

Health Statistics Quarterly

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Health Statistics Quarterly and *Population Trends* are journals of the Office for National Statistics. Each is published four times a year in February, May, August and November and March, June, September and December, respectively. In addition to bringing together articles on a wide range of population and health topics, *Health Statistics Quarterly* and *Population Trends* contain regular series of tables on a wide range of subjects for which ONS is responsible, including the most recently available statistics.

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Annual subscription, including postage, is £100; single issues are £27.50.

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Health Statistics Quarterly and *Population Trends* can be viewed or downloaded as Adobe Acrobat PDF files from the National Statistics website www.statistics.gov.uk/products/p6725.asp (*Health Statistics Quarterly*) or www.statistics.gov.uk/products/p6303.asp (*Population Trends*).

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Title \ Issue	Spring	Summer	Autumn	Winter
<i>Health Statistics Quarterly</i>	by 11 Sept	by 11 Dec	by 22 Mar	by 21 June
<i>Population Trends</i>	by 23 Oct	by 2 Feb	by 4 May	by 26 July

Please send to:

Clare Parrish, executive secretary
Health Statistics Quarterly
Office for National Statistics
Zone D2/22
1 Drummond Gate
London SW1V 2QQ
Tel: 020 7533 5125
E-mail: ian.thurman@ons.gsi.gov.uk

Contact points at ONS

People with enquiries about the statistics published regularly in *Health Statistics Quarterly* and *Population Trends* can contact the following enquiry points.

Topic enquiries

Abortions: 020 7972 5537 (Department of Health)

E-mail: abortion.statistics@dh.gsi.gov.uk

Births: 01329 813758

E-mail: vsob@ons.gsi.gov.uk

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General enquiries

National Statistics Customer Contact Centre

Room 1015 Government Buildings

Cardiff Road

Newport NP10 8XG

Tel: 0845 601 3034

E-mail: info@statistics.gsi.gov.uk

Website: www.statistics.gov.uk

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ISBN 0-230-00315-X

ISSN 1465-1645

in brief

Leading causes of death in England and Wales – response to the consultation

ONS published a consultation document on ranking leading causes of death in England and Wales on 31 January 2006. Users were invited to comment on the proposals put forward for future routine tabulation of the leading causes of death. There was a six-week period of consultation for comments, which ended on 13 March 2006.

ONS proposed in its consultation document to use a ranking list developed by the World Health Organization, which split cancers by site and accidents by mechanism. This list has been modified slightly for use in England and Wales.

The responses were on the whole in agreement with the proposals. Accordingly ONS decided

to continue with its proposal to provide routine tabulations of the leading causes of death in England and Wales according to the WHO proposed ranking list which splits cancers by site and accidents by mechanism. In the annual report on death registrations by cause of death in 2005 (see page 46), this tabulation is provided for the first time.

Revision of stillbirths in England and Wales in 2004

It has recently come to light that some register offices in England and Wales failed to notify ONS, in line with regulations, of some stillbirths that occurred in 2004. The result is that the perinatal mortality figures (numbers and rates) for 2004 given in reference tables 2.1 and 6.2 in *Health Statistics Quarterly* (and in *Population Trends*) are undercounts. In addition, the stillbirth and perinatal mortality figures for some areas presented in the Report on Infant and perinatal mortality, 2004: health areas, which was published in *Health Statistics Quarterly* 27, Autumn 2005 edition, are undercounts.

Similarly, the stillbirth and perinatal mortality figures for 2004 given in other ONS publications are also undercounts. These publications include *Mortality statistics: Childhood, infant and perinatal 2004* (series DH3 no.37) published on 28 March 2006, *Key Population and Vital Statistics 2004* (series VS no.31, PP1 no. 27), published on 27 April 2006, and *Birth statistics 2004* (series FM1 no. 33) published on 15 December 2005.

Work is currently underway to ensure all stillbirths that occurred in both 2004 and 2005 are correctly identified for inclusion in published figures. ONS aims to publish revised stillbirth and perinatal mortality figures for 2004, with the new figures for 2005, as part of the report on Infant and perinatal mortality, 2005, scheduled for publication in *Health Statistics Quarterly* 31 in August 2006.

Recent publications

Key Population and Vital Statistics, 2004 Series VS No. 31, PP1 No. 27 (Palgrave Macmillan, £40, April, ISBN 1-4039-9385-0).

Mortality statistics: childhood, infant and perinatal, England and Wales, 2004. Series DH3 No. 37 (March, available at www.statistics.gov.uk/statbase/Product.asp?vlnk=160).

Population Trends 123 (Palgrave Macmillan, £27.50, March, ISBN 0-230-00318-4).

Regional Trends 39 (Palgrave Macmillan, £41, May, ISBN 1-4039-9071-9).

Standardised Mortality Ratios for deaths under 85 years in wards in England and Wales, 1999–2003 (April, available at www.statistics.gov.uk/statbase/Product.asp?vlnk=14359).

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Health indicators

England and Wales

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

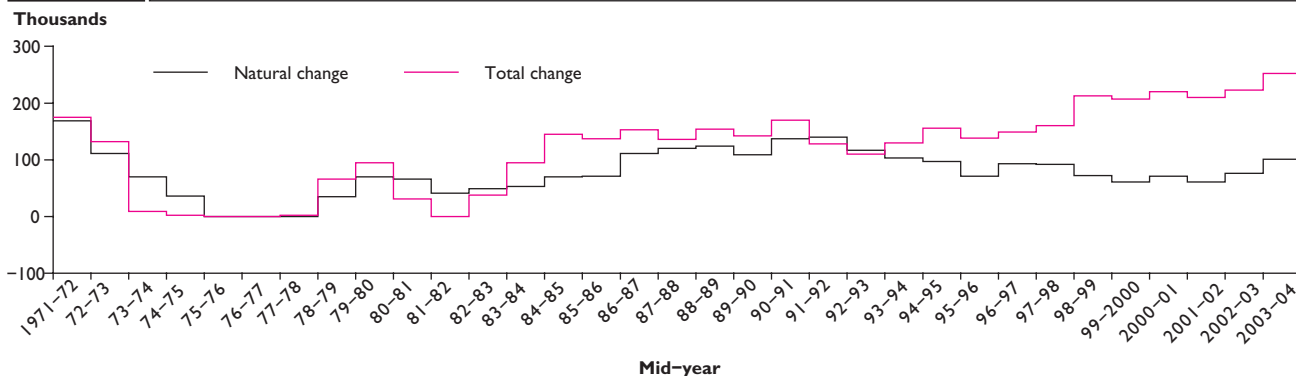


Figure B Age-standardised mortality rate¹

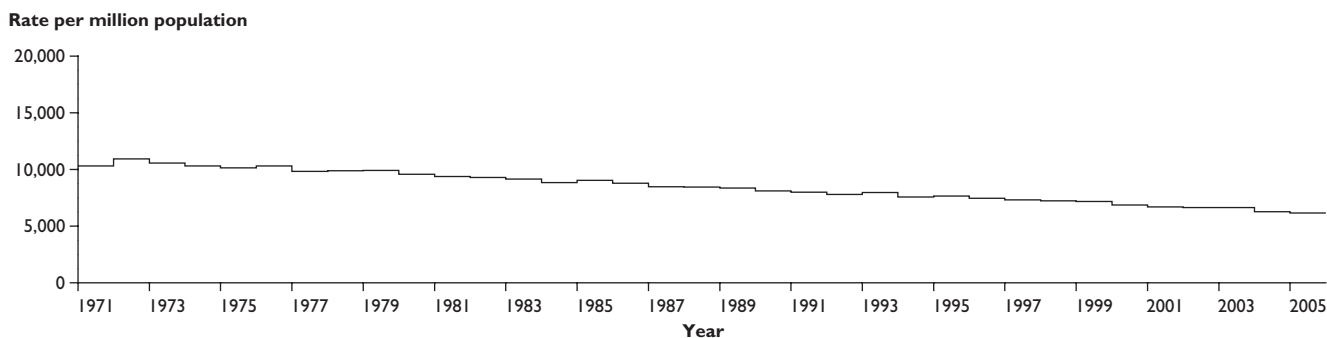


Figure C Infant mortality (under 1 year)

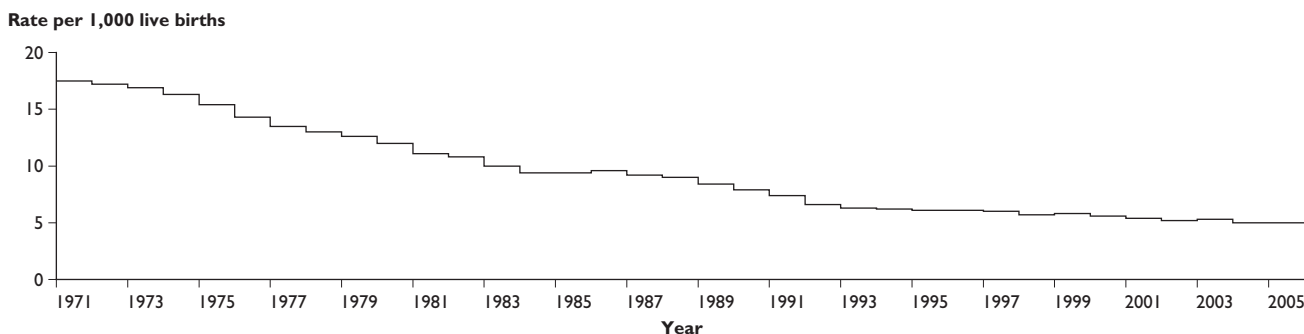
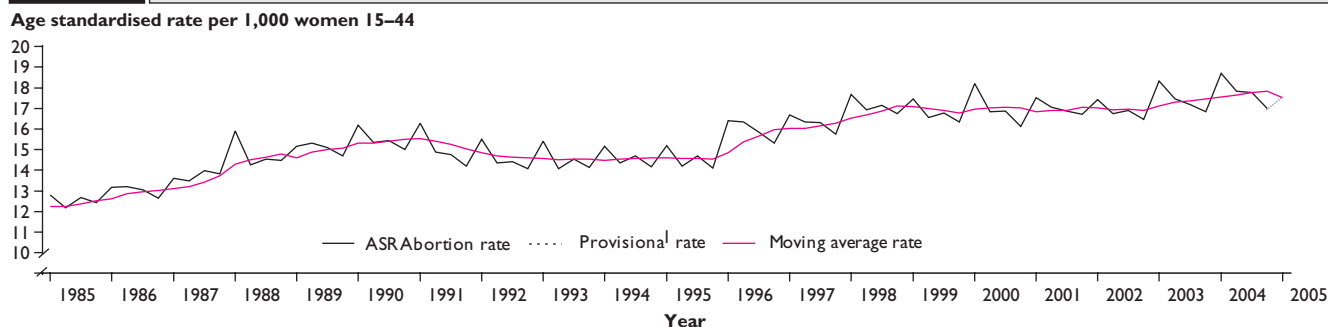


Figure D Age-standardised quarterly abortion rates – residents²



¹ The age-standardised mortality rate for 2004 is based on mid 2004 population estimates published on the 25 August 2005.

² Rates for 2004 and March quarter 2005 are based on 2004 population projections.

Trends in mortality from Alzheimer's disease, Parkinson's disease and dementia, England and Wales, 1979–2004

Clare Griffiths and Cleo Rooney
Office for National Statistics

In this article we present trends in mortality from Alzheimer's disease, Parkinson's disease and dementia in England and Wales from 1979 to 2004. We describe the impact of mortality coding changes on the underlying cause of death, particularly the introduction of ICD-10 in 2001. We present rates for all mentions of the conditions on death certificates to interpret trends better. Mortality rates for the three conditions showed varying trends over the time period examined. Between 1985 and 2004, Alzheimer's disease showed a dramatic increase. Trends in mentions of dementia differed between males and females, with rates being relatively stable among males, but increasing among females. Rates for Parkinson's disease declined over this period.

INTRODUCTION

Dementia is the loss of intellectual ability. People with dementia may become confused and unable to remember things or lose skills they once had, including the ability to perform normal daily activities. Eventually, they may not recognise family members or friends and may show agitated behaviour. Although dementia is more common in older adults, it is not a normal consequence of ageing.¹ Dementia may be the result of a range of diseases and pathological processes, the commonest of which are described briefly below. However, it should be noted that it is not always possible to draw a clear distinction between different dementing illnesses clinically during life or pathologically post mortem.²

Alzheimer's disease is the single most common cause of dementia in the developed world. People with Alzheimer's disease lose functioning nerve cells in areas of the brain that deal with intellectual ability and memory. Alzheimer's disease usually affects older adults but can sometimes begin in younger individuals.¹ The causes of Alzheimer's disease are not known, but risk factors include family history of the disease and advanced age.¹

Vascular dementia is usually caused by cumulated cerebral damage from very small 'strokes' over a long time that affect blood flow to areas of the brain related to memory and thinking. Some neurological diseases, such as Parkinson's disease, which is a brain disease that causes tremors and muscle stiffness, can cause dementia because of their effects on brain tissue. Parkinson's disease is less common as a cause of dementia than Alzheimer's disease or vascular dementia. Infections that can cause dementia include HIV, tuberculosis, syphilis, meningitis and encephalitis.¹

It is important to examine trends in mortality from dementia, Alzheimer’s disease and Parkinson’s disease, as mortality represents an important aspect of the public health burden of these conditions. In addition, as the population ages, and mortality from circulatory diseases and cancer declines, these conditions are likely to increase both in prevalence and in contribution to mortality. Equally, correct interpretation of changes in mortality rates over time is vital to understanding the underlying trends in mortality. Previous analysis of trends in dementing illnesses showed a dramatic increase in mortality from Alzheimer’s disease, over the period 1979 to 1996,³ and an increase in mortality from dementias from 1993 to 1996.⁴ Analyses of mortality from Parkinson’s disease showed that rates fell between 1960 and 1980, with an increase from 1980 to 1989. Part of the increase in the 1980s was due to changes in coding practices in England and Wales (described in this article).⁵

In this article we present trends in dementia, Alzheimer’s disease and Parkinson’s disease in England and Wales from 1979 to 2004, updating previous analyses and including revised population estimates. Because of the difficulty in distinguishing between Alzheimer’s disease and other forms of dementia in some cases, and because the use of these terms by doctors certifying the cause of death may have changed over the period studied, we have also presented trends for these two categories combined. We describe the impact of past mortality coding changes on trends in the underlying cause of death for each of the three conditions, particularly focussing on the introduction of the International Classification of Diseases, Tenth Revision (ICD-10) in 2001.

METHODS

We have examined mortality from three conditions – Alzheimer’s disease, Parkinson’s disease, and dementia – defined as vascular and unspecified dementia using ICD-10 and as dementia and psychosis using ICD-9. Mortality data for each of the three conditions examined were extracted from the deaths databases held by the Office for National Statistics (ONS). The codes from ICD-10 and ICD-9 used to select each condition are shown in Box One. 1979 was chosen as the start year for analysis because this was the first year that ICD-9 coding was used in England and Wales. ICD-10 was introduced in 2001.

Box one		
ICD codes used to define specific conditions		
	ICD-10	ICD-9
Dementia	F01, F03	290, 294.9, 298.9
Alzheimer’s disease	G30	331.0
Parkinson’s disease	G20	332.0

Changes in the rules used by ONS and its predecessors to select the underlying cause of death from all of the conditions mentioned on the death certificate can have a dramatic impact on mortality rates for particular conditions. Previous analysis has shown that the three conditions examined here are particularly affected. Below we describe the major changes in mortality coding that have taken place during the time period 1979 to 2004.

For this reason, we have also examined trends in mortality rates for the three conditions where they were mentioned on the death certificate, as well as rates for the underlying cause of death. This allows us to see the underlying trend, regardless of changes to coding rules, for chronic conditions such as these. This type of analysis has been used for other conditions such as diabetes, and chronic obstructive pulmonary disease.^{6,7} Data on ‘mentions’ are available for 1985, 1986 and 1993 onwards.

In order to examine changes occurring as a result of the introduction of ICD-10 we used data from the bridge coding study carried out by ONS.⁸⁻¹⁰ Box Two describes the methods used in this study.

Box two

Bridge coding study: methods

To understand trends in cause-specific mortality spanning the change from ICD-9 to ICD-10, we need to measure the effect of this change on the proportion of deaths attributed to different causes of death. This is done using bridge coding, that is coding a sample of death certificates independently to both ICD-9 and ICD-10, and comparing the resulting underlying causes of death. ONS bridge-coded mortality data for all deaths registered in 1999. The first step in this process is to identify equivalent codes or code groups in the two revisions which represent the same causes. In most cases this is not contentious, and the same groupings have been used by various authors and national statistics offices.

The results can then be presented as comparability ratios of the numbers of deaths assigned to a given disease or group of diseases in the two revisions. These are simply the ratio of the number of deaths coded to a cause in ICD-10 to the number coded to the equivalent cause in ICD-9. They measure the net effect of all changes to a particular cause of death. Analysis can also be carried out of reassignments of conditions from one code to another between ICD-9 and ICD-10, to look at changes in more detail. This type of analysis is presented in this paper. Comparability ratios for the conditions examined have been published elsewhere, for males and females separately,^{8,10} and are presented here for persons.

To take into account differences in age/sex distributions over time, we calculated directly age-standardised mortality rates for males and females separately, using the European Standard Population. Revised mid-year population estimates based on the 2001 Census were used to calculate the rates for 1982 to 2002. For 1992 to 2002, these were final revised populations published in Autumn 2004. For 1982 to 1991, these were final revised populations published in Spring 2003. Populations prior to 1981 were not revised following the 2001 Census.

CHANGES TO MORTALITY CODING, 1979–2004

Introduction of ICD-9 – 1979

ICD-9 was introduced in 1979 in England and Wales. It was structurally very similar to its predecessor, ICD-8. However, Alzheimer’s disease was separated from dementia in the classification so that the disease process could be identified separately from the resulting dementia.¹¹ In ICD-8 it had been grouped with pre-senile dementia. This meant that trends in Alzheimer’s disease could be examined separately from 1979 onwards.

ICD-9 Rule 3 – 1984

A deliberate broadening of the application of ICD-9 selection Rule 3 by the Office of Population Censuses and Surveys (OPCS, now ONS) from 1984 to 1992 also had an impact on mortality statistics.¹² This rule allows a condition which is reported in either Part I or II of the death certificate to be selected as the underlying cause over the condition selected using the other coding rules if the latter is obviously a direct consequence of the former condition. Between 1984 and 1992, the version of Rule 3 used by OPCS meant that when the underlying cause as recorded on Part I of the certificate was classifiable to one of the conditions listed in Box

Box three

Conditions to which Rule 3 was applied during 1984 to 1992

ICD-9	Condition
415.1	Pulmonary embolism
427.5	Cardiac arrest
428	Heart failure
451.1	Phlebitis and thrombophlebitis of deep vessels of lower extremities
451.2	Phlebitis and thrombophlebitis of lower extremities, unspecified
451.9	Phlebitis and thrombophlebitis of unspecified sites
453.9	Venous embolism or thrombosis of unspecified site
485	Bronchopneumonia, unspecified
486	Pneumonia, unspecified
514	Pulmonary congestion or hypostasis
572.8	Hepatic failure or liver failure

Three, if there was a major condition mentioned elsewhere on the certificate, the major condition was selected instead, whether or not a causal sequence could be presumed.¹³

This had the effect of increasing the number of deaths assigned to chronic debilitating conditions like dementia, Alzheimer’s disease and Parkinson’s disease as the underlying cause.

Introduction of automatic cause coding and suspension of medical enquiries – 1993

In 1993, OPCS introduced automatic cause coding, meaning that 80 per cent of death certificates were coded by computer software (ACCS) supplied by the National Centre for Health Statistics (NCHS) in the US, instead of being coded manually by cause of death coders. This software used the international interpretation of Rule 3, used in England and Wales between 1979 and 1983. The effect of introducing automatic cause coding was to reverse the changes seen between 1984 and 1992, causing a substantial drop in the number of deaths assigned to chronic debilitating

conditions.¹² In addition, at the same time OPCS suspended its system of medical enquiries, however this had almost no impact on mortality from dementia, Alzheimer’s disease or Parkinson’s disease.¹⁴

Introduction of ICD-10 – 2001

The introduction of ICD-10 in 2001 represented the greatest change in the ICD in over 50 years. There were three main types of change. The first character of each code became alphabetic rather than numeric – enabling the expansion of the number of codes to provide for recently recognised conditions and more detail about common diseases. Some diseases and groups of conditions moved between ICD Chapters to reflect current ideas of aetiology and pathology. There were several changes to the rules governing selection of the underlying cause of death, including a reduction in the number of rules from 9 to 5.¹⁵ The changes in the application of Rule 3 had the biggest impact. In ICD-10 the list of conditions affected by Rule 3 is more clearly defined than in ICD-9 and broader in scope. This internationally agreed interpretation is used in the automated coding software produced by NCHS. The impact of this was to reduce the number of deaths assigned to conditions such as pneumonia and to increase the number of deaths assigned to chronic debilitating diseases, in a similar but less marked way to that seen between 1984 and 1992. There has also been a change in the coding of Alzheimer’s disease depending on the exact terminology used. In ICD-9, if dementia (unspecified, or specified as senile/presenile) and Alzheimer’s disease were both mentioned on the certificate, whether in a ‘due to’ sequence or not, the code for the dementia was usually selected as the underlying cause. In ICD-10, such combinations will usually result in Alzheimer’s disease being coded as the underlying cause.^{9,16}

PATTERNS OF MORTALITY AND INTERPRETATION OF TRENDS, 1979–2004

Alzheimer’s disease

Between 1985 and 2004, the age-standardised mortality rate for any mention of Alzheimer’s disease increased from a very low level of less than 1 per 100,000 in both sexes in 1985 to 6.8 per 100,000 for males and 7.9 per 100,000 for females in 2004; an eight-fold increase for males and a 12-fold increase for females (Figure 1).

Figure 1 Directly age-standardised mortality rates for Alzheimer’s disease, Parkinson’s disease and dementia, all mentions, 1979–2004

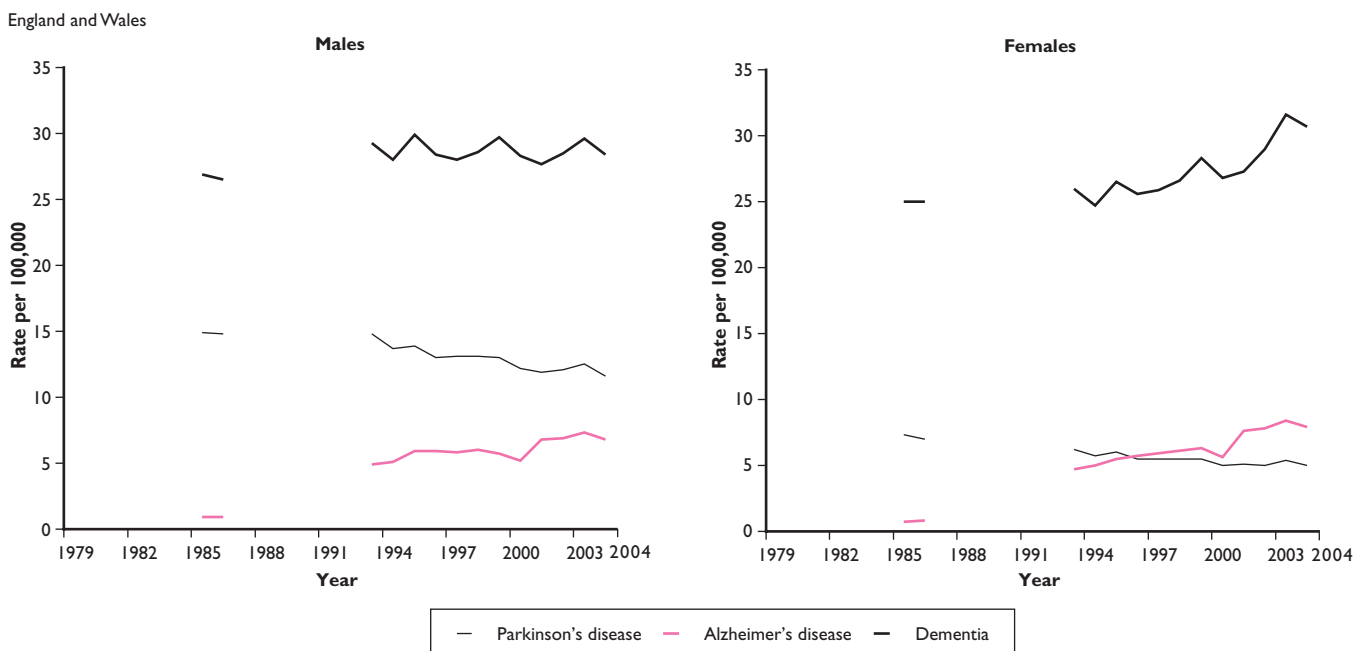


Figure 2 shows the effects of the changes in selection rules on deaths where Alzheimer’s disease was the underlying cause of death. Rates were very low up to 1984, with a steady increase from then until 1992, followed by a drop in 1993, with the introduction of automatic cause coding, then a big jump in 2001 when ICD-10 was introduced. This increase in 2001 brings rates in line with what might have been expected if the rates from 1984 to 1992 had continued their increase (Figure 2). In 1985 and 1986 and from 2001 onwards about 65 per cent of all mentions of Alzheimer’s disease on the death certificate were selected as the underlying cause of death, compared with between 35 and 45 per cent between

1993 and 2000. This percentage was generally higher for females than for males (Table 1).

