bladder	M	2,969	-	-	-	-	1	13	85	322	854	1,103	591
		F	1,499	-	-	-	-	4	11	30	108	339	569	438
189	Malignant neoplasm of kidney and other and unspecified urinary organs	M	1,654	1	5	4	-	9	41	159	335	546	411	143
		F	1,073	-	1	5	-	5	16	103	162	296	315	170
191	Malignant neoplasm of brain	M	1,594	1	14	38	20	47	127	271	389	449	204	34
		F	1,224	1	5	27	19	41	86	172	269	341	216	47
200–208	Malignant neoplasm of lymphatic and haematopoietic tissue	M	5,311	4	13	62	82	108	193	456	831	1,552	1,539	471
		F	4,692	1	11	27	44	51	130	261	573	1,130	1,549	915
204–208	Leukaemia	M	1,923	4	12	53	59	48	68	135	244	533	574	193
		F	1,625	1	9	25	30	23	67	90	171	355	487	367
210–239	**Benign, in situ, other and unspecified neoplasms**	**M**	**957**	**5**	**5**	**11**	**17**	**19**	**35**	**81**	**110**	**241**	**307**	**126**
		F	**1,005**	**1**	**7**	**3**	**7**	**10**	**27**	**60**	**85**	**227**	**346**	**232**
240–279	**Endocrine, nutritional and metabolic diseases and immunity disorders**	**M**	**3,497**	**22**	**15**	**19**	**42**	**92**	**107**	**180**	**407**	**895**	**1,125**	**593**
		F	**4,024**	**13**	**10**	**22**	**45**	**37**	**66**	**113**	**326**	**738**	**1,346**	**1,308**
250	Diabetes mellitus	M	2,794	-	-	1	10	27	72	113	310	750	987	524
		F	3,129	-	1	2	5	13	34	74	218	599	1,120	1,063
260–269	Nutritional deficiencies	M	27	-	1	-	-	1	1	1	1	3	6	13
		F	44	-	-	-	-	-	3	1	2	6	10	22
280–289	**Diseases of blood and blood-forming organs**	**M**	**874**	**5**	**6**	**6**	**8**	**10**	**15**	**22**	**69**	**176**	**302**	**255**
		F	**1,055**	**2**	**3**	**2**	**3**	**4**	**11**	**25**	**54**	**152**	**330**	**469**
280–285	Anaemias	M	203	-	2	5	4	4	5	3	17	28	55	80
		F	434	1	3	2	3	2	8	6	15	47	111	236
290–319	**Mental disorders**	**M**	**3,642**	**-**	**-**	**-**	**175**	**304**	**222**	**133**	**116**	**330**	**1,209**	**1,153**
		F	**6,766**	**1**	**2**	**-**	**38**	**62**	**64**	**69**	**67**	**323**	**1,954**	**4,186**
290	Senile and presenile organic psychotic conditions	M	2,020	-	-	-	-	-	1	3	25	199	886	906
		F	5,093	-	-	-	1	-	-	3	23	192	1,498	3,376

* The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths by age, sex and underlying cause, 1998 registrations** *England and Wales*