Looking at age-specific patterns, rates increased markedly with age, as would be expected. Rates for females aged 85–89 increased the most over time (Figure 3). Before 1999, rates for males and females were fairly similar in each age group examined, but from 1999 onwards, rates have been consistently higher among females, ranging from 4 per cent higher in the 65–74 age group to 24 per cent higher in the 90 and over age group in 2004.

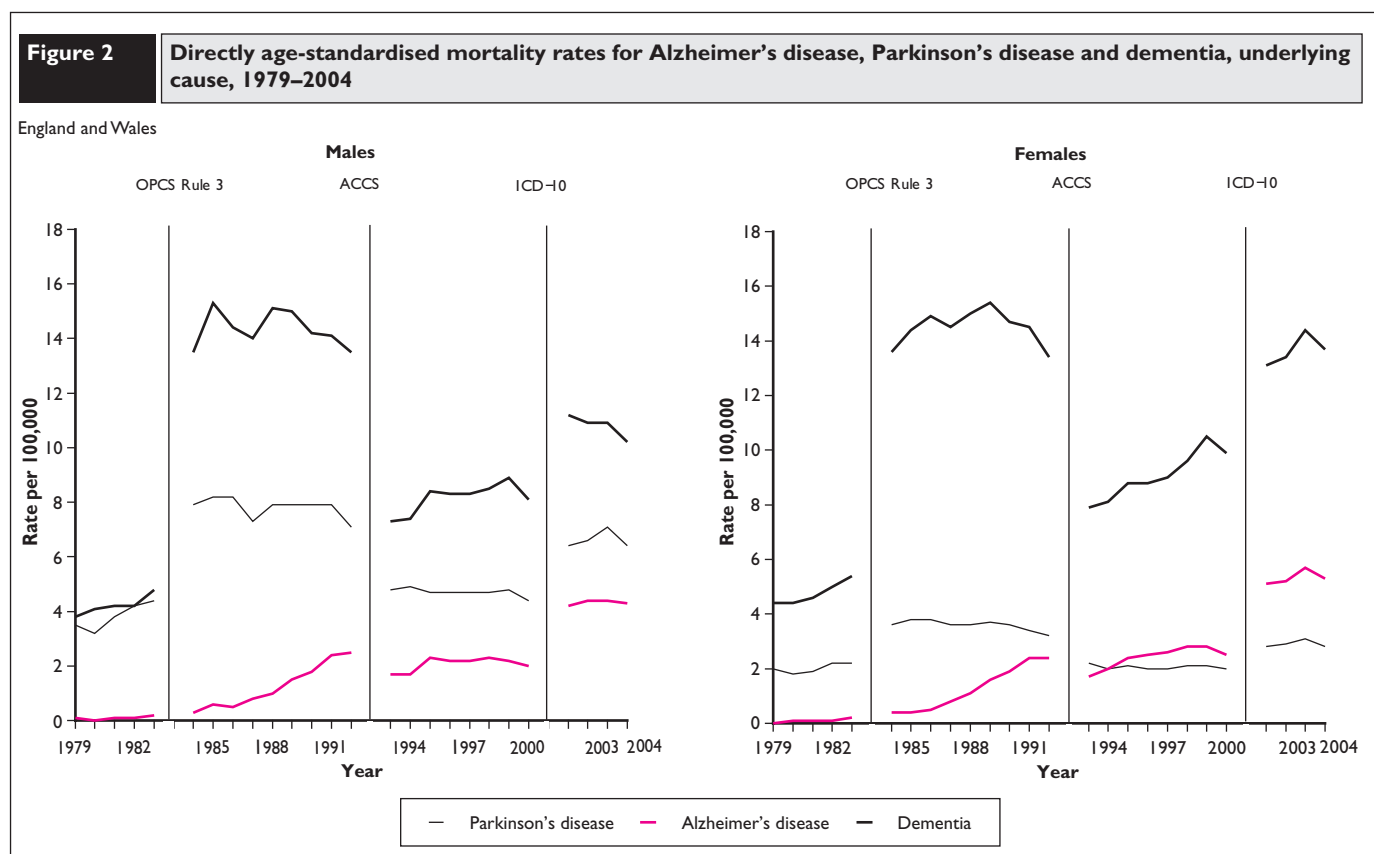
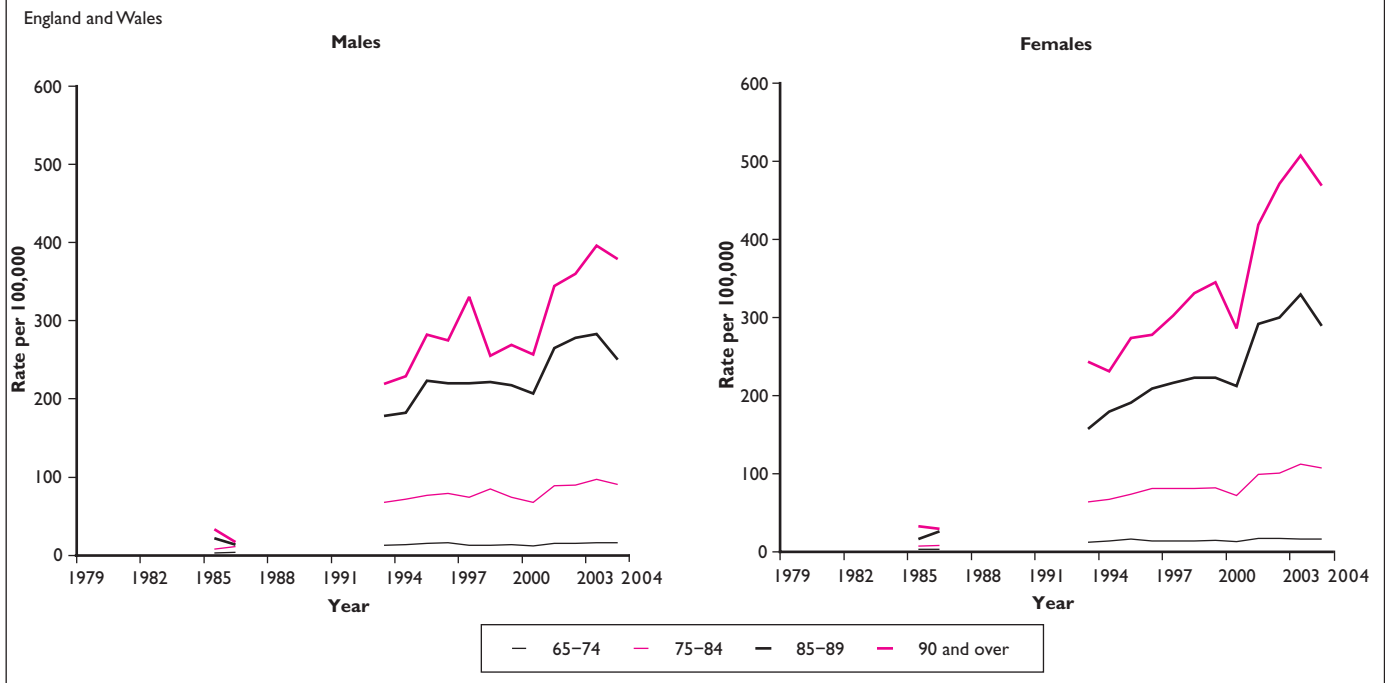


Table 1 Percentage of mentions of dementia, Alzheimer’s disease or Parkinson’s disease selected as the underlying cause of death, 1985–1986, 1993–2004

	Males			Females		
	Parkinson’s disease	Alzheimer’s disease	Dementia	Parkinson’s disease	Alzheimer’s disease	Dementia
1985	55	66	56	52	64	58
1986	55	62	54	55	64	59
1993	33	35	25	35	37	31
1994	35	34	26	35	40	33
1995	34	38	28	35	43	33
1996	36	37	29	37	44	34
1997	36	38	29	36	43	35
1998	36	39	30	38	45	37
1999	37	39	30	37	45	37
2000	36	38	28	40	46	38
2001	53	62	40	56	68	49
2002	55	63	38	59	67	47
2003	57	60	36	57	67	46
2004	55	63	35	56	67	45

Figure 3 Age-specific mortality rates, Alzheimer's disease mentions, 1979–2004



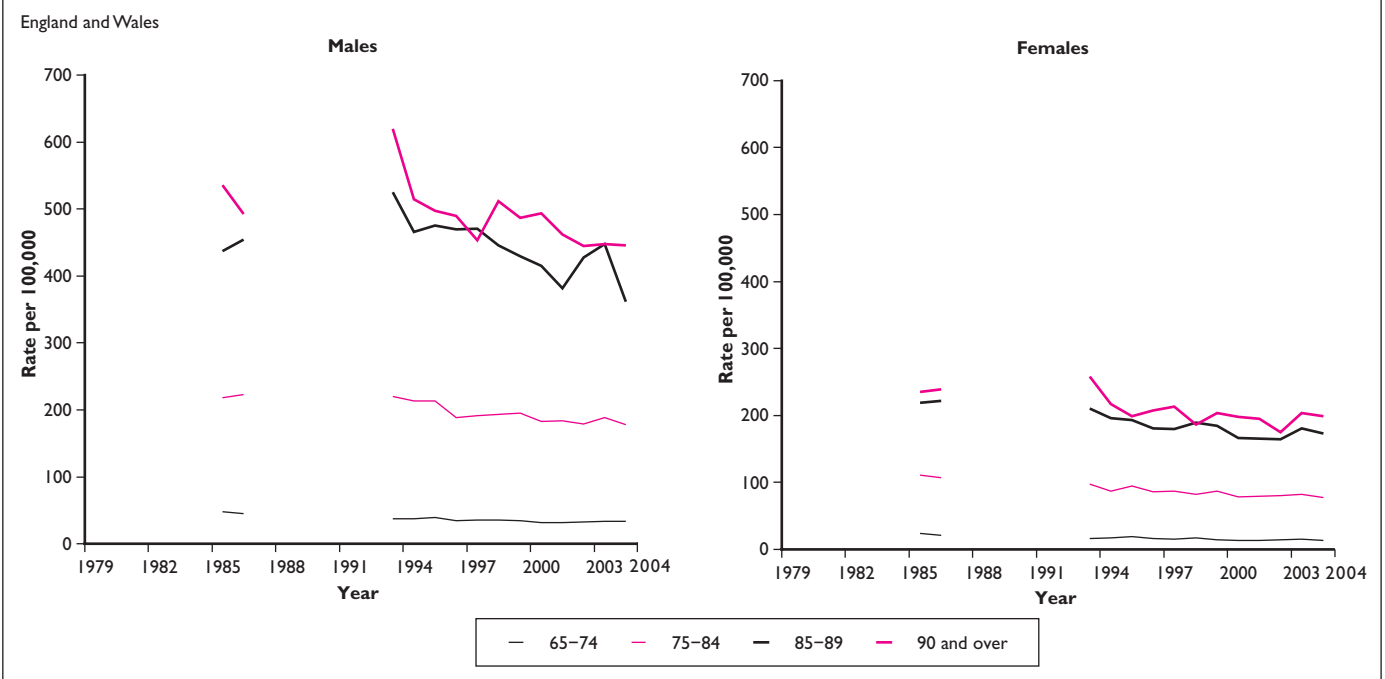
Parkinson's disease

The mortality rate for mentions of Parkinson's disease declined between 1985 and 2004, by 22 per cent for males (from 14.9 per 100,000 to 11.6 per 100,000) and 32 per cent for females (from 7.3 per 100,000 to 5.0 per 100,000). Rates were higher for males than for females (Figure 1). Looking at deaths where Parkinson's disease was the underlying cause of death, the trends are strongly affected by the changes in coding rules in 1984, 1993 and 2001. Rates were again higher for males than females (Figure 2). The percentage of mentions selected as the underlying cause was about 55 per cent in 1985, 1986 and 2001 onwards, compared with

about 35 to 40 per cent between 1993 and 2000. As for Alzheimer's disease this percentage was generally, though not always, higher for females than for males (Table 1).

Mortality from Parkinson's disease showed the same relationship with age as that for Alzheimer's disease, with rates being much higher in the older age groups (Figure 4). Rates for males were more than twice as high as rates for females in each age group. Rates decreased in each age group between 1985 and 2004. The declines were greater at younger ages, with a decline of 31 per cent among males and 45 per cent among females aged 65–74.

Figure 4 Age-specific mortality rates, Parkinson's disease mentions, 1979–2004

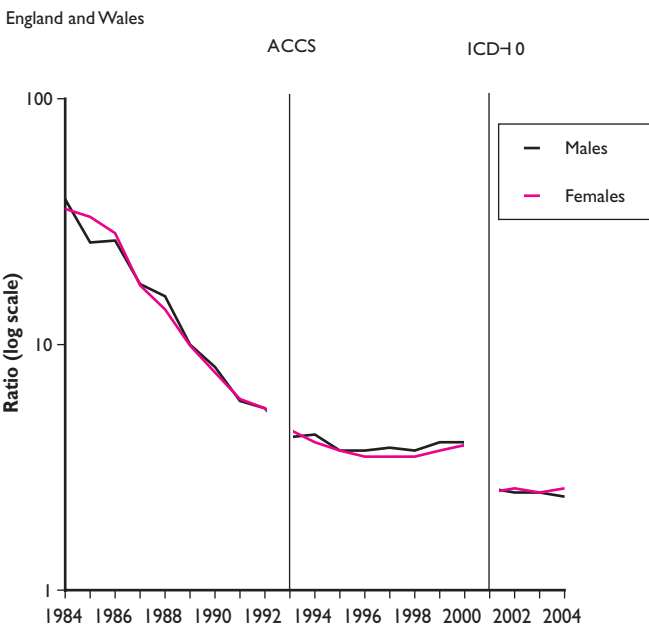


Dementia

Between 1993 and 2004 mortality rates for mentions of dementia remained steady among males. Among females, rates increased steadily between 1993 and 2004 (Figure 1). For both sexes, rates were higher in 2004 than in 1985, 5 per cent higher for males and 23 per cent higher for females.

Figure 2 shows that underlying cause mortality rates for dementia were strongly affected by changes to the coding rules, with trends in seemingly different directions in 1984 to 1992 compared to the other time periods – rates being fairly stable or decreasing during this period compared to increases at other times for females. This unusual pattern of mortality trends may be explained by a combination of gradual drift in the terminology used by doctors certifying the cause of death and abrupt changes in the ICD coding and classification rules as applied to individual terms and combinations of terms on the certificates. An earlier analysis, up to 1996,³ suggested that the pattern seen for dementia between 1984 and 1992 was due to diagnostic transfer rather than a true decline. This means that deaths that would in the past have been recorded as dementia would be recorded as Alzheimer’s disease, leading to an apparent decline in dementia mortality. Looking at mortality rates for both dementia and Alzheimer’s disease using the underlying cause of death (as this shows the full time period under consideration) shows that this does indeed appear to be the case in the 1984 to 1992 period, with rates for Alzheimer’s disease and dementia combined increasing, but rates for dementia declining or remaining steady (Figure 5). An examination of the ratio of dementia mortality rates to Alzheimer’s disease mortality rates from 1984 onwards suggests that diagnostic transfer was occurring most markedly in the 1980s and early 1990s. In the mid to late 1990s, the ratio of dementia to Alzheimer’s was fairly constant. This ratio was also fairly stable, though at a different level, from 2001 onwards (Figure 6). The difference in the level of the ratios in these two later time periods reflects coding changes that occurred when ICD-10 was introduced, described above.

Figure 6 Ratio of mortality rates for dementia to rates for Alzheimer’s disease, by sex, 1984–2004



The percentage of dementia mentions selected as the underlying cause varied from about 55–60 per cent in 1985 to 1986, between 25 and 38 per cent between 1993 and 2000 and 35–40 per cent for males and 45–49 per cent for females between 2001 and 2004 (Table 1).

Mortality from dementia showed the same relationship with age as that for Alzheimer’s and Parkinson’s disease, with rates being much higher in the older age groups (Figure 7). Rates were higher for males than females

Figure 5 Directly age-standardised mortality rates for Alzheimer’s disease and dementia, underlying cause, 1979–2004

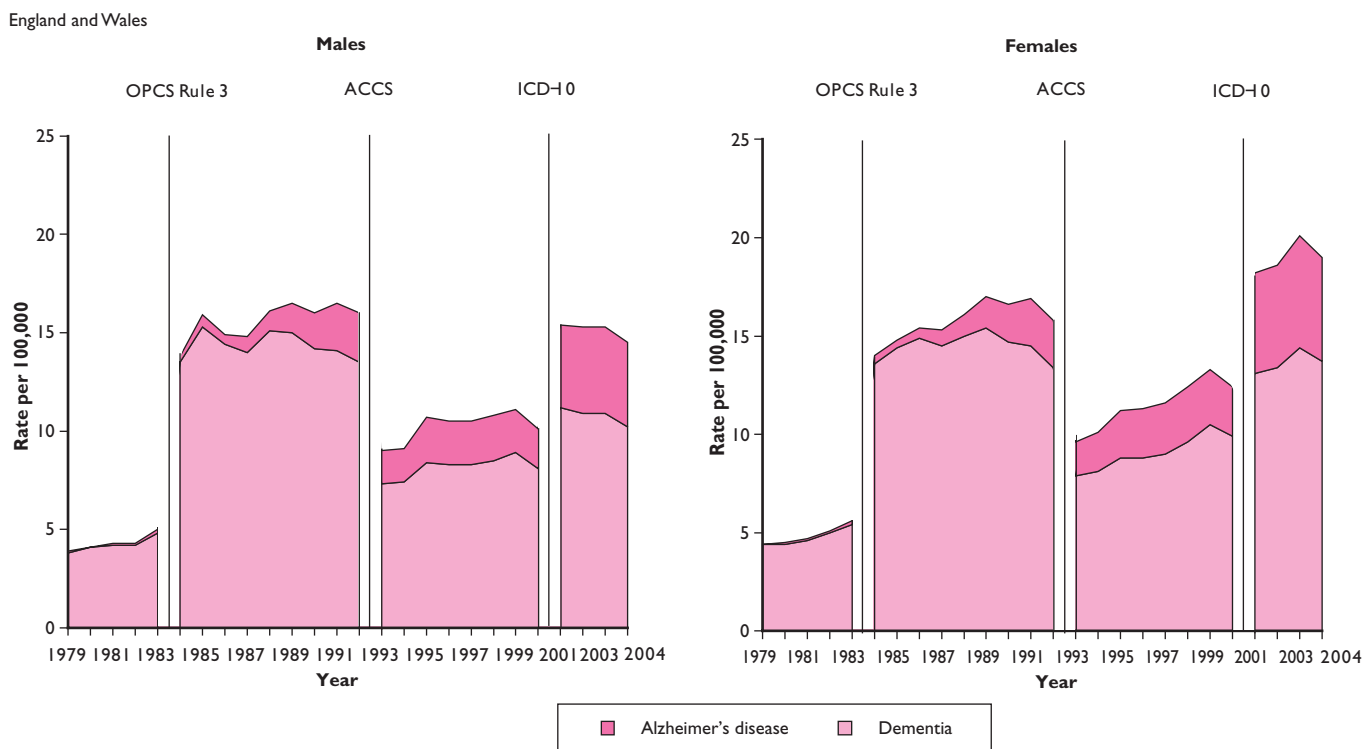
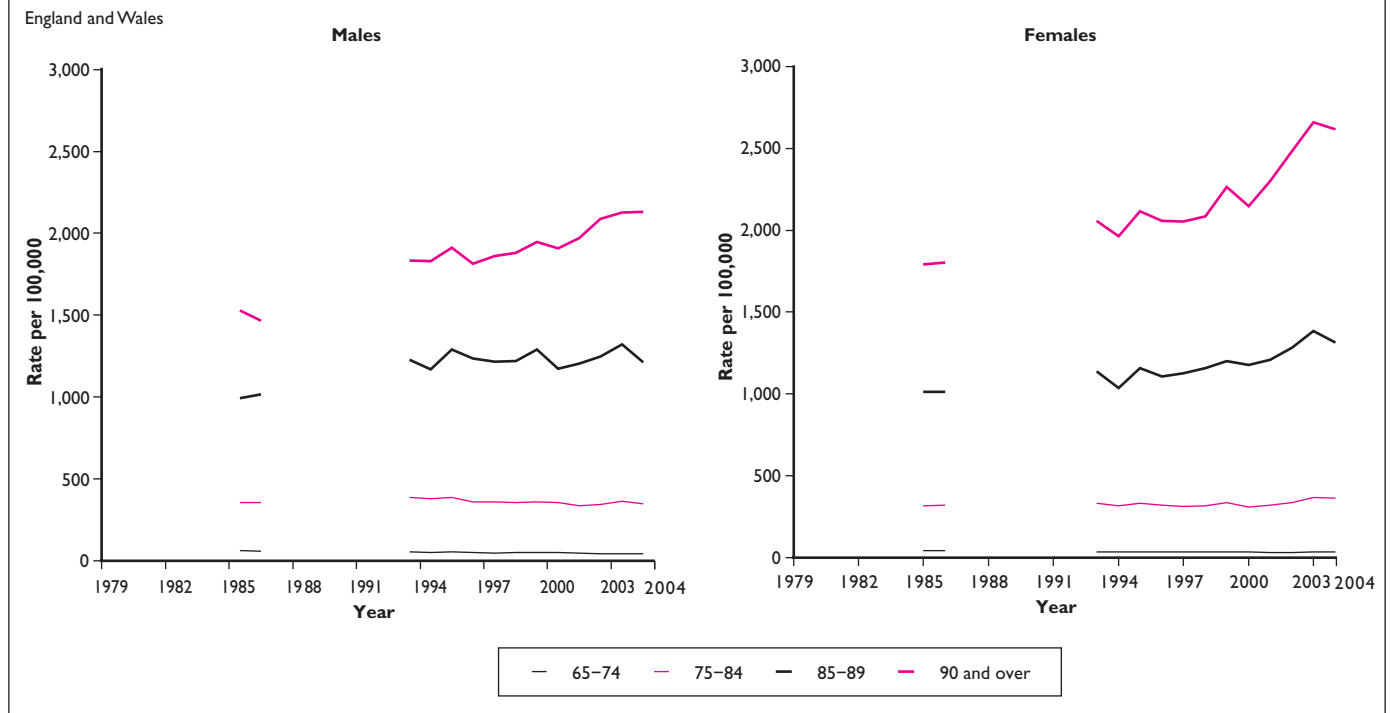


Figure 7 Age-specific mortality rates, dementia mentions, 1979–2004



in the younger age groups, but in the 90 and over age group, rates for females were higher. Rates in the 85–89 age group were similar between the sexes. It is likely that the higher rates for females aged 90 and over reflects the fact that population of women aged 90 and over is likely to have an older age structure (and therefore higher mortality) than the population of men aged 90 and over.

Table 2 Alzheimer’s disease, ICD-9 and ICD-10 coding, 1999

England and Wales

(a) Number of deaths coded as due to Alzheimer’s disease in ICD-9 by their underlying cause of death in ICD-10

	ICD-10 code	Number of deaths	%
Alzheimer’s disease	G30	2,369	98.2
Other diseases of nervous system	G00–G99 excluding G30	17	0.7
Respiratory diseases	J00–J99	14	0.6
Other causes		13	0.5
Total		2,413	

(b) Number of deaths coded as due to Alzheimer’s disease in ICD-10 by their underlying cause of death in ICD-9

	ICD-9 code	Number of deaths	%
Alzheimer’s disease	331.0	2,369	50.7
Bronchopneumonia	485–486	1,545	33.0
Dementia	290	733	15.7
Circulatory diseases	390–459	17	0.4
External causes	E800–E999	6	0.1
Other causes		8	0.2
Total		4,679	
Comparability ratio		1.94	

CHANGES RESULTING FROM THE INTRODUCTION OF ICD-10 IN 2001

Looking specifically at the changes in ICD-10, Table 2 shows that there was very little transfer of deaths away from Alzheimer’s disease as the underlying cause of death between ICD-9 and ICD-10. Gains were seen from deaths previously coded as bronchopneumonia (33 per cent of deaths coded to Alzheimer’s disease in ICD-10) and dementia (16 per cent). Only half of those deaths attributed to Alzheimer’s disease in ICD-10 would have been coded as such in ICD-9. Two-thirds of the overall

Table 3 Parkinson’s disease, ICD-9 and ICD-10 coding, 1999

England and Wales

(a) Number of deaths coded as due to Parkinson’s disease in ICD-9 by their underlying cause of death in ICD-10

	ICD-10 code	Number of deaths	%
Parkinson’s disease	G20	2,689	97.0
Respiratory diseases	J00–J99	37	1.3
Circulatory diseases	I00–I99	23	0.8
Other causes		22	0.8
Total		2,771	

(b) Number of deaths coded as due to Parkinson’s disease in ICD-10 by their underlying cause of death in ICD-9

	ICD-9 code	Number of deaths	%
Parkinson’s disease	332.0	2,689	65.0
Bronchopneumonia	485–486	1,261	30.5
Dementia	290	137	3.3
Circulatory diseases	390–459	24	0.6
External causes	E800–E999	7	0.2
Other diseases of nervous system	320–359 excluding 332.0	6	0.1
Other causes		10	0.2
Total		4,134	
Comparability ratio		1.49	

increase was from deaths previously coded as bronchopneumonia, and one third from the less specific dementias – already described above.

For Parkinson’s disease (Table 3), there was very little transfer of deaths away from Parkinson’s disease as the underlying cause of death between ICD-9 and ICD-10. Gains were seen from deaths previously coded as bronchopneumonia (30 per cent of deaths coded to Parkinson’s disease in ICD-10) and dementia (3 per cent). Two-thirds of the deaths coded as due to Parkinson’s disease in ICD-10 were coded as such in ICD-9. Around 90 per cent of the overall gain came from bronchopneumonia.

The changes resulting from the introduction of ICD-10 for dementia are complex, with transfers in and out of the dementia group contributing to the net changes in the underlying cause. Losses to circulatory diseases, due to the change in indexing of multi-infarct dementia¹⁷ (17 per cent), Alzheimer’s disease (10 per cent) and Parkinson’s disease (2 per cent) and a variety of other conditions were offset by gains from bronchopneumonia (38 per cent) (Table 4).

Table 4 Dementia, ICD-9 and ICD-10 coding, 1999

England and Wales

(a) Number of deaths coded as due to dementia in ICD-9 by their underlying cause of death in ICD-10

	ICD-10 code	Number of deaths	%
Vascular and unspecified dementia	F01, F03	5,161	67.9
Circulatory diseases	I00-I99	1,323	17.4
Alzheimer’s disease	G30	733	9.6
Parkinson’s disease	G20	134	1.8
Respiratory diseases	J00-J99	69	0.9
Endocrine, nutritional and metabolic diseases	E00-E90	44	0.6
Other diseases of nervous system	G00-G99 excluding G20 and G30	34	0.4
Neoplasms	C00-D48	26	0.3
Diseases of the genitourinary system	N00-N99	18	0.2
Other mental and behavioural disorders	F00-F99 excluding F01 and F03	12	0.2
Diseases of the musculoskeletal system	M00-M99	12	0.2
Symptoms, signs and ill-defined conditions	R00-R99	12	0.2
External causes	V01-Y89	12	0.2
Other causes		15	0.2
Total		7,605	

(b) Number of deaths coded as due to dementia in ICD-10 by their underlying cause of death in ICD-9

	ICD-9 code	Number of deaths	%
Senile and presenile organic psychotic conditions	290	5,161	43.4
Bronchopneumonia	485-486	4,542	38.2
Unspecified psychosis	298.9	1,806	15.2
Circulatory diseases	390-459	120	1.0
Other respiratory diseases	460-519 excluding 485-486	93	0.8
Other mental and behavioural disorders	290-319 excluding 290, 294.9 and 298.9	78	0.7
Unspecified chronic organic psychotic conditions	294.9	32	0.3
External causes	E800-E999	25	0.2
Endocrine, nutritional and metabolic diseases	240-279	13	0.1
Diseases of nervous system	320-359	11	0.1
Other causes		13	0.1
Total		11,894	
Comparability ratio		1.56	

DISCUSSION

Mortality rates for the three conditions examined in this article showed varying trends over the time period examined. Alzheimer’s disease showed the largest increase. This is in part due to an increasing tendency to record Alzheimer’s disease (as the cause of dementia) on death certificates, following from an increasing recognition of Alzheimer’s as the disease process underlying much dementia. Dementia mortality patterns were complex, with the unusual pattern for the underlying cause of dementia seen in the 1980s and 1990s appearing to be due to diagnostic transfer to Alzheimer’s disease. Despite this gradual drift toward the use of ‘Alzheimer’s disease’ rather than terms such as senile or pre-senile dementia, more than two and a half times as many deaths are still attributed to ‘dementia’ as to Alzheimer’s disease.

Studies in the UK have suggested varying patterns of reporting of dementia and Alzheimer’s disease on the death certificates of patients with the conditions. Two recent studies suggested reporting rates of over 70 per cent for both dementia and Alzheimer’s disease.^{18,19} Older studies from Scotland and northern England have reported variations according to whether the patient had Alzheimer’s disease or vascular dementia, with reporting being as high as between 75 and 90 per cent for patients with Alzheimer’s disease compared to 50 per cent for vascular dementia.^{20, 21}

Prevalence surveys for dementia and Alzheimer’s disease are costly and difficult to carry out, with results varying according to the diagnostic criteria used. A Delphi consensus study, which looked at all the available estimates from prevalence studies, concluded that prevalence in those aged 60 and over in Western Europe was around 5 per cent, with an estimated annual incidence of nearly 9 per 1,000 population. The study also predicted that the number of adults in Western Europe with dementia would almost double between 2001 and 2040.²²

Mortality rates for mentions of Parkinson’s disease declined over the period examined. A study of people with Parkinson’s disease in the south of England found that of those who died between 1966 and 1997, 76 per cent had Parkinson’s disease recorded on the death certificate.²³ Two recent studies of death certification in Scandinavia however found that only around half of patients with Parkinson’s disease had the condition written on their death certificate,^{24,25} but a slightly older study showed a reporting rate of over 70 per cent.²⁶

As for dementia and Alzheimer’s disease, studies of prevalence of Parkinson’s disease in the UK are limited. There have been five studies examining the prevalence of Parkinson’s disease over a 40 year period in the UK. Results of these studies suggest stable prevalence.²⁷⁻³¹ This could imply a decline in incidence, but an increasing mean duration of disease, perhaps due to better disease management, which would lead to constant prevalence with declining mortality. Prevalence of Parkinson’s disease is higher among men than women, which matches the pattern seen for mortality.

Key findings

- Mortality rates based on mentions of Alzheimer’s disease increased dramatically over the period 1985 to 2004 by 8 times for males and 12 times for females.
- Mortality rates based on mentions of Parkinson’s disease declined over the same time period, by 22 per cent for males and 32 per cent for females.
- Between 1985 and 2004, trends in mentions of dementia at death differed between males and females, with rates remaining relatively stable among males, but increasing among females.

Mortality rates using the underlying cause of death for dementia, Alzheimer's disease and Parkinson's disease are strongly affected by changes to coding rules and therefore trends should also be examined using data on all mentions of these conditions on death certificates to improve interpretation of the underlying trend.

ACKNOWLEDGEMENTS

The authors thank Allan Baker and Anita Brock (ONS) for their invaluable help on a number of aspects of the article. In addition, we thank the team in Vital Events and Morbidity Processing, led by Elaine Tower (ONS), for their help in interpreting coding changes as a result of the introduction of ICD-10. Without the help of all these colleagues it would not have been possible to produce this article.

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Risk factors for low birthweight based on birth registration and census information, England and Wales, 1981–2000

Aleks Collingwood Bakeo

Office for National Statistics

Lynda Clarke

Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine

INTRODUCTION

Birthweight is a strong predictor of neonatal and infant mortality and of health outcomes in childhood and adulthood.¹ Sixty-four per cent of infant deaths in England and Wales in 2003 were of babies weighing less than 2,500g (low birthweight).² Low birthweight is associated with poor outcomes in child health and, in particular, the development of cognitive skills.³ It is also related to illness in adult life, such as diabetes, stroke and lung disease.^{4,5} There has been a continuing rise in the proportion of low birthweight babies in the late 1980s and 1990s from 6.7 per cent in 1989 to 7.6 per cent in 1999.² Most of this increase is explained by the increased number of multiple births and the increased survival rates of lighter babies due to improved technical advances.⁶

In response to concerns over health inequalities, in 2000 the Department of Health identified, in the NHS Plan for England,⁷ national targets to reduce the gap in infant mortality between manual groups and the population as a whole and to reduce the gap in life expectancy between areas with the lowest levels and the population as a whole.⁸ Birthweight is a key indicator for both of these targets, given its association with both infant mortality and life expectancy.

Most analyses examining determinants of low birthweight have focused on information collected at birth registration. Strong relationships are known to exist between mother's marital status at the time of the birth and birthweight. For example, sole registered births registered by mother alone are much more likely to be of low birthweight.² Lone mothers are younger and more disadvantaged in general compared to married

This study examines whether there are socio-demographic factors (collected at census) that are not routinely available at birth registration that help to explain low birthweight in England and Wales in the 1980s and 1990s. Maternal age and marital status at the time of birth are known to affect the risk of low birthweight. The article looks at whether the additional socio-demographic information about the mother that is collected at Census modifies our understanding. It identifies specific groups at high risk of this negative birth outcome – being a mother from a non-White ethnic group, having a long-standing illness and living in a deprived area.

mothers and mothers cohabiting with their partners.⁹ Lone mothers are more likely to be poor, unemployed, have no car and have no educational qualifications.⁹ Infant mortality rates are higher among lone mothers.² Many of these adverse characteristics are inter-related. Age of the mother at birth is closely associated with low birthweight; very young and older mothers have lighter babies.¹⁰ Deprivation has also been linked to infant mortality and low birthweight.^{11, 12} For example, there is a social gradient in low birthweight with higher proportions in manual compared to non-manual groups.^{13,14} However, since the 1980s, no further analysis has been undertaken looking at the relationship between socio-demographic information available from the census and birthweight of babies in England and Wales except for an unpublished analysis of the relationship between ethnic ancestry and birthweight in babies born to South Asian and White women.¹⁵

This study focuses on singleton births to women for whom census information was available. It examines whether there are socio-demographic factors (collected at census) that are not routinely available at birth registration that help to explain low birthweight in England and Wales in the 1980s and 1990s. It seeks to establish how much the effects of maternal age or marital status at the time of birth on the risk of low birthweight are modified by additional socio-demographic factors collected at Census. It will also examine whether these census characteristics can independently identify groups at high risk of this negative birth outcome.

METHODS

Sample

This study uses data from the ONS Longitudinal Study (LS). The LS contains linked census and vital event data for one per cent of the population of England and Wales from 1971. It is the largest longitudinal data resource in England and Wales, including records for almost a million study members. New LS members enter the study through birth and immigration and existing members leave through death and emigration. Thus, the LS represents a continuous sample of the population of England and Wales and at any point in time it is largely representative of the population as a whole. Information on vital events such as births, deaths and cancer occurring to study members is also included in the LS, and updated annually.^{16, 17} This study analyses live born babies to LS sample mothers in the 1980s and 1990s according to birth registration information and their mother's census characteristics at a census prior to the birth

A total of 65,666 live births to LS sample mothers occurred in the 1980s and 68,333 occurred in the 1990s. Births with no prior census information were excluded from the study (8 per cent in 1980s, 12 per cent in 1990s). For all birthweight analysis, births with a missing birthweight, or births weighing less than 500 grams or more than 6000 grams were excluded because of the possibility of incorrect recording (2 per cent in 1980s, 1 per cent in 1990s). Multiple births are in general lighter than singleton births therefore they were also not included in the birthweight analysis to eliminate bias (1 per cent in 1980s, 2 per cent in 1990s).

Birthweight

The World Health Organization (WHO) definition of low birthweight of less than 2,500 grams is used in routine statistics and in this article.¹⁸

Birth registration characteristics

Birth registration characteristics used in the analyses are gender of baby, mother's age at birth and registration status at birth. The age of mother in years at time of the baby's birth is derived by ONS from her date of birth and the baby's date of birth. Registration status at birth is an indicator

of the parents' legal marital status. Births are coded as being within marriage (child born to parents who were lawfully married to one another either at the date of the child's birth or when the child was conceived, even if they later divorced or the father died before the child's birth), outside marriage jointly registered (requires both parents to be present at registration) or as a sole registration.²

Census characteristics

Census socio-demographic characteristics used as explanatory variables in the analysis are:

- Economic activity
- Number of people in the household
- Number of rooms in the household
- Household access to a car
- Housing tenure
- Region of usual residence
- Carstairs deprivation quintile
- Ethnicity (available for 1991 only)
- Limiting long term illness status (available for 1991 only).

Carstairs deprivation score is used as a measure of socio-economic deprivation and is based on four census variables (unemployment among men, domestic overcrowding, household access to a car and low social status). It was developed by Carstairs and Morris¹⁹ and is available for LS Census samples since 1981.¹⁷ Carstairs scores were grouped into quintiles by ONS, where quintile 1 is most affluent and 5 is the most deprived.

Statistical analysis

Logistic regression was used to estimate odds ratios (ORs) as a measure of association between the outcome and explanatory variables. The analyses were run for each decade of births separately. For each model to include the same number of cases and be comparable, mothers with any missing explanatory census variable information were not included in the multivariate analysis. Because the regression analysis relies so heavily on Census characteristics collected every ten years, the analysis was controlled for the number of births born to each mother in each decade. This was done to avoid overstating associations where a mother's census characteristic was the same for all her births in one decade. Significance tests for trend were carried out on Carstairs quintile.

RESULTS

Tables 1 and 2 show the distribution of low birthweight babies in the 1980s and 1990s by registration characteristics and mother's prior census characteristics and the odds ratios for each variable without controlling for other characteristics. Figures 1 and 2 show the results when adjusting for the registration variables and all census variables. The likelihood ratio test showed that mother's region of usual residence did not make a significant contribution to the multivariate model so this variable was removed from the model.

In the 1980s, female babies, having a young mother and being registered outside marriage were significantly associated with low birthweight. The information from the 1981 Census showed that living in a deprived area carried the highest risk of low birthweight (OR 1.69 for lowest quintile), followed by small number of rooms in the household (OR 1.46), having a mother who was unemployed (OR 1.45) and living in a council house or housing association (OR 1.39), and living in a household without access to a car (OR 1.31).

In the 1990s, many of the associations with low birthweight show the same pattern as found for births in the 1980s. From birth registration data, the highest likelihood of low birthweight is seen amongst mothers who register the birth alone (OR 1.97) as well as for young mothers

Table 1 Distribution of low birthweight babies and odds ratios by birth registration characteristics

Birth registration characteristics	Births in the 1980s			Births in the 1990s		
	Live births	% LBW 95% CI	OR LBW 95% CI	Live births	% LBW 95% CI	OR LBW 95% CI
Sex of baby						
Male	29,976	5.2 (4.9, 5.4)	1.00 -	29,585	5.4 (5.1, 5.6)	1.00 -
Female	28,226	6.3 (6.1, 6.6)	1.24 (1.15, 1.33)	28,474	6.3 (6.0, 6.6)	1.19 (1.11, 1.28)
Mothers age at birth						
15-24	21,809	6.5 (6.2, 6.9)	1.27 (1.18, 1.37)	16,121	7.1 (6.7, 7.5)	1.42 (1.31, 1.54)
25-34	31,932	5.2 (5.0, 5.5)	1.00 -	34,621	5.1 (4.9, 5.4)	1.00 -
35-44	4,420	5.6 (4.9, 6.3)	1.08 (0.94, 1.24)	7,277	6.4 (5.8, 7.0)	1.26 (1.13, 1.41)
45 and over	41	7.3 (1.0, 15.6)	1.36 (0.42, 4.41)	40	12.5 (1.5, 23.5)	2.43 (0.95, 6.23)
Marital status at birth						
Within marriage	46,117	5.2 (5.0, 5.4)	1.00 -	37,622	5.0 (4.8, 5.2)	1.00 -
Outside marriage	12,085	7.9 (7.4, 8.4)	1.58 (1.46, 1.71)			
Sole registration				4,411	9.4 (8.6, 10.3)	1.97 (1.76, 2.21)
Joint registration (same add)				11,983	6.6 (6.1, 7.0)	1.33 (1.22, 1.46)
Joint registration (diff add)				4,043	7.5 (6.7, 8.3)	1.54 (1.35, 1.75)

Table excludes any missing registration data.
Source: ONS Longitudinal Study

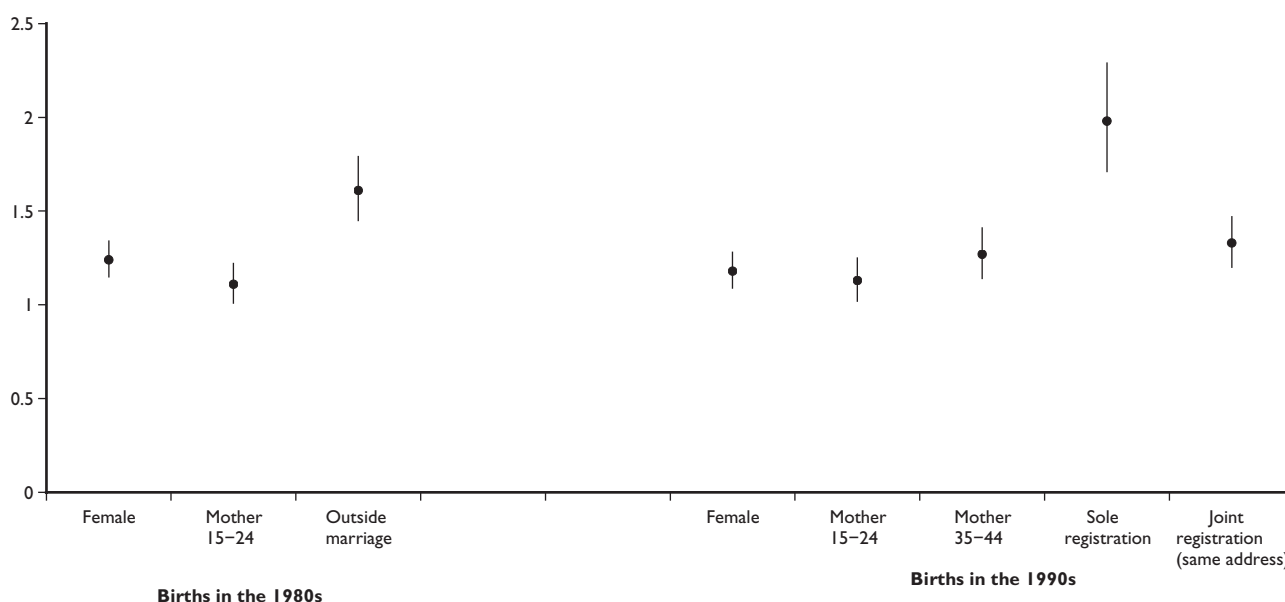
(OR 1.42). Information from the 1991 Census again indicates the highest likelihood for mothers living in a deprived area (1.78 for the lowest Carstairs quintile) followed by living in a council house or housing association (OR 1.60), having a mother who was unemployed (OR 1.45) or living in a household with no access to a car (1.44). The number of rooms per household was not significantly related to birthweight for births in the 1990s as it was for those in the 1980s. Mothers who were classified as from a non-White ethnic group were much more likely to have a low birthweight baby than those from a White group (OR 1.77 for non-White) as were mothers with a long-term health problem (OR 1.71).

MULTIVARIATE ANALYSIS

Multivariate models allow estimates to be made of the contribution of each characteristic to variations in low birthweight while adjusting for all other characteristics included in the model. Figure 1 shows a logistic

model of low birthweight babies in the 1980s and 1990s adjusted for the information available from birth registration records. In Figure 2 this is adjusted for both this information and information from the census. These figures show that in both decades births outside marriage carried a higher risk of low birthweight than those inside marriage. In the 1990s it became possible to distinguish whether births outside marriage were registered jointly by two parents at the same address, different addresses or solely by the mother alone. The odds of low birthweight in the 1990s were highest for those births outside marriage registered solely by one parent. (1.70 in the final model, see Figure 2). Although marital status remained significant when the census information was included in the model the effect decreased in both decades. For births in the 1980s, the OR decreased from 1.61 (registration variables only) to 1.40 (census variables included). Similarly for births in the 1990s, the OR decreased from 1.98 (registration variables only) to 1.70 (census variables included).