ICD9 code	Causes of death *		All ages	Age group: Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
320–389	**Diseases of the nervous system and sense organs**	**M**	**4,669**	**51**	**59**	**71**	**137**	**172**	**204**	**294**	**420**	**892**	**1,601**	**768**
		F	**5,350**	**43**	**45**	**75**	**64**	**112**	**159**	**292**	**345**	**853**	**1,723**	**1,639**
320–322	Meningitis	M	118	11	11	3	4	7	8	16	20	22	13	3
		F	100	6	5	6	8	5	8	5	12	17	15	13
332	Parkinson's disease	M	1,482	-	-	-	1	-	-	2	18	283	776	402
		F	1,223	-	-	-	-	-	-	1	17	152	558	495
340	Multiple sclerosis	M	263	-	-	1	-	10	36	58	67	55	34	2
		F	474	-	-	-	-	11	39	133	103	111	61	16
345	Epilepsy	M	502	3	3	12	44	97	105	96	52	46	29	15
		F	355	1	6	11	24	55	61	42	27	44	47	37
390–459	**Diseases of the circulatory system**	**M**	**107,835**	**38**	**21**	**21**	**87**	**335**	**1,398**	**4,825**	**11,744**	**28,641**	**40,078**	**20,647**
		F	**117,976**	**24**	**28**	**20**	**59**	**230**	**550**	**1,679**	**4,810**	**17,416**	**43,617**	**49,543**
390–392	Acute rheumatic fever	M	50	-	-	-	-	4	1	4	7	14	20	-
		F	174	-	-	-	-	2	4	2	15	36	74	41
393–398	Chronic rheumatic heart disease	M	383	-	-	-	-	4	6	16	54	115	133	55
		F	1,068	-	1	-	1	2	5	22	85	269	412	271
401–405	Hypertensive disease	M	1,392	-	-	-	2	8	23	90	179	400	468	222
		F	1,711	-	-	1	1	1	9	40	93	285	646	635
410–414	Ischaemic heart disease	M	65,726	1	1	1	11	114	870	3,420	8,455	18,861	23,455	10,537
		F	54,764	-	1	-	6	27	148	712	2,573	9,554	21,309	20,434
410	Acute myocardial infarction	M	33,478	1	1	1	6	63	440	1,734	4,453	10,032	11,997	4,750
		F	26,866	-	1	-	5	18	85	391	1,409	5,242	10,930	8,785
415-429	Diseases of pulmonary circulation and other forms of heart disease	M	10,084	20	17	17	51	106	206	468	820	2,114	3,637	2,628
		F	16,161	11	22	14	31	81	118	240	561	1,882	5,242	7,959
430-438	Cerebrovascular disease	M	21,385	15	3	1	16	79	220	637	1,514	4,534	8,725	5,641
		F	36,004	10	3	5	13	80	220	540	1,144	4,039	12,836	17,114
433-434	Cerebral infarction	M	1,987	1	1	1	1	4	21	88	189	455	752	474
		F	2,861	-	1	-	1	8	19	37	80	358	1,025	1,332
440	Atherosclerosis	M	530	-	-	-	-	1	-	6	13	80	211	219
		F	987	-	-	-	-	-	-	3	7	57	282	638
451-453	Phlebitis, thrombophlebitis, venous embolism and thrombosis	M	686	1	-	-	1	6	32	65	78	198	222	83
		F	1,196	1	1	-	1	19	31	57	94	231	440	321
460–519	**Diseases of the respiratory system**	**M**	**40,363**	**85**	**41**	**33**	**55**	**131**	**248**	**750**	**2,326**	**7,939**	**16,084**	**12,671**
		F	**48,899**	**58**	**25**	**40**	**51**	**77**	**165**	**521**	**1,579**	**6,157**	**15,543**	**24,683**
480–486	Pneumonia	M	21,355	26	20	15	35	78	170	381	863	2,935	8,189	8,643
		F	32,745	30	14	23	31	44	97	247	559	2,383	9,500	19,817
487	Influenza	M	44	2	1	-	-	-	1	1	-	13	8	18
		F	67	2	-	1	-	1	1	-	1	5	19	37
490–496	Chronic obstructive pulmonary disease	M	15,018	3	3	13	11	26	50	276	1,168	4,158	6,404	2,906
		F	11,641	1	2	10	8	19	43	220	881	3,300	4,625	2,532
490–491	Bronchitis	M	1,085	2	-	-	-	1	1	27	107	303	413	231
		F	676	-	-	-	1	1	2	10	51	170	242	199
493	Asthma	M	498	-	2	13	9	21	33	48	82	121	119	50
		F	852	-	2	10	7	15	33	59	110	188	247	181
496	Chronic airways obstruction, not elsewhere classified	M	11,950	-	1	-	-	1	10	147	810	3,301	5,266	2,414
		F	9,192	1	-	-	-	2	3	101	614	2,655	3,798	2,018
520–579	**Disease of the digestive system**	**M**	**9,340**	**14**	**11**	**12**	**12**	**136**	**606**	**1,135**	**1,252**	**2,096**	**2,645**	**1,421**
		F	**11,596**	**15**	**9**	**9**	**13**	**69**	**279**	**607**	**901**	**1,944**	**3,772**	**3,978**

*The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths by age, sex and underlying cause, 1998 registrations** *England and Wales*