Figure 1 Multivariate logistic analysis: odds ratios of low birthweight adjusted from birth registration characteristics



Source: ONS Longitudinal Study

Table 2 Distribution of low birthweight babies and odds ratios by mother's prior census characteristics

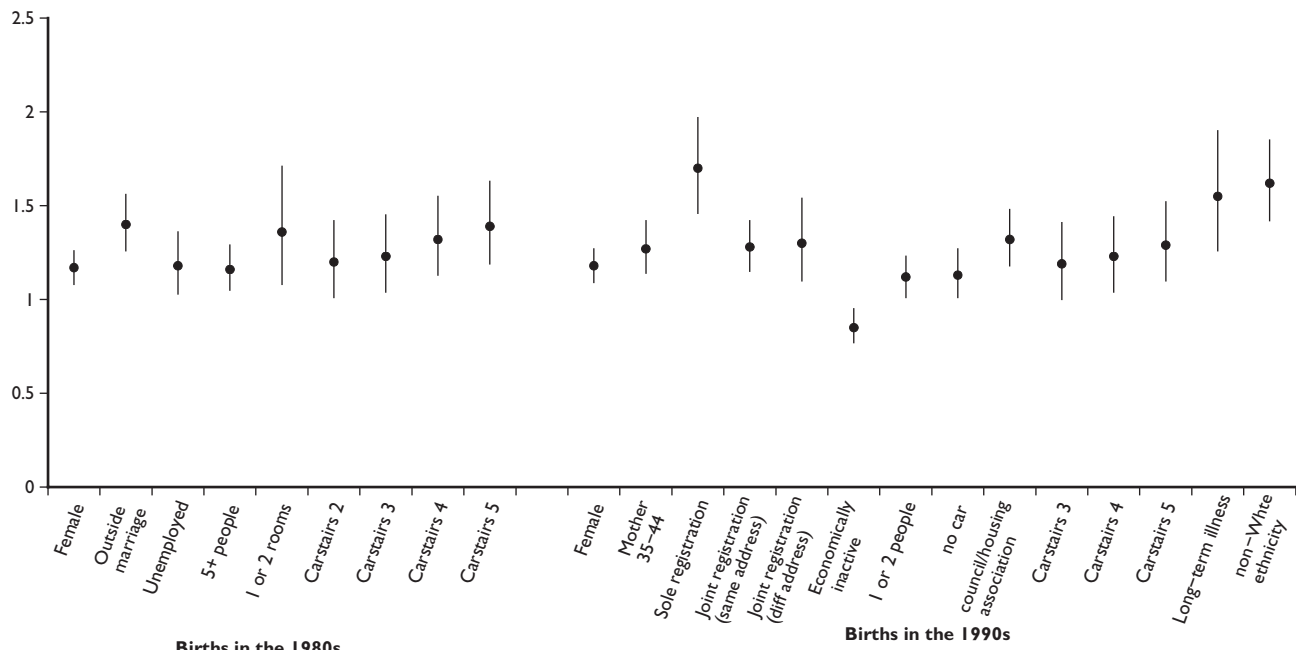
Mother's prior census characteristics	Births in the 1980s			Births in the 1990s		
	Live births	% LBW 95% CI	OR LBW 95% CI	Live births	% LBW 95% CI	OR LBW 95% CI
Economic Activity						
Employed	27,871	5.5 (5.2, 5.8)	1.00 -	31,777	5.3 (5.0, 5.5)	1.00 -
Unemployed*	4,095	7.8 (7.0, 8.6)	1.45 (1.3, 1.7)	3,926	7.5 (6.6, 8.3)	1.45 (1.27, 1.67)
Inactive	13,713	5.0 (4.7, 5.4)	0.91 (0.8, 1.0)	13,485	5.7 (5.3, 6.1)	1.09 (0.99, 1.20)
At school/student	3,533	5.0 (4.2, 5.7)	0.90 (0.8, 1.1)	2,680	6.3 (5.4, 7.3)	1.22 (1.02, 1.45)
Number of people in the household						
1 or 2	15,292	5.5 (5.2, 5.9)	1.06 (1.0, 1.2)	19,209	5.5 (5.2, 5.8)	1.02 (0.94, 1.11)
3 or 4	25,215	5.2 (5.0, 5.4)	1.00 -	26,278	5.4 (5.1, 5.7)	1.00 -
5 and over	16,481	6.7 (6.3, 7.1)	1.29 (1.2, 1.4)	11,355	7.2 (6.7, 7.7)	1.35 (1.23, 1.49)
Number of rooms						
1 or 2	1,542	7.9 (6.6, 9.3)	1.46 (1.2, 1.8)	1,946	6.1 (5.0, 7.1)	1.04 (0.85, 1.28)
3 or 4	13,226	6.0 (5.6, 6.5)	1.09 (1.0, 1.2)	14,724	5.7 (5.3, 6.1)	0.97 (0.89, 1.06)
5 and over	42,361	5.6 (5.3, 5.8)	1.00 -	40,422	5.8 (5.6, 6.0)	1.00 -
Number of cars						
No cars	17,138	6.9 (6.5, 7.3)	1.31 (1.2, 1.4)	13,682	7.8 (7.3, 8.2)	1.44 (1.32, 1.57)
1 car	28,452	5.3 (5.1, 5.6)	1.00 -	25,498	5.5 (5.2, 5.8)	1.00 -
more than 1 car	11,539	5.0 (4.6, 5.4)	0.93 (0.8, 1.0)	17,912	4.7 (4.4, 5.0)	0.84 (0.77, 0.92)
Tenure						
Owner	31,765	5.1 (4.8, 5.3)	1.00 -	36,776	5.1 (4.8, 5.3)	1.00 -
Council/housing association	19,502	6.9 (6.5, 7.2)	1.39(1.28, 1.50)	13,755	7.9 (7.4, 8.3)	1.60 (1.48, 1.74)
renting other	5,860	5.5 (5.0, 6.1)	1.10(0.97, 1.25)	6,311	5.5 (4.9, 6.0)	1.08 (0.95, 1.23)
Usual residence						
North	3,630	5.2 (4.4, 5.9)	0.94(0.79, 1.10)	3,439	6.2 (5.4, 7.0)	1.20 (1.02, 1.41)
Yorkshire and humberside	5,986	5.7 (5.2, 6.3)	1.05(0.92, 1.20)	5,765	6.1 (5.5, 6.7)	1.17 (1.02, 1.34)
North West	7,992	6.1 (5.6, 6.7)	1.13(1.00, 1.27)	4,473	6.5 (5.8, 7.2)	1.26 (1.09, 1.45)
East Midlands	4,608	6.1 (5.4, 6.8)	1.11(0.97, 1.28)	2,196	4.7 (3.8, 5.6)	0.90 (0.73, 1.11)
West Midlands	6,421	6.6 (6.0, 7.2)	1.21(1.07, 1.38)	20,378	5.3 (4.9, 5.6)	1.00 -
East Anglia	2,136	5.2 (4.3, 6.1)	0.94(0.77, 1.17)	4,894	5.4 (4.8, 6.0)	1.03 (0.88, 1.20)
South East	20,395	5.2 (4.9, 5.5)	1.00 -	6,250	7.0 (6.3, 7.6)	1.35 (1.20, 1.53)
South West	4,603	5.4 (4.8, 6.1)	0.99(0.85, 1.15)	7,431	6.1 (5.6, 6.7)	1.18 (1.04, 1.33)
Wales	3,326	5.7 (4.9, 6.5)	1.04(0.88, 1.24)	3,228	6.4 (5.6, 7.3)	1.24 (1.05, 1.47)
Carstairs quintile						
1	7,085	4.1 (3.7, 4.6)	1.00 -	6,139	4.2 (3.7, 4.7)	1.00 -
2	8,055	4.9 (4.4, 5.3)	1.19(1.01, 1.40)	8,259	4.9 (4.5, 5.4)	1.19 (1.01, 1.41)
3	10,106	5.3 (4.9, 5.8)	1.31(1.12, 1.53)	10,133	5.2 (4.8, 5.6)	1.26 (1.07, 1.48)
4	13,568	6.0 (5.6, 6.4)	1.49(1.29, 1.72)	13,922	5.7 (5.3, 6.1)	1.39 (1.19, 1.61)
5	19,280	6.8 (6.4, 7.1)	1.69(1.47, 1.94)	19,570	7.2 (6.8, 7.6)	1.78 (1.54, 2.05)
Long-term illness						
Health problem				1,617	9.5 (8.0, 10.9)	1.71 (1.43, 2.06)
No health problem				56,440	5.7 (5.5, 5.9)	1.00 -
Ethnicity						
White				52,530	5.5 (5.3, 5.7)	1.00 -
non-White				5,529	9.3 (8.5, 10.1)	1.77 (1.59, 1.97)

* Includes temporarily unemployed.
Table excludes missing census characteristic data.

Source: ONS Longitudinal Study

Figure 2

Multivariate logistic analysis: odds ratios of low birthweight adjusted for birth registration characteristics and mother's prior census information



Source: ONS Longitudinal Study

The next highest likelihood of low birthweight in the 1990s was associated with mothers from a non-White ethnic group: non-White ethnic group mothers had a 62 per cent increased risk of low birthweight compared with White mothers. A high risk of having a low weight baby was also experienced by mothers with a long term illness in the 1990 Census (1.55). Ethnic group and long-term illness were not asked in the 1981 Census so this information was not available for births in the 1980s.

Living in a deprived area carried a high risk of having a low birthweight baby; for births in the 1980s the odds were 39 per cent higher for mothers living in the lowest quintile (most disadvantaged) areas compared with mothers in the highest (most advantaged) areas. This was still true for births in the 1990s but the risk had decreased to a 29 per cent excess for those in the lowest 20 per cent of areas. Living in a council house or housing association accommodation also carried a higher risk for babies born in the 1990s (32 per cent higher) but this relationship with housing tenure was not significant for babies born in the 1980s when controlling for other variables. The associations between car access and low birthweight, observed in the individual analysis for births in the 1980s, disappear when controlling for all the other characteristics. However, for births in the 1990s, this remained a significant association after controlling for other factors.

The effect of young motherhood disappears when census information is in the model showing that other characteristics can explain the association between young motherhood and low birthweight. The model based on registration information only (Figure 1) shows an increased risk among mothers aged 15–24 (1.11 times higher OR than for mothers aged 25–33 for the 1980s and 1.13 times higher for the 1990s). In both decades, this age group no longer had a significantly raised level of risk after controlling for all the variables mainly as a result of the poverty of these mothers measured by the Carstairs Deprivation Index.

DISCUSSION

This study shows that when explaining low birthweight, lone parenthood remains important after accounting for all other factors considered in this analysis (e.g. deprivation, ethnicity, tenure and limiting long-term illness). The only significant association with mother's age after including the census factors was seen in the 1990s for women having a baby at age 35–44.

It has been shown from previous analysis of birth records that the risk of having a baby of low birthweight is increased if it is born outside marriage.²⁰ These results confirm that sole registration is the category most at risk when controlling for the birth registration variables only. These mothers were twice as likely to have a low birthweight baby (OR 1.98) than married couples in the 1990s. By comparison, babies jointly registered by a mother and father living at the same address, in other words a cohabiting couple, carried a 33 per cent higher risk. The increased prevalence of births to cohabiting couples might suggest that this might be an alternative to marriage in the 1990s but the birth outcomes for such couples are not as favourable. In interpreting the different results between the 1980s and 1990s, account needs to be taken both of changes in patterns of marriage (more births outside marriage) and mother's age at childbirth (increasing). It is also important to recognise that none of these risk factors can be singled out as the only or primary cause of low birthweight.

When additional information is available for mothers from the ONS LS, the multivariate models show that marital status remains an important indicator of higher risk of low birthweight but the risk is decreased, indicating that these other characteristics account for some of this effect. Although marital status remained significant when the census information was included in the model the effect decreased in both decades. For births in the 1980s, the OR decreased from 1.61 (registration variables only) to 1.40 (census variables included). Similarly for births in the 1990s, the OR decreased from 1.98 (registration variables only) to 1.70 (census variables included). The risk for young mothers shown with analysis of the birth registration data disappears when the census

information is included in models (Figure 2), which indicates that the additional characteristics in the model, mainly social housing, car access and deprivation as measured by the Carstairs Index account for, or explain, the effect of young motherhood being identified as a risk factor for low birthweight.

There are certain characteristics available from the census that additionally identify certain groups of women at risk of these negative birth outcomes. Ethnicity is known to be associated with the risk of low birthweight and this is evident in the results for the 1990s births. It is known that mothers born in India, Pakistan, Bangladesh and East Africa have the highest proportions of low birthweight babies in the UK.²¹

Indicators of socio-economic disadvantage, as opposed to socio-demographic characteristics, were generally more important in identifying an adverse birth outcome but the individual measures varied in their usefulness as predictors of low birthweight. The most notable predictors were tenure, car access and the Carstairs index of deprivation. Living in a disadvantaged area increased the likelihood of low birthweight significantly. Whether a family has access to a car or not is an important poverty indicator, which is included in the calculations of Carstairs deprivation score, but by itself not having access to a car was only significant for low birthweight babies in the 1990s. Living in local authority or housing association accommodation in 1991 increased the risk of the mother having a low birthweight baby in the 1990s. This may be related to the increasing proportion of lone mothers throughout the 1980s and 1990s. The proportion of dependent children living in lone parent households in Great Britain increased from 12 per cent in 1981, to 18 per cent in 1992 and 22 per cent in 2001 (lone mothers head around nine out of ten lone parent families).²² A study of births in the LS sample between 1981 to 1994 showed that low birthweight babies with mothers in privately rented accommodation at the time of the 1981 Census were less likely to die before the age of one than those whose mothers lived in local authority housing.⁶

The relationship between the number of people in the household and low birthweight differed between the 1980s and 1990s. In the 1980s, there was an effect of household size. In the 1990s the risk was higher for 1 to 2 people in the household than for larger households. This category includes lone mother households and, as mentioned previously, the proportion of lone mother households was much higher in the 1990s than in the 1980s. A study using historical data for the cities of Glasgow and Edinburgh showed that overcrowding was a significant cause of infant mortality.²³

A higher proportion of female babies than male babies are of low birthweight (under 2,500g), however, the stillbirth rate and infant mortality rate for low birthweight babies is higher for male than female babies (Table 3). The higher risk of low birthweight amongst female babies is confirmed in multivariate analysis (Table 2). Deprivation was also a key risk factor in the final model, with the risk (OR) of low birthweight increasing as affluence decreases. Being an older mother

(aged 35–44) was only significant as a risk of low birthweight in the 1990s, as it was for infant mortality.²⁴ As explained earlier, this is likely to be due in part to the mean age of mothers increasing over time. Increased age is also associated with gestational diabetes, multiple births (more older mothers undergoing IVF treatment), and genetic defects. This risk of low birthweight associated with older mothers cannot however be attributed to the increase in multiple births in this study as the analysis is for singleton births only (multiple births are generally lighter as they are more likely to be preterm births).⁶

A number of limitations in the information available for analysis in the current study can be addressed in the future. In particular, limited information on educational level was collected in the 1981 and 1991 Censuses. Greater detail is available from the 2001 Census for subsequent analysis. In a recent study in Russia looking at the effect of various socio-demographic and lifestyle factors on pregnancy outcomes, maternal education was found to be the most important social factor influencing birthweight.²⁵ No information on gestational age was available in this study as it is not routinely collected by birth registration (it is only collected for stillbirths) so it was not possible to compare risk factors for preterm births with low birthweight full-term births. A study carried out in Spain looking at low birthweight associated with socio-demographic factors found significant differences in the relationship between maternal age and low birthweight in preterm births (those during the first 36 weeks of gestation) compared to full-term births.²⁶

Characteristics of the mothers identified at the Census may have changed by the time of the birth. A previous study with the LS has shown that among women who were married in the 1971 Census but were divorced at the time of the 1981 Census, there were pronounced changes in their housing tenure.²⁷ This study did not examine changing status between censuses. Future analysis examining changes in family type between Censuses, for example, would make it possible to examine whether mothers that have recently separated are more likely to have a low birthweight baby than those who had been lone mothers for a longer period. Exploring the effect of region of residence or whether the mother lives in an urban or rural area or examining the effect of including occupational classifications: social class (available to 2001) and NSSEC (National Statistics Economic and Social Classification – available for 1991 and 2001 Census records) might also prove productive. In the current analysis tenure and employment status were used as an alternative for social class indicators. Analyses similar to those presented in this article have been undertaken with infant mortality as the birth outcome rather than low birthweight. However the numbers of events available for analysis were too small to allow any conclusions to be drawn.²⁴

CONCLUSION

This analysis has shown that demographic factors collected at birth registration (particularly lone parenthood) are undoubtedly important for identifying groups at risk of low birthweight babies. However other socio-economic factors available from the Census further identify groups

Table 3 | Distribution of live births, stillbirths and infant deaths by birthweight category, 2000–2004

Birthweight (grams)	Live births		Stillbirths		Infant deaths		Stillbirth rates		Infant death rates	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 2,500	110,862	122,123	5,996	5,290	5,675	4,481	51.3	41.5	51.2	36.7
2,500–3,499	758,603	849,177	1,882	1,784	2,204	1,840	2.5	2.1	2.9	2.2
3,500–4,499	659,936	499,497	718	466	832	554	1.1	0.9	1.3	1.1
Over 4,500	35,144	16,163	89	60	54	44	2.5	3.7	1.5	2.7
Not stated	2,546	2,336	319	247	183	110	111.3	95.6	71.9	47.1
All	1,567,091	1,489,296	9,004	7,847	8,948	7,029	5.7	5.2	5.7	4.7

at risk and explain some of the variation associated with demographic characteristics at birth, namely lone motherhood and young motherhood. Being a mother from a non-White ethnic group, with a long-standing illness or living in a deprived area were the key characteristics identified from additional Census information as being a risk factors for low birthweight.

Part of the association between mother's age and marital status for this adverse birth outcome is because these mothers are more likely to be poor and disadvantaged. The results indicate that there is a higher risk for mothers registering births outside marriage than for those registering births inside marriage, particularly for mothers registering babies alone. This higher risk persists even when their economic situation is taken into consideration, although this risk is lowered when other socio-demographic factors are included in multivariate analysis. The higher risk of lower birthweight for young mothers shown by birth registration statistics disappears once other socio-economic information (primarily tenure, car access and Carstairs Deprivation Index) is included in the analyses, which indicates that this effect can be explained by the disadvantaged situation of these mothers. The effect of young motherhood can be seen to be related to their adverse socio-economic conditions.

In terms of identifying groups for policy or intervention purposes, the groups at higher risk of low birthweight remain lone mothers, particularly mothers registering their children alone, young mothers and the oldest mothers. The current analyses show that the higher risk of this adverse birth outcome for these mothers is related to their economic circumstances and that the increased risk for young mothers is entirely accounted for by their deprived socio-economic circumstances. Additionally, other groups have been identified as being worthy for attention, namely people of non-White ethnic groups and mothers with a limiting long-term illness or in deprived circumstances.

Key findings

- In the 1990s, the factor most strongly associated with low birthweight was being born outside marriage, where the birth was registered by the mother alone. This was the case even after taking account of the mother's socio-economic status.
- Mothers from non-White ethnic groups had a 62 per cent increased risk of having a low birthweight baby when compared with White mothers, after taking account of their age at the time of the birth, household and area characteristics.
- Mothers living in the most deprived areas had a higher risk of having a low birthweight baby compared with mothers living in the least deprived area (39 per cent in the 1980s and 29 per cent in the 1990s), after taking account of their age at the time of the birth, ethnicity and limiting long-term illness.

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Symbols

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

Notes to tables

Time series

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.

United Kingdom

The United Kingdom comprises England, Wales, Scotland and Northern Ireland. The Channel Islands and the Isle of Man are not part of the United Kingdom.

Population

The estimated resident population of an area includes all people who usually live there, whatever their nationality. Members of HM and US Armed Forces in England and Wales are included on residential basis wherever possible. HM Forces stationed outside England and Wales are not included. Students are taken to be resident at their term time addresses.

Further information on population estimates can be found on the National Statistics website at www.statistics.gov.uk/popest

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 a 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 can be found in *Population Trends* 60, page 23.

Deaths

Figures for England and Wales relate to the number of deaths registered in each year up to 1992, and the number occurring in each year from 1993, though provisional figures are registrations. Figures for both Scotland and Northern Ireland relate to the number of deaths registered in each year.

Since *Health Statistics Quarterly* 15, Table 6.2 presents deaths for Government Offices for the Regions rather than Health Regional Office areas in England. More details can be found in *Health Statistics Quarterly* 15, page 2.

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.

Improvements to National Statistics on abortions performed in England and Wales were published in *Health Statistics Quarterly* 11. The revised figures are presented in Table 4.2. These changes include an improvement in the calculation of quarterly abortion rates. The mid-quarter population estimates, used to calculate these rates, were produced by linear interpolation as follows:

March quarter	$7.5/12*(P2-P1)+P1$
June quarter	$10.5/12*(P2-P1)+P1$
September quarter	$1.5/12*(P3-P2)+P2$
December quarter	$4.5/12*(P3-P2)+P2$

Where P1 = mid-year population estimate of previous year;
 P2 = mid-year population estimate of year being calculated;
 P3 = population projection for next year.

For example

March quarter 2000 = $7.5/12*(pop2000-pop1999)+pop1999$;

September quarter 2000 = $1.5/12*(pop2001-pop2000)+pop2000$.

Marriages and divorces

Marriages are tabulated according to date of solemnisation. Divorces are tabulated according to date of decree absolute. In Scotland a small number of late divorces from previous years are added to the current year. The term 'divorces' includes decrees of nullity. The fact that a marriage or divorce has taken place in England, Wales, Scotland or Northern Ireland does not necessarily mean that either of the parties is resident there.

Sources

Figures for Scotland and Northern Ireland have been provided by the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency respectively.

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 (eg 123.4); where appropriate, for small figures (below 10.0), two decimal places are given (eg 7.62). Figures which are provisional or estimated are given in less detail (eg 123 or 7.6 respectively) if their reliability does not justify giving the standard amount of detail. Where, 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 and will be updated in future issues when later information becomes available. Where figures are not yet available, cells are left blank.

Shaded background

A shaded background indicates figures that are or may be subject to change: the grey shading signifies that the underlying population estimates relate to those originally published; the coloured shading indicates estimates that have already been revised from the original, but will or may be subject to further revision.

Table I.1 Population and vital rates: international

Selected countries													Numbers (thousands)/Rates per thousand	
Year	United Kingdom	Austria	Belgium	Cyprus ^{1,3}	Czech Republic ³	Denmark	Estonia ³	Finland	France	Germany ²	Greece	Hungary ³	Irish Republic	
Population (thousands)														
1971	55,928	7,501	9,673	..	9,810	4,963	1,369	4,612	51,251	78,313	8,831	10,370	2,992	
1976	56,216	7,566	9,818	498	10,094	5,073	1,435	4,726	52,909	78,337	9,167	10,590	3,238	
1981	56,357	7,569	9,859	515	10,293	5,121	1,482	4,800	54,182	78,408	9,729	10,712	3,443	
1986	56,684	7,588	9,862	545	10,340	5,120	1,534	4,918	55,547	77,720	9,967	10,631	3,543	
1991	57,439	7,813	9,979	587	10,309	5,154	1,566	5,014	57,055	79,984	10,247	10,346	3,526	
1996	58,164	7,953	10,160	750 ¹⁰	10,321	5,260	1,470	5,117	58,030	81,900	10,480	10,190	3,630	
1997	58,314	7,965	10,180	760 ¹⁰	10,300	5,275	1,460	5,140	58,610	82,060	10,500	10,150	3,660	
1998	58,475	7,980	10,200	770 ¹⁰	10,290	5,295	1,450	5,147	58,400	82,030	10,520	10,110	3,700	
1999	58,684	7,990	10,230	770 ¹⁰	10,280	5,330	1,440	5,170	58,620	82,060	10,530	10,070	3,740	
2000	58,886	8,010	10,250	780 ¹⁰	10,270	5,340	1,372	5,180	58,900	82,180	10,010	10,020	3,790	
2001	59,113	8,040	10,290	790 ¹⁰	10,220	5,360	1,360	5,190	59,190	82,350	10,020	10,190	3,840	
2002	59,322	8,080	10,330	800 ¹⁰	10,206	5,370	1,361	5,200	59,490	82,490	10,988	10,160	3,920	
2003	59,554	8,120	10,380	810 ¹⁰	10,203	5,390	1,350	5,210	59,770	82,530	11,018	10,130	3,980	
2004	59,834 ¹¹	8,170	10,396	..	10,212	5,400	1,351 ^p	5,230	60,200	82,500	11,041	10,117	4,028	
2005	..	8,206 ^{13p}	10,446 ^{13p}	..	10,221 ^{13p}	5,411 ^{13p}	1,347 ^{13p}	5,237 ^{13p}	60,561 ^{13p}	82,501 ^{13p}	11,076 ^{13p}	10,097 ^{13p}	4,109 ^{13p}	
Population changes (per 1,000 per annum)														
1971-76	1.0	1.7	3.0	..	5.8	4.4	9.6	4.9	6.5	0.1	7.6	4.2	16.4	
1976-81	0.5	0.1	0.8	6.8	3.9	1.9	6.6	3.1	4.8	0.2	12.3	2.3	12.7	
1981-86	1.2	0.5	0.1	11.7	0.9	0.0	7.0	4.9	5.0	-1.8	4.9	-1.5	5.8	
1986-91	2.7	5.9	2.4	15.4	-0.6	1.3	4.2	3.9	5.4	5.8	5.6	-5.4	-1.0	
1991-96	2.5	3.6	3.6	55.5	0.1	4.1	-12.4	3.8	3.4	4.8	4.5	-3.0	4.3	
1997-98	2.8	1.9	2.0	13.2	-1.0	3.8	-6.8	1.4	-3.6	-0.4	1.9	-3.9	10.9	
1998-99	3.6	1.3	2.9	10.0	-1.0	6.6	-16.9	4.5	3.8	-0.4	1.0	-4.0	10.8	
1999-2000	3.4	2.5	2.0	13.0	-1.0	1.9	-47.2	1.9	4.8	1.5	-49.4	-5.0	13.4	
2000-01	3.9	3.7	3.9	12.8	-4.9	3.7	-8.7	1.9	4.9	2.1	1.0	17.0	13.2	
2001-02	3.5	5.0	3.9	12.7	-2.0	1.9	0.0	1.9	5.1	1.7	96.8	-2.9	20.8	
2002-03	3.9	5.0	4.8	12.5	0.0	3.7	-7.4	1.9	4.7	0.5	2.7	-3.0	15.3	
2003-04	4.7	6.2	1.5	..	1.2	1.9	0.7	3.8	7.2	-0.4	1.9	-1.3	12.1	
2004-05	..	4.4	4.8	..	0.9	2.0	-3.0	1.3	6.0	0.0	3.2	-2.0	20.1	
Live birth rate (per 1,000 per annum)														
1971-75	14.1	13.3	13.4	17.7	17.8	14.6	15.4	13.1	16.0	10.5	15.8	16.1	22.2	
1976-80	12.5	11.5	12.5	19.0	17.1	12.0	15.0	13.6	14.1	10.5	15.6	15.8	21.3	
1981-85	12.9	12.0	12.0	20.2	13.5	10.2	15.6	13.4	14.2	10.7	13.3	12.3	19.2	
1986-90	13.7	11.6	12.1	18.8	12.7	11.5	15.5	12.7	13.8	9.8	10.6	11.8	15.8	
1991-95	13.2	11.8	12.0	16.9	11.1	13.1	10.7	12.9	12.7	10.9	9.9	11.7	14.0	
1996	12.6	11.0	11.5	14.5	8.8	12.9	9.0	11.8	12.6	9.7	9.6	10.3	13.9	
1997	12.5	10.4	11.4	13.9	8.8	12.8	8.7	11.5	12.4	9.9	9.7	9.9	14.4	
1998	12.3	10.1	11.2	13.1	8.8	12.5	8.4	11.1	12.6	9.7	9.6	9.6	14.5	
1999	11.9	9.7	11.1	12.4	8.7	12.4	8.7	11.1	12.6	9.4	11.0	9.4	14.2	
2000	11.5	9.7	11.2	12.2	8.8	12.6	9.6	11.0	13.2	9.3	11.7	9.7	14.3	
2001	11.3	9.3	11.1	11.6	8.9	12.2	9.3	10.8	13.1	9.0	10.2	9.7	15.1	
2002	11.3	9.7	..	11.1	9.1	11.9	9.6	10.7	12.8	8.7	..	9.5	15.5	
2003	11.7	9.4	..	..	9.2	12.0	..	10.9	12.7	8.6	9.5	9.3	15.7
2004	12.1 ¹²	9.7	11.2	..	9.6	11.9	10.4	11.4	..	8.6	..	..	15.3
Death rate (per 1,000 per annum)														
1971-75	11.8	12.6	12.1	9.9	12.4	10.1	11.1	9.5	10.7	12.3	8.6	11.9	11.0	
1976-80	11.9	12.3	11.6	10.4	12.5	10.5	12.1	9.3	10.2	12.2	8.8	12.9	10.2	
1981-85	11.7	12.0	11.4	10.0	12.8	11.1	12.3	9.3	10.1	12.0	9.0	13.7	9.4	
1986-90	11.4	11.1	10.8	10.2	12.4	11.5	11.9	9.8	9.5	11.6	9.3	13.5	9.1	
1991-95	11.1	10.4	10.4	9.0	11.6	11.9	13.9	9.8	9.1	10.8	9.5	14.3	8.8	
1996	10.9	10.0	10.3	8.5	10.9	11.6	12.9	9.6	9.2	10.8	9.6	14.0	8.7	
1997	10.8	9.8	10.2	8.8	10.9	11.3	12.7	9.6	9.0	10.5	9.5	13.7	8.6	
1998	10.8	9.7	10.3	8.0	10.6	11.0	13.4	9.6	9.2	10.4	9.8	13.9	8.5	
1999	10.8	9.7	10.3	7.4	10.7	11.1	12.8	9.5	9.2	10.4	9.9	14.2	8.5	
2000	10.3	9.5	10.2	7.7	10.6	10.9	13.4	9.5	9.1	10.2	10.5	13.5	8.2	
2001	10.2	9.2	10.1	6.9	10.5	10.9	13.6	9.4	9.0	10.0	10.2	13.0	7.8	
2002	10.2	9.5	..	7.3	10.6	10.9	13.5	9.5	9.0	10.2	..	13.1	7.5	
2003	10.3	9.5	..	..	10.9	10.7	..	9.4	9.2	10.3	9.6	13.4	7.4
2004	9.7 ¹²	9.1	9.8	..	10.5	10.3	13.2	9.1	..	10.0	..	..	7.0
2005 ^p	9.7 ¹⁴	..	..	..	..	..	..	..	..	..	..	..	..

Note:

Estimated population (mid-year), live birth and death rates up to the latest available date, as given in the *United Nations Monthly Bulletin of Statistics (November 2005)*, the *United Nations Demographic Yearbook (2000 Edn)*, *Eurostat Yearbook 2004* and the *Eurostat website (April 2006)*.

1 Republic of Cyprus - Greek Cypriot controlled area only

2 Including former GDR throughout.

3 The European Union consists of 25 member countries (EU25) - 1 May 2004 (10 new member countries).

4 Including the Indian held part of Jammu and Kashmir, the final status of which has not yet been determined.

5 Rates are based on births to or deaths of Japanese nationals only.

6 Excludes Hong Kong.

7 Estimate prepared by the Population Division of the United Nations.

8 Includes Hong Kong.

9 Rate is for 1990-1995.

10 Indicates population estimates of uncertain reliability.

11 Data for mid-2004 for the United Kingdom, Great Britain, England and Wales and England were revised due to the Harrow correction that was published on 20 December 2005.

12 Birth and death rates for 2004 have been calculated using the revised mid-2004 population estimates published on 20 December 2005.

13 As at 1 January.

14 Death rates for 2005 are based on the 2004 based Population Projections for 2005.

p Provisional

Table I.1
continued
Population and vital rates: international

Selected countries														Numbers (thousands)/Rates per thousand	
Year	United Kingdom	Italy	Latvia ³	Lithuania ³	Luxembourg	Malta ³	Netherlands	Poland ³	Portugal	Slovakia ³	Slovenia ³	Spain	Sweden	EU-25 ³	
Population (thousands)															
1971	55,928	54,073	2,366	3,160	342	330	13,194	32,800	8,644	4,540	1,732	34,216	8,098	..	
1976	56,216	55,718	2,465	3,315	361	330	13,774	34,360	9,356	4,764	1,809	36,118	8,222	420,258	
1981	56,357	56,502	2,515	3,422	365	322	14,247	35,902	9,851	4,996	1,910	37,741	8,320	428,563	
1986	56,684	56,596	2,588	3,560	368	344	14,572	37,456	10,011	5,179	1,975	38,536	8,370	433,555	
1991	57,439	56,751	2,662	3,742	387	358	15,070	38,245	9,871	5,283	2,002	38,920	8,617	440,927	
1996	58,164	57,380	2,460	3,615	420	380	15,530	38,620	10,060	5,368	1,990	39,430	8,838	447,522	
1997	58,314	57,520	2,430	3,580	416	380	15,610	38,650	10,090	5,379	1,987	39,520	8,845	448,785	
1998	58,475	57,590	2,410	3,550	430	390	15,710	38,670	10,130	5,388	1,985	39,650	8,848	449,121	
1999	58,684	57,650	2,390	3,520	427	390	15,810	38,650	10,170	5,393	1,978	39,840	8,860	449,994	
2000	58,886	57,760	2,370	3,512	440	389	15,910	38,260	10,230	5,399	1,988	40,170	8,870	450,287	
2001	59,113	57,950	2,364	3,480	440	390	16,050	38,250	10,290	5,379	1,990	40,610	8,900	452,043	
2002	59,322	57,160	2,340	3,470	450	390	16,150	38,230	10,370	5,379	2,000	41,200	8,920	453,772	
2003	59,554	57,610	2,332	3,460	450	400	16,220	38,200	10,440	5,379	2,000	41,870 ^p	8,960	455,764	
2004	59,834 ¹¹	58,170	2,310	3,440	450	400	16,270	38,180	10,500 ^p	5,380	2,000	42,345	8,990	457,645	
2005	..	58,462 ^{13p}	2,306 ^{13p}	3,425 ^{13p}	455 ^{13p}	403 ^{13p}	16,305 ^{13p}	38,174 ^{13p}	10,529 ^{13p}	5,385 ^{13p}	1,998 ^{13p}	43,038 ^{13p}	9,011 ^{13p}	..	
Population changes (per 1,000 per annum)															
1971-76	1.0	6.1	8.4	9.8	10.7	0.0	8.8	9.5	16.5	9.9	8.9	11.1	3.1	..	
1976-81	0.5	2.8	4.1	6.5	2.5	-4.8	6.9	9.0	10.6	9.7	11.2	9.0	2.4	4.0	
1981-86	1.2	0.3	5.8	8.1	1.8	13.7	4.6	8.7	3.2	7.3	6.8	4.2	1.2	2.3	
1986-91	2.7	0.5	5.7	10.2	10.2	8.1	6.8	4.2	-2.8	4.0	2.7	2.0	5.9	3.4	
1991-96	2.5	2.2	-12.8	-1.7	17.0	8.4	4.6	2.0	3.8	3.4	-1.1	2.6	1.2	3.0	
1997-98	2.8	1.2	-8.2	-8.4	33.7	26.3	6.4	0.5	4.0	1.5	-1.0	3.3	0.3	0.7	
1998-99	3.6	1.0	-8.3	-8.5	-0.7	0.0	6.4	-0.5	3.9	0.7	-3.5	4.8	1.4	1.9	
1999-2000	3.4	1.9	-8.4	-2.3	30.4	-2.6	6.3	-10.1	5.9	0.9	5.1	8.3	1.1	0.7	
2000-01	3.9	3.3	-4.2	-9.1	0.0	2.6	8.8	-0.3	5.9	-3.7	1.0	11.0	3.4	3.9	
2001-02	3.5	-13.6	-8.5	-2.9	22.7	0.0	6.2	-0.5	-7.8	0.0	5.0	14.5	2.2	3.8	
2002-03	3.9	7.9	-4.3	-2.9	0.0	25.6	4.3	-0.8	6.8	0.0	0.0	16.3	4.5	4.4	
2003-04	4.7	9.7	-8.6	-5.8	0.0	0.0	3.1	-0.5	5.7	0.0	0.0	11.3	3.3	2.5	
2004-05	..	5.0	-1.7	-4.4	11.1	7.5	2.2	-0.2	2.8	0.9	-1.0	16.4	2.3	..	
Live birth rate (per 1,000 per annum)															
1971-75	14.1	16.0	14.4	16.4	11.6	17.5	14.9	17.9	20.3	19.7	16.4	19.2	13.5	..	
1976-80	12.5	12.6	13.9	15.4	11.2	17.0	12.6	19.3	17.9	20.3	16.3	17.1	11.6	..	
1981-85	12.9	10.6	15.2	16.0	11.6	15.3	12.2	19.0	14.5	18.0	14.2	12.8	11.3	..	
1986-90	13.7	9.8	15.3	15.8	12.2	16.0	12.8	15.5	11.9	15.8	12.3	10.8	13.2	..	
1991-95	13.2	9.6	10.8	13.1	13.3	14.0	12.8	12.9	11.4	13.3	10.0	9.8	13.3	..	
1996	12.6	9.2	7.9	10.5	13.7	13.5	12.2	11.1	11.1	11.2	9.4	9.2	10.8	10.8	
1997	12.5	9.4	7.6	10.2	13.1	13.1	12.3	10.7	11.4	11.0	9.1	9.4	10.2	10.7	
1998	12.3	9.3	7.5	10.4	12.7	12.2	12.7	10.2	11.4	10.7	9.0	9.3	10.1	10.5	
1999	11.9	9.3	8.0	10.3	13.0	11.4	12.7	9.9	11.6	10.4	8.8	9.6	10.0	10.5	
2000	11.5	9.4	8.3	9.8	13.1	10.8	13.0	9.8	11.8	10.2	9.1	9.8	10.2	10.6	
2001	11.3	9.3	8.3	9.1	12.4	..	12.6	9.5	10.8	9.5	8.8	..	10.3	10.4	
2002	11.3	9.3	8.6	8.7	12.0	..	12.6	9.2	11.0	9.5	8.8	..	10.7	10.3	
2003	11.7	9.4	..	8.9	11.5	..	12.4	9.2	11.2	9.7	8.7	..	11.1	..	
2004	12.1 ¹²	..	..	8.9	12.1	..	11.9	9.3	10.4	10.0	9.0	..	11.2	..
Death rate (per 1,000 per annum)															
1971-75	11.8	9.8	11.6	9.0	12.2	9.0	8.3	8.4	11.0	9.4	10.0	8.5	10.5	..	
1976-80	11.9	9.7	12.6	10.1	11.5	9.0	8.1	9.2	10.1	9.8	9.8	8.0	10.9	..	
1981-85	11.7	9.5	12.8	10.6	11.2	8.2	8.3	9.6	9.6	10.1	10.3	7.7	11.0	..	
1986-90	11.4	9.4	12.4	10.3	10.5	7.4	8.5	10.0	9.6	10.1	9.6	8.2	11.1	..	
1991-95	11.1	9.7	14.8	12.0	9.8	7.6	8.8	10.2	10.4	9.9	9.7	8.7	10.9	..	
1996	10.9	9.6	13.8	11.6	9.4	7.4	8.9	10.0	10.8	9.8	9.4	8.9	10.6	10.1	
1997	10.8	9.8	13.8	11.1	9.4	7.7	8.7	9.8	10.6	9.7	9.5	8.9	10.5	10.0	
1998	10.8	10.0	14.2	11.5	9.2	8.1	8.8	9.7	10.7	9.9	9.6	9.2	10.5	10.0	
1999	10.8	9.9	13.7	11.4	8.8	8.2	8.9	9.9	10.8	9.7	9.5	9.1	10.7	10.0	
2000	10.3	9.7	13.2	11.1	8.6	7.6	8.8	9.5	10.6	9.8	9.3	9.1	10.5	9.8	
2001	10.2	9.6	14.0	11.6	8.4	..	8.8	9.4	10.4	9.6	9.3	8.9	10.5	9.7	
2002	10.2	9.7	13.9	11.8	8.4	..	8.9	9.4	10.2	9.6	9.3	..	10.7	9.8	
2003	10.3	10.8	..	11.9	8.6	..	8.7	9.6	10.9	9.7	9.7	..	10.4	..	
2004	9.7 ¹²	..	..	12.0	7.9	..	8.4	..	9.7	9.6	9.3	..	10.1	..
2005 ^p	9.7 ¹⁴	..	..	..	..	..	..	..	..	..	..	..	..	..

See notes on first page of table.

Table I.1
continued | **Population and vital rates: international**

Selected countries										
Year	United Kingdom	EU-25 ³	Russian Federation	Australia	Canada	New Zealand	China	India ⁴	Japan ⁵	USA
Population (thousands)										
1971	55,928	..	130,934	13,067	22,026	2,899	852,290 ⁶	551,311	105,145	207,661
1976	56,216	420,258	135,027	14,033	23,517	3,163	937,170 ⁶	617,248	113,094	218,035
1981	56,357	428,563	139,225	14,923	24,900	3,195	1,008,460 ⁶	675,185	117,902	229,958
1986	56,684	433,555	144,154	16,018	26,204	3,317	1,086,733 ⁶	767,199	121,672	240,680
1991	57,439	440,927	148,245	17,284	28,031	3,477	1,170,100 ⁶	851,897	123,964	252,639
1996	58,164	447,552	147,739	18,311	29,610	3,730	1,223,890 ^{6,10}	941,580 ¹⁰	125,761	265,463
1997	58,314	448,785	147,105	18,524	29,910	3,780	1,236,260 ^{6,10}	959,800 ¹⁰	126,065	268,008
1998	58,475	449,121	146,540	18,710	30,160	3,820	1,248,100 ^{6,10}	978,080 ¹⁰	126,400	270,300
1999	58,684	449,994	145,940	18,930	30,490	3,840	1,259,090 ^{6,10}	996,430 ¹⁰	126,630	272,691
2000	58,886	450,287	145,560	19,150	30,770	3,860	1,275,130 ^{7,10}	1,014,820 ¹⁰	126,840	275,260
2001	59,113	452,043	145,980	19,410	31,110	3,850	..	1,033,325 ¹⁰	127,130	284,800
2002	59,322	453,772	145,310	19,640	31,410	3,940	..	1,050,640 ¹⁰	127,400	288,370 ⁷
2003	59,554	455,764	144,570	19,870	31,630	4,010	..	1,068,210 ¹⁰	127,650	290,810
2004	59,834 ¹¹	457,645	143,820	20,110	31,950	4,060	..	1,085,600 ¹⁰	126,670	291,685
2005	..	..	..	..	..	..	..	..	..	..
Population changes (per 1,000 per annum)										
1971-76	1.0	..	6.3	14.8	13.5	18.2	19.9 ⁶	23.9	15.1	10.0
1976-81	0.5	4.0	6.2	12.7	11.8	2.0	15.2 ⁶	18.8	8.5	10.9
1981-86	1.2	2.3	7.1	14.7	10.5	7.6	15.5 ⁶	27.3	6.4	9.3
1986-91	2.6	3.4	5.7	15.8	13.9	9.6	15.3 ⁶	22.1	3.8	9.9
1991-96	2.5	3.0	-0.7	11.9	11.3	15.1	9.2 ⁶	21.1	2.9	10.2
1997-98	2.8	0.7	-3.8	10.0	8.4	10.6	9.6 ⁶	19.0	2.7	8.6
1998-99	3.6	1.9	-4.1	11.8	10.9	5.2	8.8 ⁶	18.8	1.8	8.8
1999-2000	3.4	0.7	-2.6	11.6	9.2	5.2	12.7 ⁸	18.5	1.7	9.4
2000-01	3.9	3.9	2.9	13.6	11.0	-2.6	..	18.2 ^P	2.3	34.7
2001-02	3.5	3.8	-4.6	11.8	9.6	23.4	..	16.8 ^P	2.1	12.5
2002-03	3.9	4.4	-5.1	11.7	7.0	17.8 ^P	..	16.7 ^P	2.0	8.5
2003-04	4.7	2.5	-5.2	12.1	10.1	12.5	..	16.3 ^P	0.2	3.0
Live birth rate (per 1,000 per annum)										
1971-75	14.1	..	..	18.8	15.9	20.4	27.2 ⁶	35.6	18.6	15.3
1976-80	12.5	..	..	15.7	15.5	16.8	18.6 ⁶	33.4	14.9	15.2
1981-85	12.9	..	..	15.6	15.1	15.8	19.2 ⁶	..	12.6	15.7
1986-90	13.7	..	..	15.1	14.8	17.1	..	..	10.6	16.0
1991-95	13.2	..	10.2	..	..	..	18.5 ^{6,9}	..	..	..
1996	12.6	10.8	8.8	13.9	12.3	15.4	9.8 ⁶	27.3	9.6	14.7
1997	12.5	10.7	8.6	13.6	11.6	15.4	9.1 ⁸	..	9.5	14.5
1998	12.3	10.5	8.7	13.3	11.3	14.5	8.1 ⁸	26.2	9.5	14.6
1999	11.9	10.5	8.3	13.1	11.0	14.9	7.8 ⁸	..	9.3	14.5
2000	11.5	10.6	8.6	13.0	10.8	14.7	8.1 ⁸	..	9.4	14.7
2001	11.3	10.4	9.0	12.7	..	14.4	7.2 ⁸	..	9.2	14.1
2002	11.3	10.3	9.6	12.8	..	13.7	7.1 ⁸	..	9.1	13.9
2003	11.7	..	10.2	12.6	..	14.0	6.9 ⁸	..	8.8	14.1
2004	12.1 ¹²	..	10.5	12.7	..	14.3	7.2 ⁸	..	..	..
Death rate (per 1,000 per annum)										
1971-75	11.8	..	..	8.2	7.4	8.4	7.3 ⁶	15.5	6.4	9.1
1976-80	11.9	..	..	7.6	7.2	8.2	6.6 ⁶	13.8	6.1	8.7
1981-85	11.7	..	..	7.3	7.0	8.1	6.7 ⁶	..	6.1	8.6
1986-90	11.4	..	..	7.2	7.3	8.2	..	..	6.4	8.7
1991-95	11.1	..	13.7	..	..	..	..	..	..	..
1996	10.9	10.1	14.1	7.0	7.2	7.6	5.0 ⁶	8.9	7.1	8.7
1997	10.8	10.0	13.7	7.0	7.2	7.3	4.9 ⁸	..	7.2	8.6
1998	10.8	10.0	13.6	6.8	7.2	6.9	5.0 ⁸	9.0	7.4	8.6
1999	10.8	10.0	14.7	6.8	7.4	7.3	5.0 ⁸	..	7.8	8.8
2000	10.3	9.8	15.3	6.7	7.5	6.9	5.1 ⁸	..	7.6	8.7
2001	10.2	9.7	15.6	6.6	..	7.2	5.0 ⁸	..	7.6	8.5
2002	10.2	9.8	..	6.8	..	7.1	5.0 ⁸	..	7.7	8.5
2003	10.3	..	..	6.6	..	7.0	5.4 ⁸	..	7.9	8.4
2004	9.7 ¹²	..	..	6.6	..	7.0	5.3 ⁸	..	..	..
2005 ^P	9.7 ¹⁴	..	..	..	..	..	..	..	..	..

See notes on first page of table.

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	56,357	54,815	49,634	46,821	2,813	5,180	1,543
1986	56,684	55,110	49,999	47,188	2,811	5,112	1,574
1991	57,439	55,831	50,748	47,875	2,873	5,083	1,607
1993 ³	57,714	56,078	50,986	48,102	2,884	5,092	1,636
1994 ³	57,862	56,218	51,116	48,229	2,887	5,102	1,644
1995 ³	58,025	56,376	51,272	48,383	2,889	5,104	1,649
1996 ³	58,164	56,503	51,410	48,519	2,891	5,092	1,662
1997 ³	58,314	56,643	51,560	48,665	2,895	5,083	1,671
1998 ³	58,475	56,797	51,720	48,821	2,900	5,077	1,678
1999 ³	58,684	57,005	51,933	49,033	2,901	5,072	1,679
2000 ³	58,886	57,203	52,140	49,233	2,907	5,063	1,683
2001 ³	59,113	57,424	52,360	49,450	2,910	5,064	1,689
2002 ³	59,322	57,625	52,570	49,647	2,923	5,055	1,697
2003	59,554	57,851	52,794	49,856	2,938	5,057	1,703
2004 ⁴	59,834	58,124	53,046	50,093	2,952	5,078	1,710
of which (percentages)							
0-4	5.7	5.6	5.7	5.7	5.4	5.2	6.4
5-15	13.8	13.7	13.8	13.8	14.0	13.2	16.0
16-44	40.2	40.2	40.2	40.4	37.5	39.8	41.4
45-64M/59F	21.7	21.8	21.7	21.6	22.7	22.7	20.1
65M/60F-74	11.0	11.0	11.0	10.9	12.0	11.7	9.9
75 and over	7.6	7.6	7.7	7.6	8.4	7.3	6.2
Projections¹							
2006	60,533	58,800	53,691	50,714	2,977	5,108	1,733
2011	61,892	60,124	55,005	51,967	3,037	5,120	1,767
2016	63,304	61,504	56,378	53,276	3,102	5,126	1,800
2021	64,727	62,897	57,770	54,605	3,165	5,127	1,830
of which (percentages)							
0-4	5.6	5.6	5.6	5.6	5.3	5.0	5.9
5-15	12.0	12.0	12.1	12.1	11.8	11.2	13.0
16-44	36.8	36.8	36.9	37.1	34.7	35.0	37.2
45-64 ²	25.9	25.9	25.8	25.8	25.9	27.6	25.6
65-74 ²	10.2	10.2	10.1	10.0	11.6	11.3	9.5
75 and over	9.5	9.5	9.5	9.4	10.6	10.0	8.6

Note: Figures may not add exactly due to rounding.

1 National projections based on mid-2004 population estimates.

2 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.

3 These revised population estimates were published on 9 September 2004 (for mid-2001 and mid-2002) and 7 October 2004 (for mid-1992 to mid-2000), following the local authority population studies, and replace all earlier versions. All figures shown on this table are now therefore on a consistent basis.

4 Data for mid-2004 for the United Kingdom, Great Britain, England and Wales and England were revised due to the Harrow correction that was published on 20 December 2005.