ICD9 code	Causes of death *		All ages	Age group: Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
531–533	Ulcer of stomach and duodenum	M	1,795	-	1	-	2	5	35	79	162	443	702	366
		F	2,114	-	-	2	1	5	12	36	90	352	808	808
540–543	Appendicitis	M	74	-	1	1	-	2	1	5	13	21	22	8
		F	67	-	-	1	1	1	1	4	5	12	22	20
550–553	Hernia of abdominal cavity	M	294	1	-	-	-	1	-	9	16	57	131	79
		F	424	1	-	-	-	-	3	8	13	49	165	185
562	Diverticula of intestine	M	430	-	-	-	-	2	3	15	24	110	188	88
		F	1,335	-	-	-	-	-	-	19	51	247	526	492
571	Chronic liver disease and cirrhosis	M	2,777	-	1	-	4	89	437	783	645	527	249	42
		F	1,699	1	2	1	-	36	198	370	408	373	255	55
580–629	**Diseases of the genitourinary system**	**M**	**3,037**	**6**	**-**	**2**	**5**	**27**	**26**	**66**	**139**	**512**	**1,235**	**1,019**
		F	**3,893**	**2**	**2**	**-**	**9**	**18**	**36**	**65**	**140**	**465**	**1,276**	**1,880**
580–589	Nephritis, nephrotic syndrome and nephrosis	M	1,417	6	-	1	3	11	16	38	62	261	581	438
		F	1,529	1	-	-	3	7	15	24	64	222	476	717
585	Chronic renal failure	M	540	1	-	-	1	4	6	10	16	102	223	177
		F	575	-	-	-	1	3	5	6	30	89	171	270
600	Hyperplasia of prostate	M	207	-	-	-	-	-	-	-	8	32	88	79
630–676	**Complications of pregnancy, childbirth and the puerperium**	**F**	**43**	**-**	**-**	**-**	**10**	**24**	**8**	**1**	**-**	**-**	**-**	**-**
630–639	Pregnancy with abortive outcome	F	8	-	-	-	1	5	1	1	-	-	-	-
640–646, 651–676	Direct obstetric causes	F	25	-	-	-	6	13	6	-	-	-	-	-
647–648	Indirect obstetric causes	F	10	-	-	-	3	6	1	-	-	-	-	-
680–709	**Diseases of the skin and subcutaneous tissue**	**M**	**297**	**-**	**-**	**1**	**2**	**2**	**8**	**13**	**18**	**52**	**83**	**118**
		F	**774**	**-**	**-**	**-**	**2**	**2**	**2**	**9**	**15**	**78**	**246**	**420**
710–739	**Diseases of the musculoskeletal system and connective tissue**	**M**	**891**	**-**	**1**	**4**	**4**	**14**	**12**	**26**	**78**	**170**	**318**	**264**
		F	**2,650**	**-**	**2**	**3**	**11**	**20**	**27**	**43**	**111**	**353**	**860**	**1,220**
714.0	Rheumatoid arthritis	M	126	-	-	-	-	-	1	6	14	42	49	14
		F	620	-	-	-	-	1	2	9	40	148	269	151
740–759	**Congenital anomalies**	**M**	**640**	**117**	**60**	**41**	**49**	**65**	**55**	**43**	**65**	**56**	**61**	**28**
		F	**613**	**117**	**46**	**24**	**31**	**58**	**39**	**57**	**59**	**76**	**74**	**32**
745–747	Anomalies of the heart	M	348	64	29	21	30	34	38	25	38	29	35	5
		F	300	54	25	12	18	28	20	21	26	42	42	12
760–779	**Certain conditions originating in the perinatal period**	**M**	**84**	**72**	**10**	**-**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**-**
		F	**40**	**30**	**7**	**-**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
764–765	Slow foetal growth and foetal immaturity	M	5	5	-	-	-	-	-	-	-	-	-	-
		F	1	1	-	-	-	-	-	-	-	-	-	-
767	Birth trauma	M	2	2	-	-	-	-	-	-	-	-	-	-
		F	2	1	1	-	-	-	-	-	-	-	-	-
768–770	Hypoxia, birth asphyxia and other respiratory conditions	M	58	47	9	-	-	1	1	-	-	-	-	-
		F	33	25	6	-	2	-	-	-	-	-	-	-
780–799	**Signs, symptoms and ill-defined conditions**	**M**	**3,091**	**162**	**19**	**3**	**32**	**84**	**95**	**130**	**70**	**106**	**428**	**1,962**
		F	**10,752**	**112**	**7**	**3**	**15**	**25**	**35**	**36**	**39**	**94**	**1,191**	**9,195**
797	Senility without mention of psychosis	M	2,322	-	-	-	-	-	-	-	-	18	375	1,929
		F	10,252	-	-	-	-	-	-	-	-	42	1,117	9,093
798.0	Sudden infant death syndrome	M	142	140	2	-	-	-	-	-	-	-	-	-
		F	101	101	-	-	-	-	-	-	-	-	-	-