Tel no. for all queries relating to population estimates - 01329 813318

Table 1.3 Population: subnational

Government Office Regions of England ¹		Numbers (thousands) and percentage age distribution							
Mid-year	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West
Estimates									
1971	2,679	7,108	4,902	3,652	5,146	4,454	7,529	6,830	4,112
1976	2,671	7,043	4,924	3,774	5,178	4,672	7,089	7,029	4,280
1981	2,636	6,940	4,918	3,853	5,187	4,854	6,806	7,245	4,381
1986	2,594	6,833	4,884	3,908	5,180	4,999	6,774	7,468	4,548
1991	2,587	6,843	4,936	4,011	5,230	5,121	6,829	7,629	4,688
1993 ⁴	2,594	6,847	4,954	4,056	5,246	5,154	6,844	7,673	4,734
1994 ⁴	2,589	6,839	4,960	4,072	5,249	5,178	6,874	7,712	4,757
1995 ⁴	2,583	6,828	4,961	4,092	5,257	5,206	6,913	7,763	4,782
1996 ⁴	2,576	6,810	4,961	4,108	5,263	5,233	6,974	7,800	4,793
1997 ⁴	2,568	6,794	4,958	4,120	5,262	5,267	7,015	7,853	4,827
1998 ⁴	2,561	6,792	4,958	4,133	5,271	5,302	7,065	7,889	4,849
1999 ⁴	2,550	6,773	4,956	4,152	5,272	5,339	7,154	7,955	4,881
2000 ⁴	2,543	6,774	4,959	4,168	5,270	5,375	7,237	7,991	4,917
2001 ⁴	2,540	6,773	4,977	4,190	5,281	5,400	7,322	8,023	4,943
2002 ⁴	2,538	6,783	4,993	4,223	5,304	5,422	7,371	8,044	4,968
2003	2,539	6,805	5,009	4,252	5,320	5,463	7,388	8,080	4,999
2004	2,545	6,827	5,039	4,280	5,334	5,491	7,429 ⁵	8,110	5,038
<i>of which (percentages)</i>									
0-4	5.3	5.6	5.6	5.5	5.8	5.7	6.5	5.6	5.1
5-15	13.6	14.2	14.0	13.9	14.3	13.9	12.9	13.9	13.3
16-44	39.1	39.5	39.7	39.3	39.3	38.6	48.7	39.1	36.9
45-64M/59F	22.6	22.0	21.9	22.5	21.8	22.4	18.0	22.3	22.9
65M/60F-74	11.8	11.3	11.1	11.2	11.3	11.4	8.2	11.0	12.3
75 and over	7.7	7.5	7.6	7.7	7.6	8.0	5.7	8.1	9.4
Projections²									
2004	2,535	6,811	5,022	4,275	5,330	5,499	7,431	8,122	5,031
2008	2,525	6,852	5,079	4,366	5,380	5,646	7,614	8,300	5,163
2013	2,516	6,914	5,154	4,479	5,451	5,833	7,858	8,527	5,328
2018	2,510	6,987	5,234	4,594	5,531	6,025	8,105	8,765	5,498
2023	2,502	7,057	5,313	4,706	5,609	6,212	8,331	9,005	5,668
2028	2,489	7,107	5,379	4,804	5,672	6,380	8,523	9,222	5,823
<i>of which (percentages)</i>									
0-4	4.7	5.3	5.4	5.1	5.6	5.4	6.3	5.4	4.8
5-15	11.2	12.1	12.1	11.9	12.5	12.3	11.7	12.1	11.3
16-44	33.7	35.4	35.7	33.9	34.7	34.0	43.8	35.0	32.8
45-64 ³	25.3	24.9	24.6	25.6	25.1	25.0	24.2	25.1	25.3
65-74 ³	12.7	11.1	11.0	11.5	10.7	11.2	7.4	10.8	12.1
75 and over	12.3	11.2	11.3	12.1	11.4	12.2	6.6	11.7	13.7

Note: Figures may not add exactly due to rounding.

¹ From 1 April 2002 there are four Directorates of Health and Social Care (DHSCs) within the Department of Health. The GORs sit within the DHSCs as follows: North East, North West, Yorkshire and the Humber GORs are within North DHSC, East Midlands, West Midlands and East GORs are within Midlands and Eastern DHSC, London GOR equates to London DHSC and South East and South West GORs are within South DHSC. See 'In brief' *Health Statistics Quarterly* 15 for further details of changes to Health Areas.

² These projections are based on the mid-2003 population estimates and are consistent with the 2003-based national projections produced by the Government Actuary's Department and presented in Table 1.2 in *Health Statistics Quarterly* nos 25 to 28.

³ 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.

⁴ These revised population estimates were published on 9 September 2004 (for mid-2001 and mid-2002) and 7 October 2004 (for mid-1992 to mid-2000), following the local authority population studies, and replace all earlier versions. All figures shown on this table are now therefore on a consistent basis.

⁵ Data for mid-2004 for London were revised due to the Harrow correction that was published on 20 December 2005.

**Table 1.4
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
Scotland																
Persons																
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	5,112	66	257	656	863	739	665	849	273	435	252	42	15	1,061	3,161	890
1991	5,083	66	258	634	746	795	696	853	265	441	259	51	19	1,021	3,151	912
1996	5,092	59	252	643	651	798	722	925	259	448	256	57	24	1,019	3,151	922
1998	5,077	58	239	644	628	766	749	941	261	445	262	59	26	1,003	3,145	929
1999	5,072	56	234	643	625	743	762	951	262	444	265	59	27	995	3,144	933
2000	5,063	53	230	636	628	717	774	962	263	445	267	59	28	985	3,141	937
2001	5,064	52	224	629	633	696	782	979	262	447	272	59	29	970	3,150	944
2002	5,055	51	217	622	639	669	788	993	262	449	276	58	30	955	3,150	950
2003	5,057	52	212	614	648	648	793	1,008	265	452	281	55	31	943	3,156	958
2004	5,078	54	210	609	653	635	796	1,025	270	455	286	54	31	935	3,175	968
Males																
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	2,462	34	131	336	438	371	331	410	127	184	86	10	3	543	1,636	283
1991	2,445	34	132	324	377	394	345	415	124	192	91	13	3	522	1,623	299
1996	2,447	30	128	328	327	392	355	454	122	198	93	15	5	521	1,616	310
1998	2,439	30	122	329	315	374	367	463	124	198	96	16	5	513	1,610	316
1999	2,437	29	120	329	313	362	372	469	125	198	98	16	6	510	1,609	318
2000	2,432	28	118	326	315	347	377	474	125	199	100	17	6	505	1,606	322
2001	2,434	26	115	322	319	337	379	483	125	200	103	17	6	497	1,610	327
2002	2,432	26	111	319	324	325	382	490	125	202	106	17	7	489	1,612	331
2003	2,435	26	108	314	329	315	383	496	126	204	108	16	7	483	1,616	336
2004	2,446	28	107	312	332	310	384	503	129	207	111	16	7	479	1,627	341
Females																
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	424	368	334	439	146	250	166	32	12	518	1,525	606
1991	2,639	32	126	309	369	402	351	437	141	249	168	38	16	499	1,528	612
1996	2,645	28	123	315	324	406	367	470	137	250	164	42	20	498	1,535	612
1998	2,638	28	116	315	313	392	382	478	137	248	166	43	21	490	1,535	614
1999	2,635	27	114	314	312	381	390	483	138	246	166	43	22	486	1,535	614
2000	2,631	26	112	310	313	369	397	488	138	246	166	43	22	480	1,535	616
2001	2,630	26	109	307	314	359	403	496	137	246	169	43	23	473	1,540	617
2002	2,623	25	106	303	315	344	406	504	137	247	171	41	23	466	1,538	619
2003	2,623	25	104	300	318	332	410	512	139	248	173	39	24	460	1,540	622
2004	2,632	26	103	297	321	325	412	521	141	248	175	38	24	457	1,549	627
Northern Ireland																
Persons																
1976	1,524	26	111	306	243	198	163	231	73	111	53	8	2	471	840	212
1981	1,543	27	106	282	271	200	175	227	68	116	57	..	..	444	874	224
1986	1,574	28	107	261	277	217	190	227	71	115	64	16	..	423	917	234
1991	1,607	26	106	260	256	240	200	241	70	121	69	14	6	417	945	246
1996	1,662	24	99	266	244	257	220	266	70	123	72	15	7	415	993	253
1998	1,678	24	97	264	239	257	231	275	71	122	74	16	7	411	1,010	257
1999	1,679	23	96	262	237	252	237	279	73	122	75	16	7	408	1,014	258
2000	1,683	22	95	259	237	247	243	284	73	123	75	16	7	403	1,020	259
2001	1,689	22	93	255	240	243	248	290	74	123	77	16	7	397	1,030	262
2002	1,697	22	91	253	243	238	251	296	75	125	79	16	7	393	1,037	266
2003	1,703	21	89	251	246	233	254	301	78	126	81	16	8	388	1,044	271
2004	1,710	22	87	248	250	229	256	305	81	127	82	16	8	383	1,052	275
Males																
1976	754	13	58	157	127	102	81	111	34	47	19	3	..	242	442	70
1981	757	14	54	145	140	102	87	109	32	50	21	..	..	228	454	75
1986	768	14	55	134	142	109	95	110	33	50	23	4	..	217	474	77
1991	783	13	54	133	131	119	100	118	32	53	26	4	1	213	487	83
1996	810	12	51	136	124	128	109	131	33	54	27	4	1	212	511	87
1998	819	12	50	135	121	128	114	135	34	54	28	5	2	211	520	89
1999	818	12	49	134	119	125	117	138	35	54	29	5	2	209	521	89
2000	820	11	49	133	120	122	119	141	35	55	29	5	2	207	524	90
2001	824	11	48	131	122	120	122	144	35	56	30	5	2	204	529	92
2002	829	11	47	130	124	117	123	147	36	56	31	5	2	202	534	94
2003	833	11	46	129	126	115	124	149	38	58	31	5	2	199	538	95
2004	836	11	45	127	128	113	125	151	39	58	32	5	2	197	542	97
Females																
1976	769	13	53	149	116	96	81	120	38	64	33	6	2	229	398	143
1981	786	13	52	137	130	98	88	118	37	66	37	..	..	216	420	150
1986	805	13	52	127	135	107	96	118	38	65	41	12	..	206	442	157
1991	824	13	52	127	125	121	100	123	38	67	44	10	4	203	458	163
1996	851	11	49	130	120	129	110	135	37	69	45	11	6	203	482	167
1998	859	12	47	129	118	129	117	139	37	68	46	11	6	201	490	168
1999	861	11	47	128	117	127	120	141	38	68	46	11	6	199	493	169
2000	862	11	46	126	118	125	124	143	38	68	46	11	6	196	497	169
2001	865	10	45	124	119	123	126	146	38	68	47	11	6	193	501	170
2002	868	11	44	123	119	120	128	149	39	68	48	11	6	191	504	173
2003	870	10	43	122	120	118	129	152	40	68	49	11	6	189	506	175
2004	874	11	42	121	122	116	130	154	42	69	50	11	6	187	509	178

Table 1.5 Population: age, sex and legal marital status¹

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	39,837	5,625	11,867	917	695	19,103	4,617	12,000	1,165	2,953	20,734
1991	40,501	5,891	11,636	1,187	727	19,441	4,817	11,833	1,459	2,951	21,060
1996	40,827	6,225	11,310	1,346	733	19,614	5,168	11,433	1,730	2,881	21,212
1997	40,966	6,337	11,240	1,379	734	19,690	5,288	11,353	1,781	2,855	21,276
1998	41,121	6,450	11,183	1,405	735	19,773	5,406	11,284	1,827	2,832	21,349
1999	41,325	6,582	11,143	1,433	732	19,890	5,526	11,235	1,875	2,800	21,435
2000	41,569	6,721	11,113	1,456	731	20,022	5,650	11,199	1,927	2,772	21,547
2001	41,865	6,894	11,090	1,482	733	20,198	5,798	11,150	1,975	2,745	21,667
2002	42,135	7,076	11,015	1,535	731	20,357	5,961	11,073	2,035	2,709	21,778
2003	42,413	7,261	10,940	1,590	728	20,520	6,128	11,000	2,096	2,668	21,892
2004	42,719	7,461	10,863	1,644	726	20,694	6,306	10,935	2,156	2,628	22,025
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	3,131	1,587	10	0	0	1,596	1,484	49	1	0	1,535
1991	2,665	1,358	8	0	0	1,366	1,267	32	0	0	1,300
1996	2,402	1,209	6	0	0	1,216	1,164	21	0	0	1,186
1997	2,478	1,246	6	0	0	1,253	1,203	20	1	1	1,225
1998	2,532	1,274	6	1	0	1,281	1,230	20	1	1	1,251
1999	2,543	1,280	6	1	1	1,288	1,234	20	1	1	1,255
2000	2,523	1,276	6	1	1	1,283	1,221	18	1	1	1,240
2001	2,567	1,304	5	1	1	1,312	1,237	16	1	1	1,255
2002	2,633	1,347	4	1	1	1,353	1,266	13	1	1	1,280
2003	2,702	1,386	4	1	1	1,391	1,299	12	0	1	1,311
2004	2,770	1,423	3	0	0	1,427	1,332	11	0	0	1,344
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	4,171	1,768	317	14	0	2,099	1,383	657	32	1	2,072
1991	3,911	1,717	242	12	0	1,971	1,421	490	29	1	1,941
1996	3,291	1,538	117	3	0	1,658	1,361	260	11	1	1,633
1997	3,141	1,479	99	3	0	1,580	1,325	225	9	1	1,561
1998	3,047	1,442	86	2	0	1,530	1,306	201	8	1	1,517
1999	3,047	1,449	78	2	0	1,530	1,320	188	8	1	1,517
2000	3,088	1,470	74	3	0	1,548	1,352	180	8	1	1,540
2001	3,157	1,501	74	3	1	1,579	1,390	178	8	1	1,578
2002	3,211	1,534	69	3	1	1,607	1,428	166	8	1	1,604
2003	3,283	1,573	69	3	1	1,646	1,466	161	8	1	1,637
2004	3,358	1,621	67	3	1	1,692	1,499	156	8	2	1,665
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	3,713	835	949	79	1	1,863	527	1,207	113	4	1,850
1991	4,154	1,132	856	82	1	2,071	800	1,158	123	2	2,083
1996	3,950	1,273	650	46	1	1,970	977	906	93	3	1,980
1997	3,877	1,294	595	42	1	1,932	1,012	844	85	3	1,945
1998	3,789	1,304	544	38	1	1,887	1,039	783	77	3	1,902
1999	3,687	1,304	497	34	1	1,836	1,051	725	72	3	1,851
2000	3,605	1,305	459	31	1	1,796	1,065	677	65	3	1,810
2001	3,487	1,293	420	28	1	1,742	1,059	625	58	3	1,745
2002	3,348	1,276	371	26	1	1,674	1,052	567	52	3	1,674
2003	3,262	1,271	337	25	1	1,634	1,053	524	49	2	1,628
2004	3,260	1,292	318	24	1	1,635	1,080	497	47	2	1,625

**Table 1.5
continued****Population: age, sex and legal marital status¹**

England and Wales

Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
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	3,338	355	1,197	124	2	1,679	206	1,293	154	6	1,660
1991	3,708	520	1,172	155	2	1,849	335	1,330	189	5	1,859
1996	4,126	776	1,135	138	2	2,050	551	1,316	201	7	2,076
1997	4,151	817	1,111	133	2	2,064	589	1,293	198	7	2,088
1998	4,136	848	1,078	127	3	2,056	621	1,259	193	7	2,081
1999	4,113	877	1,043	121	3	2,044	651	1,223	188	7	2,069
2000	4,076	904	1,007	114	2	2,027	679	1,182	181	7	2,049
2001	4,050	934	971	108	2	2,016	711	1,142	174	7	2,033
2002	4,000	961	921	105	2	1,990	743	1,094	167	6	2,010
2003	3,928	981	868	102	2	1,954	767	1,043	159	6	1,974
2004	3,813	987	811	97	2	1,897	777	985	149	5	1,916
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	6,856	396	2,738	293	12	3,438	213	2,815	350	39	3,418
1991	7,022	477	2,632	384	11	3,504	280	2,760	444	34	3,517
1996	7,017	653	2,426	398	12	3,489	427	2,568	497	36	3,528
1997	7,155	708	2,433	403	12	3,556	472	2,580	511	36	3,599
1998	7,304	768	2,442	405	13	3,627	522	2,596	523	36	3,677
1999	7,475	832	2,459	408	13	3,711	577	2,617	533	37	3,763
2000	7,661	899	2,481	410	12	3,802	635	2,640	547	37	3,859
2001	7,816	963	2,494	411	12	3,881	692	2,649	558	36	3,935
2002	7,962	1,031	2,489	424	12	3,955	751	2,650	571	35	4,007
2003	8,062	1,089	2,471	435	12	4,006	805	2,634	583	34	4,056
2004	8,140	1,142	2,445	444	11	4,043	858	2,614	593	32	4,098
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	4,422	331	141	5,355	327	4,220	388	570	5,505
1991	10,960	456	4,394	456	127	5,433	292	4,211	521	503	5,527
1996	11,820	528	4,587	628	121	5,864	318	4,466	732	440	5,956
1997	11,927	545	4,593	656	120	5,914	328	4,486	770	430	6,014
1998	12,055	565	4,608	681	121	5,974	340	4,512	807	422	6,080
1999	12,198	589	4,627	706	121	6,043	355	4,541	844	415	6,155
2000	12,328	615	4,638	727	121	6,101	372	4,564	881	410	6,227
2001	12,447	644	4,647	747	121	6,159	391	4,578	918	401	6,289
2002	12,580	671	4,649	780	120	6,220	413	4,596	960	391	6,359
2003	12,715	702	4,647	815	118	6,283	437	4,613	1,002	380	6,433
2004	12,857	736	4,644	850	117	6,347	465	4,628	1,045	371	6,510
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	7,768	223	2,234	76	539	3,072	477	1,759	127	2,333	4,696
1991	8,080	231	2,332	99	586	3,248	422	1,853	152	2,405	4,832
1996	8,221	247	2,390	134	597	3,367	369	1,897	196	2,393	4,854
1997	8,237	248	2,404	143	597	3,391	358	1,904	207	2,377	4,845
1998	8,258	250	2,418	152	597	3,417	348	1,913	218	2,362	4,841
1999	8,262	251	2,431	161	594	3,437	338	1,922	230	2,336	4,825
2000	8,287	252	2,449	171	593	3,466	327	1,938	243	2,313	4,821
2001	8,342	254	2,478	183	595	3,510	318	1,960	259	2,295	4,832
2002	8,400	256	2,511	197	595	3,557	308	1,987	276	2,272	4,843
2003	8,461	258	2,544	211	594	3,607	301	2,015	294	2,244	4,854
2004	8,520	259	2,575	225	593	3,653	293	2,044	314	2,216	4,867

¹ Marital Status Estimates for 1992 to 2002 were revised in light of the local authority population studies published 7 October 2004.

Table 2.2 Key demographic and health indicators

Constituent countries of the United Kingdom

Numbers (thousands), rates, percentages, mean age

	Population	Live births	Deaths	Dependency ratio		Live births					Expectation of life (in years) at birth		Infant mortality rate ⁷
				Children ¹	Elderly ²	TFR ³	Standardised mean age of mother at birth (years) ⁴	Unstandardised mean age of mother at birth (years) ⁵	Outside marriage as percentage of total live births	Age-standardised mortality rate ⁶	Males	Females	
United Kingdom													
1976	56,216.1	675.5	680.8	42.1	29.5	1.74	..	26.4	9.0	10,486	..	..	14.5
1981	56,357.5	730.7	658.0	37.1	29.7	1.82	27.0	26.8	12.5	9,506	70.8	76.8	11.2
1986	56,683.8	754.8	660.7	33.5	29.7	1.78	27.4	27.0	21.4	8,914	71.9	77.7	9.5
1991	57,438.7	792.3	646.2	33.2	30.0	1.82	27.7	27.7	29.8	8,168	73.2	78.7	7.4
1996 ⁸	58,164.4	733.2	636.0	33.9	30.0	1.73	28.2	28.6	35.5	7,584	74.3	79.4	6.1
1999 ⁹	58,684.4	700.0	632.1	33.4	29.9	1.68	28.4	28.9	38.8	7,318	75.0	79.9	5.8
2000 ⁹	58,886.1	679.0	608.4	33.1	29.9	1.64	28.5	29.1	39.5	6,974	75.4	80.2	5.6
2001 ⁹	59,113.5	669.1	602.3	32.6	29.8	1.63	28.6	29.2	40.1	6,807	75.7	80.4	5.5
2002 ⁹	59,321.7	668.8	606.2	32.2	29.8	1.64	28.7	29.3	40.6	6,765	75.9	80.5	5.2
2003	59,553.8	695.6	612.0	31.8	29.9	1.71	28.8	29.4	41.5	6,757	76.3	80.7	5.3
2004 ⁹	59,834.3	716.0	583.1	31.4	30.0	1.77	28.9	29.4	42.3	6,390	..	..	5.0
2005 ^P	..	..	..	..	..	..	..	..	..	6,278 ¹⁰	..	..	5.1
England													
1976	46,659.9	550.4	560.3	41.4	29.7	1.70	..	26.4	9.2	10,271	..	..	14.2
1981	46,820.8	598.2	541.0	36.4	29.9	1.79	..	26.8	12.9	9,298	71.1	77.0	10.9
1986	47,187.6	623.6	544.5	33.1	29.8	1.76	27.4	27.0	21.4	8,725	72.2	77.9	9.5
1991	47,875.0	660.8	534.0	32.9	30.0	1.81	27.7	27.7	30.1	8,017	73.4	78.9	7.3
1996 ⁸	48,519.1	614.2	524.0	33.7	30.0	1.73	28.2	28.7	35.5	7,414	74.5	79.6	6.1
1999 ⁹	49,032.9	589.5	519.6	33.3	29.9	1.69	28.4	29.0	38.5	7,138	75.3	80.1	5.7
2000 ⁹	49,233.3	572.8	501.0	33.0	29.8	1.65	28.5	29.2	39.1	6,821	75.7	80.4	5.6
2001 ⁹	49,449.7	563.7	496.1	32.5	29.7	1.63	28.6	29.3	39.6	6,650	76.0	80.6	5.4
2002 ⁹	49,646.9	565.7	499.1	32.1	29.7	1.65	28.7	29.4	40.1	6,603	76.2	80.7	5.2
2003	49,855.7	589.9	503.4	31.8	29.8	1.73	28.9	29.4	40.9	6,602	76.6	80.9	5.3
2004 ⁹	50,093.1	607.2	479.2	31.4	29.9	1.78	29.0	29.5	41.7	6,232	..	..	5.0
2005 ^P	..	..	..	..	..	..	..	..	..	6,125 ¹⁰	..	..	5.0
Wales													
1976	2,799.3	33.4	36.3	42.0	30.9	1.78	..	26.0	8.7	10,858	..	..	13.7
1981	2,813.5	35.8	35.0	37.6	31.6	1.87	..	26.6	11.2	9,846	70.4	76.4	12.6
1986	2,810.9	37.0	34.7	34.3	32.5	1.86	26.9	26.5	21.1	9,043	71.6	77.5	9.5
1991	2,873.0	38.1	34.1	34.4	33.5	1.88	27.1	27.0	32.3	8,149	73.1	78.8	6.6
1996 ⁸	2,891.3	34.9	34.6	34.9	33.7	1.81	27.5	27.8	41.2	7,758	73.9	79.1	5.6
1999 ⁹	2,900.6	32.1	35.0	34.4	33.6	1.72	27.6	28.1	46.1	7,637	74.7	79.6	6.1
2000 ⁹	2,906.9	31.3	33.3	34.1	33.5	1.68	27.7	28.2	47.2	7,180	74.9	79.8	5.3
2001 ⁹	2,910.2	30.6	33.0	33.7	33.6	1.66	27.8	28.3	48.3	7,017	75.4	80.1	5.4
2002 ⁹	2,923.4	30.2	33.2	33.2	33.6	1.63	28.0	28.4	49.7	6,951	75.7	80.2	4.5
2003	2,938.0	31.4	33.7	32.7	33.7	1.71	28.1	28.5	50.3	6,980	76.0	80.4	4.3
2004	2,952.5	32.1	32.1	32.2	33.9	1.77	28.2	28.5	51.3	6,582	..	..	4.9
2005 ^P	..	..	..	..	..	..	..	..	..	6,464 ¹⁰	..	..	4.3
Scotland													
1976	5,233.4	64.9	65.3	44.7	28.4	1.79	..	26.0	9.3	11,675	..	..	14.8
1981	5,180.2	69.1	63.8	38.2	28.4	1.84	..	26.3	12.2	10,849	69.1	75.3	11.3
1986	5,111.8	65.8	63.5	33.6	28.1	1.67	27.1	26.6	20.6	10,120	70.2	76.2	8.8
1991	5,083.3	67.0	61.0	32.4	28.9	1.69	27.5	27.4	29.1	9,216	71.4	77.1	7.1
1996	5,092.2	59.3	60.7	32.3	29.2	1.56	28.0	28.5	36.0	8,791	72.2	77.9	6.2
1999	5,072.0	55.1	60.3	31.7	29.7	1.51	28.3	28.9	41.2	8,493	72.8	78.4	5.0
2000	5,062.9	53.1	57.8	31.4	29.8	1.48	28.4	29.0	42.6	8,082	73.1	78.6	5.7
2001	5,064.2	52.5	57.4	30.8	30.0	1.49	28.5	29.2	43.3	7,930	73.3	78.8	5.5
2002	5,054.8	51.3	58.1	30.3	30.2	1.48	28.6	29.2	44.0	7,955	73.5	78.9	5.3
2003	5,057.4	52.4	58.5	29.9	30.3	1.54	28.7	29.3	45.5	7,922	73.8	79.1	5.1
2004	5,078.4	54.0	56.2	29.5	30.5	1.60	28.9	29.4	46.7	7,536	..	..	4.9
2005 ^P	..	..	..	..	..	..	..	..	..	7,406 ¹⁰	..	..	5.2
Northern Ireland													
1976	1,523.5	26.4	17.0	56.1	25.3	2.68	..	27.4	5.0	11,746	..	..	18.3
1981	1,543.0	27.2	16.3	50.6	25.3	2.59	28.1	27.5	7.0	10,567	69.2	75.5	13.2
1986	1,573.5	28.0	16.1	46.1	25.5	2.45	28.1	27.5	12.8	10,071	70.9	77.1	13.2
1991	1,607.3	26.0	15.1	44.1	26.1	2.16	28.3	28.0	20.3	8,303	72.6	78.4	7.4
1996	1,661.8	24.4	15.2	41.8	25.5	1.95	28.7	28.8	26.0	7,742	73.8	79.2	5.8
1999	1,679.0	23.0	15.7	40.2	25.5	1.86	28.8	29.0	30.3	7,699	74.5	79.6	6.4
2000	1,682.9	21.5	14.9	39.5	25.4	1.75	29.0	29.2	31.8	7,279	74.8	79.8	5.1
2001	1,689.3	22.0	14.5	38.6	25.5	1.80	29.1	29.4	32.5	6,976	75.2	80.1	6.1
2002	1,696.6	21.4	14.6	37.9	25.7	1.77	29.2	29.5	33.5	6,930	75.6	80.4	4.7
2003	1,702.6	21.6	14.5	37.2	25.9	1.81	29.2	29.5	34.4	6,744	75.8	80.6	5.3
2004	1,710.3	22.3	14.4	36.4	26.2	1.87	29.4	29.7	34.5	6,609	..	..	5.5
2005 ^P	..	..	..	..	..	..	..	..	..	6,411 ¹⁰	..	..	6.3

Notes: Some of these indicators are also in other tables. They are brought together to make comparison easier.

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 to 2004. Births and deaths figures for England and also for Wales exclude events for persons usually resident outside England and Wales. These events are, however, included in totals for England and Wales combined, and for the United Kingdom.

From 1981 births to non-resident mothers in Northern Ireland are excluded from the figures for Northern Ireland, and the United Kingdom.

- 1 Percentage of children under 16 to working population (males 16–64 and females 16–59).
- 2 Percentage of males 65 and over and females 60 and over to working population (males 16–64 and females 16–59).
- 3 TFR (total fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life. It is sometimes called the TPF (total period fertility rate).

- 4 Standardised to take account of the age structure of the population.
- 5 Unstandardised and therefore takes no account of the age structure of the population.
- 6 Per million population. The age-standardised mortality rate makes allowances for changes in the age structure of the population. See Notes to tables.
- 7 Deaths under one year per 1,000 live births.
- 8 These revised population estimates were published on 9 September 2004 (for mid-2001 and mid-2002) and 7 October (for mid-1992 to mid-2000), following the local authority population studies, and replace all earlier versions. All figures shown on this table are now therefore on a consistent basis.
- 9 Population estimates for mid-2004 for the United Kingdom, Great Britain, England and Wales and England were revised due to the Harrow correction that was published on 20 December 2005. Rates for 2004 have been calculated using these revised estimates.
- 10 Calculated using the 2004-based population projections for 2005.

P Provisional

Table 3.1 Live births: age of mother

England and Wales

Numbers (thousands), rates, mean age and TFRs

Year and quarter	Age of mother at birth							Mean ¹ age (years)	Age of mother at birth							Mean ² age (years)	TFR ³
	All ages	Under 20	20–24	25–29	30–34	35–39	40 and over		All ages	Under 20	20–24	25–29	30–34	35–39	40 and over		
	Total live births (numbers)								Age-specific fertility rates ⁴								
1961	811.3	59.8	249.8	248.5	152.3	77.5	23.3	27.6	89.2	37.3	172.6	176.9	103.1	48.1	15.0	27.4	2.77
1964(max)	876.0	76.7	276.1	270.7	153.5	75.4	23.6	27.2	92.9	42.5	181.6	187.3	107.7	49.8	13.7	27.3	2.93
1966	849.8	86.7	285.8	253.7	136.4	67.0	20.1	26.8	90.5	47.7	176.0	174.0	97.3	45.3	12.5	27.1	2.75
1971	783.2	82.6	285.7	247.2	109.6	45.2	12.7	26.2	83.5	50.6	152.9	153.2	77.1	32.8	8.7	26.6	2.37
1976	584.3	57.9	182.2	220.7	90.8	26.1	6.5	26.4	60.4	32.2	109.3	118.7	57.2	18.6	4.8	26.5	1.71
1977(min)	569.3	54.5	174.5	207.9	100.8	25.5	6.0	26.5	58.1	29.4	103.7	117.5	58.6	18.2	4.4	26.6	1.66
1981	634.5	56.6	194.5	215.8	126.6	34.2	6.9	26.8	61.3	28.1	105.3	129.1	68.6	21.7	4.9	27.0	1.80
1986	661.0	57.4	192.1	229.0	129.5	45.5	7.6	27.0	60.6	30.1	92.7	123.8	78.0	24.6	4.8	27.4	1.77
1991	699.2	52.4	173.4	248.7	161.3	53.6	9.8	27.7	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	27.9	63.6	31.7	86.1	117.6	87.4	33.4	5.8	27.8	1.80
1993	673.5	45.1	152.0	236.0	171.1	58.8	10.5	28.1	62.7	30.9	82.5	114.4	87.4	34.1	6.2	27.9	1.76
1994	664.7	42.0	140.2	229.1	179.6	63.1	10.7	28.4	62.0	28.9	79.0	112.2	89.4	35.8	6.4	28.1	1.75
1995	648.1	41.9	130.7	217.4	181.2	65.5	11.3	28.5	60.5	28.5	76.4	108.4	88.3	36.3	6.8	28.2	1.72
1996	649.5	44.7	125.7	211.1	186.4	69.5	12.1	28.6	60.6	29.7	77.0	106.6	89.8	37.5	7.2	28.2	1.74
1997	643.1	46.4	118.6	202.8	187.5	74.9	12.9	28.8	60.0	30.2	76.0	104.3	89.8	39.4	7.6	28.3	1.73
1998	635.9	48.3	113.5	193.1	188.5	78.9	13.6	28.9	59.2	30.9	74.9	101.5	90.6	40.4	7.9	28.3	1.72
1999	621.9	48.4	110.7	181.9	185.3	81.3	14.3	29.0	57.8	30.9	73.0	98.3	89.6	40.6	8.1	28.4	1.70
2000	604.4	45.8	107.7	170.7	180.1	85.0	15.1	29.1	55.9	29.3	70.0	94.3	87.9	41.4	8.3	28.5	1.65
2001	594.6	44.2	108.8	159.9	178.9	86.5	16.3	29.2	54.7	28.0	69.0	91.7	88.0	41.5	8.8	28.6	1.63
2002	596.1	43.5	110.9	153.4	180.5	90.5	17.3	29.3	54.7	27.0	69.2	91.6	89.8	43.0	9.1	28.7	1.65
2003	621.5	44.2	116.6	156.9	187.2	97.4	19.1	29.4	56.8	26.8	71.2	96.4	94.8	46.4	9.8	28.8	1.73
2004 ⁵	639.7	45.1	121.1	160.0	190.6	102.2	20.8	29.4	58.2	26.9	72.7	98.4	99.4	48.9	10.4	28.9	1.78
2000 March	148.7	11.4	26.4	42.5	44.1	20.6	3.6	29.1	55.3	29	69	95	87	40	8	28.5	1.64
June	150.7	11.1	26.0	42.8	45.7	21.4	3.7	29.2	56.0	29	68	95	90	42	8	28.6	1.66
Sept	155.0	11.8	27.8	43.6	46.2	21.7	3.9	29.1	57.0	30	72	96	90	42	9	28.5	1.69
Dec	150.1	11.5	27.5	41.8	44.1	21.4	3.9	29.1	55.2	29	71	92	86	41	9	28.5	1.64
2001 March	145.5	11.0	26.5	39.8	43.3	21.0	4.0	29.2	54.3	28	68	93	86	41	9	28.6	1.62
June	148.8	10.8	26.4	40.3	45.5	21.7	4.0	29.3	54.9	27	67	93	90	42	9	28.7	1.64
Sept	153.0	11.4	28.1	41.0	46.4	22.0	4.1	29.2	55.8	29	71	93	91	42	9	28.6	1.67
Dec	147.4	11.1	27.8	38.9	43.7	21.8	4.2	29.2	53.8	28	70	88	85	42	9	28.6	1.61
2002 March	143.3	10.5	26.5	37.4	43.2	21.6	4.1	29.3	53.3	26	67	91	87	42	9	28.7	1.61
June	147.2	10.4	26.7	37.9	45.5	22.4	4.3	29.4	54.1	26	67	91	91	43	9	28.8	1.63
Sept	155.0	11.4	28.9	39.9	46.9	23.4	4.5	29.3	56.4	28	72	95	93	44	9	28.7	1.70
Dec	150.6	11.2	28.8	38.2	45.0	23.0	4.5	29.3	54.8	28	71	91	89	44	9	28.7	1.65
2003 March	147.4	10.9	27.9	37.5	44.0	22.6	4.6	29.3	54.6	27	69	93	90	44	10	28.8	1.66
June	155.1	10.7	28.5	39.3	47.4	24.5	4.7	29.5	56.9	26	70	97	96	47	10	28.9	1.73
Sept	162.8	11.5	30.5	41.0	49.3	25.6	5.0	29.4	59.0	28	74	100	99	48	10	28.9	1.79
Dec	156.0	11.2	29.7	39.1	46.5	24.6	4.8	29.4	56.6	27	72	95	94	47	10	28.8	1.72
2004 March ⁵	155.2	11.0	29.3	38.7	46.6	24.7	4.9	29.4	56.8	27	71	96	98	47	10	28.9	1.74
June ⁵	157.4	10.7	29.3	39.4	47.7	25.2	5.0	29.5	57.6	26	71	97	100	49	10	29.0	1.77
Sept ⁵	165.4	11.7	31.4	41.6	49.0	26.3	5.4	29.4	59.9	28	75	102	102	50	11	28.9	1.84
Dec ⁵	161.7	11.6	31.1	40.3	47.2	26.0	5.5	29.4	58.6	28	74	99	98	49	11	28.9	1.80
2005 March ^{6p}	154.3	10.9	29.3	38.9	44.9	24.8	5.4	29.5	56.6	26	70	95	98	49	11	29.0	1.74
June ^{6p}	159.7	10.7	29.6	40.3	47.5	26.2	5.4	29.5	58.0	25	70	97	102	51	11	29.1	1.78
Sept ^{6p}	169.7	11.8	32.4	43.5	49.3	26.9	5.7	29.4	60.9	28	76	104	105	52	11	29.0	1.88

Notes: 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.

1 Unstandardised and therefore takes no account of the age structure of the population.

2 Standardised to take account of the age structure of the population. This measure is more appropriate for use when analysing trends or making comparisons between different geographies.

3 TFR (total fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life. It is sometimes called the TPFR (total period fertility rate). During the post Second World War period the TFR reached a maximum in 1964 and a minimum in 1977.

4 Births per 1,000 women in the age-group; all quarterly age-specific fertility rates are adjusted for days in the quarter. They are not adjusted for seasonality.

5 Rates for 2004 have been calculated using the revised mid-2004 population estimates published on 20 December 2005.

6 Birth rates for 2005 are based on the 2004-based population projections for 2005.

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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								Mean ¹ age (years)	Age of mother at birth								Registration ²		
	All ages	Under 20	20-24	25-29	30-34	35-39	40 and over	All ages		Under 20	20-24	25-29	30-34	35-39	40 and over	Joint		Sole		
																Same ³ address	Different ³ addresses			
Live births outside marriage (numbers)								Percentage of total live births in age-group								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	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	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	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	25.5	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	26.0	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	26.1	35.8	88.0	56.5	29.5	21.7	23.4	26.7	58.1	19.9	21.9		
1997	238.2	41.1	69.5	63.4	42.2	18.2	3.7	26.2	37.0	88.7	58.6	31.3	22.5	24.3	28.6	59.5	19.3	21.2		
1998	240.6	43.0	67.8	62.4	43.9	19.6	3.9	26.3	37.8	89.1	59.7	32.3	23.3	24.8	29.0	60.9	18.3	20.8		
1999	241.9	43.0	67.5	61.2	45.0	20.8	4.3	26.4	38.9	89.0	61.0	33.6	24.3	25.6	30.2	61.8	18.2	19.9		
2000	238.6	41.1	67.5	59.1	43.9	22.3	4.7	26.5	39.5	89.7	62.6	34.6	24.4	26.2	31.0	62.7	18.2	19.2		
2001	238.1	39.5	68.1	56.8	45.2	23.3	5.1	26.7	40.0	89.5	62.6	35.5	25.3	26.9	31.6	63.2	18.4	18.4		
2002	242.0	38.9	70.2	55.8	46.4	25.1	5.6	26.8	40.6	89.5	63.3	36.4	25.7	27.7	32.2	63.7	18.5	17.8		
2003	257.2	39.9	75.7	58.2	49.2	27.8	6.4	26.9	41.4	90.2	64.9	37.1	26.3	28.5	33.3	63.5	19.0	17.4		
2004	269.7	41.0	79.8	61.4	50.7	29.7	7.1	27.0	42.2	91.0	65.9	38.4	26.6	29.0	34.0	63.6	19.6	16.8		
1997 March	58.6	10.2	17.4	15.7	10.2	4.2	0.9	26.1	37.0	88.7	58.4	31.1	22.4	23.9	28.7	58.4	19.5	22.0		
1997 June	58.9	10.1	17.1	15.5	10.6	4.7	0.9	26.3	36.1	89.1	58.0	30.1	22.0	24.3	28.4	59.6	19.4	21.0		
1997 Sept	61.4	10.5	17.9	16.5	10.9	4.7	0.9	26.2	37.3	88.8	58.9	31.8	22.7	24.4	27.8	59.9	18.9	21.2		
1997 Dec	59.3	10.4	17.2	15.7	10.4	4.6	0.9	26.2	37.8	88.3	59.2	32.2	23.0	24.8	29.3	60.0	19.2	20.7		
1998 March	58.5	10.4	16.5	15.3	10.7	4.6	1.0	26.3	37.5	89.0	59.5	31.9	23.1	24.4	29.6	60.5	18.4	21.1		
1998 June	58.4	10.3	16.2	15.4	10.8	4.7	0.9	26.3	36.8	89.6	59.1	31.8	22.5	24.0	28.3	61.0	18.2	20.8		
1998 Sept	63.2	11.3	17.9	16.3	11.5	5.2	1.0	26.3	38.1	89.2	60.0	32.3	23.6	25.2	28.5	60.9	18.4	20.7		
1998 Dec	60.5	11.0	17.2	15.4	10.9	5.0	1.0	26.3	38.9	88.5	60.4	33.3	24.0	25.7	29.7	61.2	18.4	20.4		
1999 March	59.0	10.8	16.4	15.0	10.9	5.0	1.0	26.3	38.8	89.7	60.5	33.4	24.1	25.4	29.5	61.4	18.2	20.4		
1999 June	59.8	10.5	16.5	15.3	11.2	5.2	1.1	26.5	38.0	89.2	60.6	33.0	23.4	25.3	31.3	61.6	18.2	20.1		
1999 Sept	62.9	11.1	17.7	16.0	11.7	5.4	1.1	26.4	39.3	88.7	61.7	34.1	24.7	25.6	29.3	62.2	18.1	19.6		
1999 Dec	60.2	10.6	17.0	14.9	11.1	5.3	1.1	26.4	39.5	88.4	61.2	34.0	24.8	26.2	30.8	62.0	18.4	19.5		
2000 March	59.0	10.2	16.5	14.8	10.9	5.4	1.2	26.5	39.7	89.7	62.6	34.8	24.7	26.1	31.7	62.5	18.1	19.5		
2000 June	57.9	10.0	16.1	14.4	10.9	5.5	1.1	26.6	38.5	89.7	61.9	33.5	23.8	25.7	30.6	62.9	17.8	19.2		
2000 Sept	61.7	10.6	17.6	15.3	11.3	5.7	1.2	26.5	39.8	89.7	63.3	35.0	24.5	26.5	30.4	62.7	18.1	19.2		
2000 Dec	60.1	10.3	17.3	14.7	10.9	5.7	1.2	26.5	40.0	89.5	62.8	35.2	24.7	26.6	31.4	62.6	18.6	18.8		
2001 March	58.0	9.9	16.7	13.9	10.8	5.7	1.1	26.5	39.8	90.4	63.0	34.9	24.8	26.9	28.0	62.5	18.7	18.8		
2001 June	58.1	9.6	16.3	14.1	11.2	5.7	1.3	26.7	39.1	89.0	61.5	34.9	24.5	26.4	32.2	63.3	18.6	18.6		
2001 Sept	61.8	10.2	17.6	14.7	12.0	6.0	1.3	26.7	40.4	89.5	62.6	35.9	25.8	27.2	32.2	63.5	18.4	18.2		
2001 Dec	60.2	9.9	17.5	14.1	11.3	5.9	1.4	26.7	40.9	89.2	63.1	36.4	25.9	27.2	33.9	63.4	18.6	18.0		
2002 March	58.0	9.4	16.7	13.6	10.9	6.0	1.3	26.8	40.5	89.4	63.0	36.4	25.4	27.7	31.5	63.2	18.5	18.3		
2002 June	58.3	9.3	16.6	13.5	11.4	6.1	1.4	26.8	39.6	89.4	62.2	35.6	25.0	27.2	31.7	64.2	18.2	17.7		
2002 Sept	63.4	10.2	18.4	14.6	12.3	6.5	1.5	26.8	40.9	89.3	63.8	36.6	26.1	27.9	32.7	63.9	18.5	17.5		
2002 Dec	62.3	10.0	18.4	14.1	11.9	6.5	1.5	26.8	41.4	89.7	64.1	36.9	26.4	28.0	32.8	63.3	18.9	17.8		
2003 March	61.0	9.8	18.0	13.9	11.6	6.3	1.5	26.8	41.4	90.1	64.5	37.0	26.9	29.1	33.3	63.0	18.9	18.1		
2003 June	62.8	9.6	18.3	14.2	12.2	6.9	1.6	27.0	40.5	90.0	64.0	36.2	25.7	28.3	33.7	64.0	18.5	17.4		
2003 Sept	67.6	10.3	20.0	15.3	13.0	7.3	1.7	26.9	41.5	90.2	65.6	38.3	26.4	28.6	33.3	63.7	19.3	18.0		
2003 Dec	65.8	10.2	19.5	14.9	12.5	7.3	1.6	26.9	42.2	90.4	65.6	38.0	27.7	29.5	32.9	63.3	19.4	17.4		
2004 March	65.2	10.1	19.3	14.8	12.5	7.0	1.7	26.9	42.0	91.2	65.8	38.2	26.8	28.2	34.3	63.1	19.4	17.4		
2004 June	65.2	9.8	19.1	14.9	12.5	7.3	1.7	27.0	41.4	91.0	65.1	37.7	26.2	28.8	34.5	63.9	19.5	16.6		
2004 Sept	70.2	10.7	20.7	16.1	13.0	7.9	1.8	27.0	42.4	91.2	66.1	38.6	26.5	30.0	33.5	63.7	19.7	16.6		
2004 Dec	69.1	10.6	20.7	15.7	12.7	7.5	1.9	26.9	42.7	90.6	66.6	39.0	27.0	29.0	33.9	63.6	19.8	16.6		
2005 March ^p	66.3	10.0	19.6	15.2	12.2	7.3	1.9	27.0	43.0	92.0	67.0	39.0	27.1	29.6	35.2	63.1	20.3	16.6		
2005 June ^p	66.6	9.8	19.7	15.4	12.6	7.4	1.8	27.0	41.7	91.2	66.5	38.1	26.4	28.1	33.3	63.7	19.8	16.5		
2005 Sept ^p	73.5	10.9	22.1	17.2	13.4	7.8	2.0	27.0	43.3	92.1	68.1	39.7	27.2	29.1	35.6	63.8	20.3	15.9		

1 The mean ages in this table are unstandardised and therefore take no account of the structure of the population by age or marital status.

2 Births outside marriage can be registered by both the mother and father (joint) or by the mother alone (sole).

3 Usual address(es) of parents.

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Table 4.1 Conceptions: age of women 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 18	Under 20	20-24	25-29	30-34	35-39	40 and over
(a) numbers (thousands)									
1991	853.7	7.5	40.1	101.6	233.3	281.5	167.5	57.6	12.1
1996	816.9	8.9	43.5	94.9	179.8	252.6	200.0	75.5	14.1
1999	774.0	7.9	42.0	98.8	157.6	218.5	197.1	86.0	16.0
2000	767.0	8.1	41.3	97.7	159.0	209.3	195.3	88.7	17.0
2001	763.7	7.9	41.0	96.0	161.6	199.3	196.7	92.2	17.8
2002	787.0	7.9	42.0	97.1	167.8	199.4	204.3	98.9	19.6
2003	806.8	8.0	42.2	98.6	175.3	199.8	209.0	103.1	20.9
2004 ^P	825.8	7.6	42.2	101.2	181.1	204.9	209.9	106.6	22.7
2001 March	189.2	1.9	10.2	24.3	40.4	50.0	47.8	22.3	4.4
June	187.4	2.1	10.2	24.0	39.8	48.8	47.7	22.8	4.4
Sept	189.3	1.9	10.0	23.1	39.2	49.5	49.9	23.2	4.4
Dec	197.9	2.0	10.6	24.6	42.3	51.1	51.3	23.9	4.7
2002 March	191.6	1.9	10.3	24.1	41.3	48.8	49.0	23.7	4.6
June	190.4	2.0	10.5	24.2	40.7	48.2	48.8	23.8	4.8
Sept	197.4	2.0	10.2	23.4	41.4	50.2	52.4	25.2	4.9
Dec	207.6	2.0	11.0	25.4	44.4	52.3	54.2	26.2	5.2
2003 March	198.2	1.9	10.5	24.5	42.9	49.4	51.2	25.2	4.9
June	198.5	2.1	10.8	24.7	43.2	49.1	51.1	25.2	5.2
Sept	200.1	2.0	10.2	23.7	43.1	49.3	52.8	26.1	5.2
Dec	210.0	2.0	10.7	25.7	46.1	52.0	54.0	26.7	5.6
2004 March ^P	207.9	2.0	10.9	26.2	45.9	51.1	52.6	26.6	5.6
June ^P	200.0	1.9	10.6	25.0	43.7	49.3	50.4	25.9	5.7
Sept ^P	203.6	1.8	10.0	24.0	44.1	50.7	52.7	26.6	5.6
Dec ^P	214.3	1.9	10.8	26.0	47.5	53.8	53.7	27.5	5.8
2005 March ^P	204.2	1.9	10.4	25.0	45.3	50.7	51.0	26.5	5.7
(b) rates (conceptions per thousand women in age group)¹									
1991	77.7	8.9	44.6	64.1	120.2	135.1	90.1	34.4	6.6
1996	76.2	9.5	46.3	63.2	110.1	127.6	96.3	40.7	8.4
1999	71.9	8.3	45.1	63.1	103.9	118.0	95.3	42.9	9.1
2000	70.9	8.3	43.9	62.5	103.2	115.7	95.3	43.2	9.4
2001	70.3	8.0	42.7	60.8	102.5	114.2	96.7	44.3	9.6
2002	72.2	7.9	42.8	60.3	104.6	119.1	101.6	47.0	10.3
2003	73.7	8.0	42.3	59.8	107.1	122.8	105.9	49.1	10.7
2004 ^P	75.2	7.5	41.7	60.3	108.7	126.0	109.2	50.9	11.3
2001 March	70.7	7.8	43.3	62.7	104.8	114.5	95.0	43.7	9.7
June	69.2	8.4	42.8	61.0	101.4	111.6	94.0	44.0	9.5
Sept	69.1	7.7	41.1	57.8	98.4	113.1	97.6	44.2	9.3
Dec	72.1	8.1	43.5	61.4	105.6	118.0	100.5	45.4	10.0
2002 March	71.3	7.7	42.9	61.3	105.1	116.4	98.4	45.8	9.9
June	70.1	8.1	42.9	60.4	101.9	114.8	97.1	45.5	10.2
Sept	71.8	7.7	41.2	57.5	102.1	119.4	103.5	47.6	10.2
Dec	75.4	8.0	44.1	62.1	108.9	125.1	107.6	49.4	10.7
2003 March	73.5	7.8	42.8	60.8	107.2	121.8	104.5	48.6	10.3
June	72.8	8.3	43.3	60.3	106.1	120.6	103.5	48.0	10.8
Sept	72.5	7.9	40.5	56.8	104.2	120.2	106.4	49.3	10.5
Dec	76.0	7.8	42.5	61.4	110.9	126.8	109.7	50.5	11.2
2004 March ^P	76.2	7.8	43.4	63.1	111.5	126.3	109.1	51.1	11.4
June ^P	73.3	7.7	42.1	60.1	105.8	122.1	105.3	49.7	11.5
Sept ^P	73.7	7.1	39.2	56.8	105.0	123.6	109.9	50.6	11.1
Dec ^P	77.5	7.4	42.3	61.4	112.6	130.5	113.1	52.5	11.3
2005 March ^P	75.2	7.6	41.4	60.1	108.9	124.7	110.5	51.7	11.4
(c) percentage terminated by abortion									
1991	19.4	51.1	39.9	34.5	22.2	13.4	13.7	22.0	41.6
1996	20.8	49.2	40.0	36.2	25.7	15.6	14.1	21.2	37.6
1999	22.6	52.6	43.0	38.6	28.5	17.5	14.7	21.2	37.0
2000	22.7	54.0	44.2	39.3	29.2	17.7	14.5	20.5	35.4
2001	23.2	55.8	45.7	40.4	29.7	18.4	14.6	20.4	34.6
2002	22.5	55.6	45.3	39.9	28.8	17.9	13.9	19.5	34.6
2003	22.5	57.4	45.7	40.2	29.0	17.9	13.6	18.9	34.7
2004 ^P	22.4	57.1	45.6	40.1	28.9	18.2	13.2	18.4	33.0
2001 March	23.4	54.4	44.9	40.2	29.8	18.6	14.8	20.7	34.9
June	23.8	58.8	47.0	41.1	30.3	18.6	15.3	21.0	36.0
Sept	22.5	55.0	45.7	40.1	29.2	18.1	13.8	19.9	33.5
Dec	22.9	54.9	45.2	40.0	29.5	18.1	14.4	20.2	34.1
2002 March	22.9	54.3	44.9	40.2	29.4	18.1	14.1	19.8	35.1
June	22.9	55.5	45.0	39.4	28.9	18.4	14.5	20.1	34.8
Sept	21.6	56.1	45.0	39.4	27.8	17.3	13.2	18.7	34.2
Dec	22.6	56.4	46.3	40.7	29.0	17.8	13.9	19.4	34.5
2003 March	22.8	58.9	46.1	40.2	29.5	17.9	13.8	19.7	34.5
June	23.1	58.3	46.2	40.9	29.3	18.4	14.2	19.2	36.1
Sept	21.6	56.9	45.3	39.5	28.0	17.1	13.0	18.0	33.8
Dec	22.5	55.7	45.0	40.3	29.0	18.1	13.5	18.5	34.5
2004 March ^P	22.7	58.2	45.7	40.2	29.4	18.5	13.4	18.2	32.9
June ^P	23.0	57.2	46.4	40.8	29.2	18.6	13.7	19.2	33.5
Sept ^P	21.9	56.8	45.8	40.1	28.4	17.9	12.8	17.8	33.0
Dec ^P	22.1	56.1	44.5	39.3	28.7	17.8	13.1	18.3	32.6
2005 March ^P	22.4	57.3	47.2	41.0	29.1	18.0	13.1	17.9	32.5

Notes: Conceptions are estimates derived from birth registrations and abortion notifications. Rates for women of all ages, under 16, under 18, under 20 and 40 and over are based on the population of women aged 15-44, 13-15, 15-17, 15-19 and 40-44 respectively.