* The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths by age, sex and underlying cause, 1998 registrations** *England and Wales*

ICD9 code	Causes of death *		All ages	Age group: Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
800–999	**Injury and poisoning**	**M**	**10,765**	**31**	**77**	**181**	**1,507**	**2,273**	**1,620**	**1,417**	**964**	**907**	**1,046**	**742**
		F	**5,939**	**27**	**48**	**100**	**384**	**519**	**468**	**505**	**398**	**641**	**1,189**	**1,660**
800–829	Fractures	M	1,508	-	6	24	106	124	95	101	107	192	334	419
		F	2,048	-	3	13	27	23	26	37	52	133	560	1,174
850–869	Intracranial injury (excluding skull fracture) and internal injuries of chest, abdomen and pelvis	M	3,155	9	18	89	625	596	416	374	278	289	300	161
		F	1,335	7	18	53	154	130	86	130	120	184	243	210
940–949	Burns	M	193	-	7	2	13	29	23	25	27	19	35	13
		F	121	1	3	1	6	8	15	9	8	17	18	35
950–957	Injury to nerves and spinal cord	M	35	-	1	1	2	7	2	5	5	5	6	1
		F	20	-	-	-	1	2	-	2	1	4	6	4
960–989	Poisoning and toxic effects	M	2,308	2	12	17	285	679	503	387	170	127	90	36
		F	1,125	4	8	16	110	211	215	181	111	124	96	49
994.1	Drowning and non-fatal submersion	M	390	2	18	11	41	72	64	60	51	39	23	9
		F	150	1	4	4	4	22	10	31	15	25	27	7
E800–E999	**External causes of injury and poisoning**	**M**	**10,765**	**31**	**77**	**181**	**1,507**	**2,273**	**1,620**	**1,417**	**964**	**907**	**1,046**	**742**
		F	**5,939**	**27**	**48**	**100**	**384**	**519**	**468**	**505**	**398**	**641**	**1,189**	**1,660**
E800–E949	Accidents and adverse effects	M	6,214	15	61	160	894	1,035	710	648	518	649	847	677
		F	4,409	13	39	82	225	234	198	257	231	473	1,059	1,598
E800–E848	Transport accidents	M	2,481	-	15	100	622	553	319	258	185	185	170	74
		F	919	-	17	58	162	120	65	87	81	127	143	59
E810–E819	Motor vehicle traffic accidents	M	2,273	-	13	93	588	518	283	223	159	168	155	73
		F	882	-	15	58	157	116	60	82	76	123	140	55
E850–E869	Accidental poisoning by drugs, medicaments and biologicals	M	740	1	3	3	132	265	157	99	40	25	13	2
		F	289	-	1	2	37	65	64	53	23	17	18	9
E880–E888	Accidental falls	M	1,538	-	3	7	26	51	69	124	133	243	407	475
		F	2,251	-	2	7	6	12	22	55	61	167	626	1,293
E890–E899	Accidents caused by fire and flames	M	243	-	13	7	15	28	27	29	22	36	46	20
		F	163	3	7	6	8	12	18	14	15	25	23	32
E900–E929	Other accidents including late effects	M	1,073	13	26	42	93	135	133	131	119	120	173	88
		F	616	10	11	7	10	23	24	38	38	92	193	170
E900–E909	Accidents due to natural and environmental factors	M	101	-	-	1	1	4	5	9	16	14	31	20
		F	106	-	-	1	1	2	1	3	4	18	42	34
E910–E929	Accidents caused by submersion, suffocation and foreign bodies, other accidents and late effects of accidental injury	M	972	13	26	41	92	131	128	122	103	106	142	68
		F	510	10	11	6	9	21	23	35	34	74	151	136
E950–E959	Suicide and self-inflicted injury	M	2,880	-	-	2	333	787	577	509	297	178	149	48
		F	827	-	-	5	72	152	140	136	108	101	73	40
E960–E969	Homicide	M	208	5	6	5	30	62	40	27	14	12	7	-
		F	101	3	4	4	18	22	17	11	6	6	8	2
E980–E989	Injury undetermined whether accidentally or purposely inflicted	M	1,462	11	10	14	250	388	293	233	135	68	43	17
		F	602	11	5	9	69	111	113	101	53	61	49	20
E950–E959, E980–E989 less E988.8	Suicides and undetermined injuries	M	4,054	3	4	8	530	1,112	816	701	399	237	183	61
		F	1,303	1	1	8	121	239	232	218	155	157	118	53

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