For a quarterly analysis of conceptions under 18 for local authority areas see the National Statistics website, www.statistics.gov.uk

¹ Rates for provisional annual 2004 conceptions are based on mid-year population estimates published on 20 December 2005.

Rates for provisional 2005 conceptions are based on the 2004-based population projections for 2005.

^P Provisional

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 ages			All women (residents)							Gestation weeks (percentages)			
	All ¹ women	Residents ¹	Non- ¹ residents	Age group							Under 9	9-12	13-19	20 and over
				Under 16	16-19	20-24	25-29	30-34	35-44	45 and over				
Numbers (thousands)				Percentages										
1976	129.7	101.9	27.8	3.4	24.0	23.6	19.3	14.6	14.7	0.5	24.8	55.8	15.0	1.1
1981	162.5	128.6	33.9	3.5	31.4	34.3	21.9	18.7	17.6	0.6	31.0	53.4	13.5	1.3
1986	172.3	147.6	24.7	3.9	33.8	45.3	28.7	18.0	17.5	0.4	33.4	53.8	11.5	1.4
1991	179.5	167.4	12.1	3.2	31.1	52.7	38.6	23.4	17.9	0.4	35.2	52.9	10.6	1.2
1996	177.5	167.9	9.6	3.6	28.8	46.4	39.3	28.2	21.1	0.4	40.0	48.7	10.1	1.3
1997	179.7	170.1	9.6	3.4	29.9	45.0	40.2	28.9	22.3	0.5	41.2	47.9	9.6	1.2
1998	187.4	177.9	9.5	3.8	33.2	45.8	40.4	30.4	23.8	0.5	41.4	47.6	9.7	1.3
1999	183.2	173.7	9.5	3.6	32.8	45.0	38.5	29.1	24.1	0.5	42.5	46.5	9.5	1.4
2000	185.4	175.5	9.8	3.7	33.2	47.1	37.9	28.7	24.4	0.5	43.3	45.0	10.3	1.5
2001	186.3	176.4	9.9	3.7	33.4	48.3	36.5	28.8	25.2	0.5	42.8	45.0	10.6	1.6
2002	185.4	175.9	9.5	3.7	33.0	48.4	35.8	28.5	26.0	0.5	42.2	45.2	11.0	1.6
2003	190.7	181.6	9.1	4.0	34.2	51.1	36.0	28.7	26.9	0.5	43.6	43.7	11.1	1.6
2004	194.2	185.4	8.8	3.8	35.4	52.7	37.8	28.1	27.2	0.5	46.2	41.5	10.8	1.6
2000 March	49.5	46.9	2.6	1.0	9.1	12.5	10.2	7.5	6.4	0.1	38.9	47.9	11.6	1.6
2000 June	45.8	43.4	2.5	0.9	8.2	11.8	9.2	7.1	6.0	0.1	42.2	46.0	10.3	1.4
2000 Sept	46.1	43.6	2.5	1.0	8.1	11.5	9.5	7.3	6.1	0.1	44.5	44.0	10.1	1.4
2000 Dec	43.9	41.7	2.2	0.9	7.8	11.2	8.9	6.8	5.9	0.1	47.8	41.7	9.0	1.4
2001 March	47.8	45.3	2.5	0.9	8.7	12.4	9.4	7.3	6.4	0.1	40.5	46.3	11.6	1.5
2001 June	46.6	44.1	2.5	0.9	8.3	12.1	9.1	7.2	6.3	0.1	42.0	45.8	10.6	1.6
2001 Sept	46.2	43.8	2.4	1.0	8.2	11.8	9.1	7.3	6.3	0.1	43.1	44.7	10.6	1.5
2001 Dec	45.6	43.3	2.4	0.9	8.2	11.9	8.9	7.0	6.2	0.1	45.7	43.1	9.7	1.6
2002 March	47.6	45.2	2.5	0.9	8.6	12.6	9.2	7.3	6.5	0.1	38.9	47.4	12.0	1.6
2002 June	45.9	43.5	2.5	0.9	8.2	12.0	8.9	7.0	6.4	0.1	40.0	46.4	11.8	1.8
2002 Sept	46.5	44.1	2.4	1.0	8.2	11.9	8.9	7.3	6.6	0.1	42.9	45.1	10.4	1.6
2002 Dec	45.3	43.2	2.1	0.9	8.0	11.9	8.8	6.9	6.5	0.1	47.0	41.8	9.7	1.5
2003 March	50.0	47.6	2.4	1.0	9.1	13.4	9.4	7.5	7.0	0.1	40.9	45.3	12.2	1.6
2003 June	47.7	45.4	2.3	1.0	8.5	12.7	9.1	7.2	6.7	0.1	42.5	44.4	11.4	1.6
2003 Sept	47.7	44.8	2.3	1.0	8.3	12.5	8.9	7.2	6.7	0.1	43.3	43.9	11.2	1.5
2003 Dec	46.0	43.9	2.1	0.9	8.3	12.5	8.6	6.9	6.5	0.1	47.7	41.0	9.6	1.7
2004 March	51.1	48.6	2.4	1.0	9.3	13.9	9.8	7.5	7.0	0.1	41.7	44.5	12.0	1.7
2004 June	48.7	46.4	2.3	0.9	8.8	13.2	9.5	6.9	6.8	0.1	43.7	43.3	11.2	1.8
2004 Sept	48.3	46.2	2.1	0.9	8.9	13.0	9.4	7.0	7.0	0.1	47.8	40.5	10.3	1.4
2004 Dec	46.1	44.2	1.9	0.9	8.4	12.6	9.1	6.6	6.5	0.1	52.0	37.2	9.5	1.3
2005 March ^p	50.0	47.9	2.1	0.9	9.1	13.9	9.7	7.2	7.0	0.1	47.2	40.4	11.0	1.4
2005 June ^p	50.1	48.0	2.1	0.9	9.1	13.8	9.8	7.1	6.9	0.1	53.9	35.5	9.2	1.4
2005 Sept ^p	46.9	45.0	1.9	1.0	8.5	12.6	9.3	6.9	6.6	0.1	56.6	33.6	8.4	1.3
Rates (per thousand women residents)														
ASR ³ (women 15-44)				Crude rate ² (women 15-44)										
1976	10.2	10.5	:	2.9	16.9	14.2	10.4	9.2	5.3	0.3				
1981	11.9	12.4	:	3.0	19.4	18.6	13.1	10.1	5.9	0.4				
1986	13.0	13.5	:	3.7	22.0	21.9	15.5	10.8	5.1	0.3				
1991	15.0	15.2	:	3.8	24.0	27.1	18.5	12.6	5.1	0.3				
1996	16.0	15.7	:	3.9	24.2	28.4	19.9	13.6	6.0	0.2				
1997	16.3	15.9	:	3.7	24.4	28.8	20.7	13.8	6.2	0.3				
1998	17.1	16.6	:	4.0	26.8	30.2	21.2	14.6	6.5	0.3				
1999	16.8	16.2	:	3.8	26.3	29.7	20.8	14.1	6.4	0.3				
2000	17.0	16.3	:	3.9	26.9	30.7	20.9	14.1	6.3	0.3				
2001	17.0	16.2	:	3.7	26.6	30.6	20.9	14.2	6.4	0.3				
2002	17.0	16.1	:	3.7	25.8	30.1	21.4	14.2	6.5	0.3				
2003	17.5	16.6	:	3.9	26.1	31.2	22.1	14.6	6.6	0.3				
2004 ⁴	17.8	16.9	:	3.7	26.5	31.9	23.3	14.6	6.6	0.3				
2000 March	18.2	17.4	:	4.2	29.3	32.8	22.4	14.7	6.7	0.3				
2000 June	16.8	16.1	:	3.7	26.4	30.7	20.4	13.9	6.3	0.3				
2000 Sept	16.9	16.1	:	4.0	26.3	29.9	21.1	14.2	6.3	0.3				
2000 Dec	16.1	15.4	:	3.6	25.2	29.0	20.0	13.4	6.0	0.2				
2001 March	17.5	16.7	:	3.6	27.9	31.8	21.2	14.3	6.6	0.3				
2001 June	17.0	16.2	:	3.8	26.6	30.8	20.9	14.1	6.4	0.3				
2001 Sept	16.9	16.1	:	3.9	25.9	29.9	20.9	14.4	6.4	0.3				
2001 Dec	16.7	15.9	:	3.6	26.0	30.0	20.8	13.8	6.3	0.2				
2002 March	17.4	16.6	:	3.7	26.9	31.6	21.7	14.4	6.6	0.2				
2002 June	16.7	15.9	:	3.7	25.6	29.9	21.1	13.9	6.4	0.3				
2002 Sept	16.9	16.1	:	3.8	25.1	29.2	21.9	14.8	6.5	0.2				
2002 Dec	16.5	15.7	:	3.7	24.7	29.2	21.4	13.9	6.4	0.3				
2003 March	18.3	17.4	:	4.0	28.0	33.0	22.9	15.1	6.9	0.3				
2003 June	17.4	16.6	:	4.0	26.1	31.1	22.3	14.5	6.6	0.3				
2003 Sept	17.2	16.4	:	4.0	25.3	30.6	21.8	14.6	6.6	0.3				
2003 Dec	16.8	16.0	:	3.7	25.2	30.4	21.1	14.2	6.4	0.3				
2004 March	18.7	17.8	:	3.9	28.2	33.7	24.1	15.4	6.9	0.3				
2004 June	17.8	17.0	:	3.7	26.6	32.2	23.3	14.3	6.7	0.3				
2004 Sept	17.8	16.9	:	3.7	26.6	31.4	22.9	14.8	6.8	0.3				
2004 Dec	17.0	16.2	:	3.5	25.0	30.4	22.3	14.2	6.3	0.3				
2005 ⁴ March ^p	18.3	17.5	:	3.7	27.0	33.4	23.8	15.2	6.8	0.3				
2005 ⁴ June ^p	18.4	17.5	:	3.8	27.1	33.2	24.0	15.3	6.7	0.3				
2005 ⁴ Sept ^p	17.2	16.4	:	3.8	25.1	30.3	22.5	14.9	6.4	0.3				

Notes: Rates for Under 16 and 45 and over are based on female populations aged 13-15 and 45-49 respectively.

1 Includes cases with not stated age and/or gestation week.

2 Includes incomplete forms that have been returned to practitioners.

3 Rates for all women residents age-standardised to the European population for ages 15-44.

4 Based on the 2004-based population projections for 2005.

p Provisional

Table 6.2 Deaths: subnational

Government Office Regions of England ¹										Rates
Year and quarter	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East	London	South East	South West	
Total deaths (deaths per 1,000 population of all ages)										
1996	11.7	11.7	11.2	10.7	10.7	10.3	9.4	10.7	11.7	
1997	11.6	11.6	11.1	10.5	10.6	10.2	9.0	10.6	11.7	
1998	11.9	11.7	11.2	10.8	10.6	10.2	8.8	10.4	11.4	
1999	11.6	11.5	10.9	10.7	10.7	10.3	8.7	10.5	11.6	
2000	10.8	10.7	10.3	10.0	10.3	9.9	8.2	9.8	11.3	
2001	11.1	11.0	10.4	10.1	10.2	9.9	7.9	9.9	11.0	
2002	11.2	11.0	10.5	10.2	10.2	10.0	7.8	9.9	11.1	
2003	11.3	11.0	10.5	10.3	10.4	9.9	7.8	9.9	11.2	
2004 ²	10.9	10.5	10.1	9.7	9.8	9.5	7.2	9.4	10.4	
2005 ^{2P}	10.8	10.4	10.0	9.8	9.9	9.6	7.1	9.5	10.5	
2004 ² March	11.8	11.6	11.2	10.7	10.8	10.5	8.0	10.4	11.6	
June	10.6	10.0	9.6	9.3	9.5	9.2	7.0	9.1	9.9	
Sept	9.8	9.7	9.3	9.0	9.0	8.8	6.6	8.7	9.5	
Dec	11.2	10.6	10.3	9.9	10.1	9.6	7.4	9.6	10.7	
2005 ² March ^P	12.0	12.0	11.5	11.2	11.6	11.0	8.3	10.9	12.1	
June ^P	10.7	10.2	9.8	9.6	9.7	9.4	7.0	9.4	10.5	
Sept ^P	9.7	9.4	9.0	8.7	8.8	8.5	6.4	8.5	9.4	
Dec ^P	10.6	10.2	9.8	9.7	9.7	9.4	6.9	9.2	10.3	
Infant mortality (deaths under 1 year per 1,000 live births)										
1996	6.2	6.3	6.5	6.3	6.8	5.3	6.3	5.3	5.5	
1997	5.8	6.7	6.5	5.7	7.0	4.8	5.8	5.0	5.8	
1998	5.0	6.3	6.9	5.6	6.5	5.0	6.0	4.4	4.8	
1999	5.6	6.5	6.3	6.0	6.9	4.6	6.0	4.8	4.7	
2000	6.5	6.2	7.3	5.4	6.8	4.4	5.4	4.4	4.7	
2001	5.4	5.8	5.5	4.9	6.4	4.5	6.1	4.2	5.4	
2002	4.8	5.4	6.1	5.6	6.6	4.3	5.5	4.5	4.3	
2003	4.9	5.9	5.7	5.9	7.4	4.5	5.4	4.2	4.1	
2004	4.6	5.4	5.8	4.9	6.3	4.2	5.2	3.9	4.5	
2005 ^P	4.5	5.8	6.1	4.7	6.4	4.0	5.1	3.9	4.5	
2004 March	5.9	6.1	6.1	4.8	6.9	4.9	5.7	4.5	5.0	
June	4.6	4.9	5.8	4.8	5.6	4.0	4.6	3.3	4.8	
Sept	3.1	5.3	4.9	4.3	7.0	4.3	5.0	3.5	4.2	
Dec	4.8	5.3	6.3	5.6	5.6	3.5	5.5	4.5	4.2	
2005 March ^P	4.3	5.6	6.5	6.1	6.7	4.8	5.1	4.2	4.9	
June ^P	4.5	6.4	6.8	5.5	6.1	3.8	5.8	3.5	3.7	
Sept ^P	5.2	5.0	5.5	3.6	7.1	3.8	4.9	3.7	3.9	
Dec ^P	3.8	6.3	5.7	3.6	5.8	3.7	4.5	4.3	5.7	
Neonatal mortality (deaths under 4 weeks per 1,000 live births)										
1996	4.1	4.0	4.2	4.2	4.9	3.5	4.4	3.5	3.8	
1997	3.7	4.3	4.4	3.7	5.0	3.3	3.7	3.4	3.9	
1998	3.1	4.1	4.5	3.7	4.8	3.4	4.1	2.9	3.3	
1999	4.1	4.4	4.1	4.3	4.8	3.0	4.1	3.2	3.2	
2000	4.4	4.3	5.0	4.1	5.0	3.0	3.7	3.1	3.0	
2001	3.5	3.8	3.2	3.4	4.4	2.9	4.1	2.9	3.7	
2002	3.2	3.6	4.0	4.0	4.8	2.9	3.6	2.9	3.1	
2003	3.2	4.1	4.0	4.2	5.1	3.0	3.7	2.8	2.9	
2004	2.8	3.6	3.8	3.5	4.7	2.9	3.6	2.8	3.2	
2005 ^P	2.8	3.8	4.0	3.4	4.9	2.6	3.4	2.8	3.2	
2004 March	3.7	3.5	4.0	3.5	5.3	3.4	3.9	2.7	3.8	
June	3.2	3.4	4.0	3.6	4.2	3.1	3.1	2.5	2.9	
Sept	1.4	3.8	3.2	3.3	5.5	3.0	3.5	2.6	3.0	
Dec	2.8	3.5	4.1	3.6	3.9	2.1	3.6	3.2	3.1	
2005 March ^P	3.2	3.8	4.5	4.5	5.0	3.0	3.0	2.9	3.6	
June ^P	3.0	3.6	4.5	3.8	4.7	2.6	4.0	2.2	2.6	
Sept ^P	2.8	3.0	3.8	3.0	5.7	2.7	3.6	2.8	2.8	
Dec ^P	2.4	4.7	3.4	2.4	4.2	2.1	2.9	3.2	3.8	
Perinatal mortality (stillbirths and deaths under 1 week per 1,000 total births)³										
1996	9.2	8.6	8.3	8.7	10.2	7.5	9.6	7.8	7.5	
1997	8.0	8.9	8.3	7.7	9.6	7.3	9.0	7.3	8.7	
1998	8.2	8.7	9.2	8.0	9.3	7.4	9.0	6.8	7.3	
1999	8.2	8.7	8.3	7.8	9.9	7.0	9.0	6.9	7.8	
2000	8.5	8.6	9.6	7.8	9.6	7.1	9.0	6.6	6.6	
2001	7.8	8.7	7.5	7.9	9.1	7.1	8.9	6.9	7.2	
2002	8.1	8.5	9.0	8.5	10.0	7.5	9.3	6.9	6.8	
2003	7.8	9.0	9.0	9.5	10.2	7.3	9.5	7.0	7.0	
2004	7.6	8.2	8.8	8.1	9.4	7.5	8.9	7.0	7.1	
2005 ^P	..	..	..	..	..	..	..	..	..
2004 March	9.6	8.2	8.9	8.4	10.1	8.0	9.2	7.2	6.6	
June	8.8	8.3	9.1	8.5	8.9	7.4	8.5	6.8	7.5	
Sept	6.4	8.1	9.3	8.2	10.1	7.6	9.2	7.0	7.9	
Dec	5.7	8.4	7.8	7.2	8.3	7.0	8.6	6.9	6.6	
2005 March ^P	6.5	8.0	9.5	8.8	8.8	6.7	7.6	6.2	6.7	
June ^P	8.6	7.2	9.7	7.6	10.0	6.7	7.8	6.4	6.5	
Sept ^P	7.0	6.9	7.9	7.1	10.8	5.9	8.4	6.8	5.4	
Dec ^P	..	..	..	..	..	..	..	..	..

Note: Figures represent the numbers of deaths occurring in each year with the exception of provisional figures for 2005 which relate to registrations.

Some stillbirths in 2004 are excluded from these and previously published figures, as the relevant registration details were not sent to ONS before the statistics were compiled. Revised figures for 2004 will be published as soon as possible to include the additional stillbirth registrations.

¹ The regions presented in this table have changed from the Regional Offices of the Department of Health to the Government Office Regions. See 'In brief' *Health Statistics Quarterly 15* for details.

² Rates for 2004 and 2005 have been calculated using the revised mid-2004 population estimates published on 20 December 2005.

³ In October 1992 the legal definition of a stillbirth was changed, from a baby born dead after 28 completed weeks of gestation or more, to one born dead after 24 completed weeks of gestation or more.

P Provisional.

Table 6.3 Deaths: selected causes (International Classification)¹ and sex

England and Wales Number (thousands) and rate for all deaths and age-standardised rates³ per million population for selected causes

Year and quarter	All deaths		All causes (age - standardised per million population ³) A00-R99 V01-Y89	Malignant neoplasms									
	Number (thousands)	Crude rate per 100,000 population		Oesophagus	Stomach	Colon	Rectosigmoid junction, rectum, and anus	Trachea, bronchus and lung	Melanoma of skin	Other malignant neoplasms of skin	Breast	Cervix uteri	Ovary
				(C15)	(C16)	(C18)	(C19-C21)	(C33-C34)	(C43)	(C44)	(C50)	(C53)	(C56)
Males													
1971	288.4	1,207	13,466	76	317	187	144	1,066	10	12	4	:	:
1981	289.0	1,196	12,189	90	251	181	135	1,028	17	9	3	:	:
1991	277.6	1,125	10,291	117	185	194	117	842	23	10	3	:	:
1993	279.6	1,127	10,101	123	163	189	106	769	26	8	3	:	:
1994	267.6	1,077	9,577	129	163	183	101	746	24	9	3	:	:
1995	274.4	1,100	9,659	126	149	182	100	714	26	9	3	:	:
1996	268.7	1,074	9,353	126	146	174	99	683	25	8	2	:	:
1997	264.9	1,055	9,106	126	137	175	93	651	25	7	2	:	:
1998	264.7	1,064	8,981	129	132	169	95	643	26	8	3	:	:
1999	264.3	1,044	8,862	127	127	161	90	611	27	7	2	:	:
2000	255.5	1,005	8,437	128	118	158	89	592	28	7	2	:	:
2001	252.4	987	8,188	129	111	155	89	570	26	7	3	:	:
2002	253.1	985	8,074	131	109	150	90	559	27	8	3	:	:
2003	253.9	982	7,985	134	101	145	90	538	28	8	2	:	:
2004 ²	244.1	939	7,535	129	95	142	91	520	30	9	2	:	:
2005 ^{4P}	243.9	931	7,362	132	92	137	91	511	28	8	2	:	:
2004 ² March	66.2	1,024	8,194	130	95	145	86	518	27	10	3	:	:
June	58.8	909	7,311	122	98	142	90	511	30	8	2	:	:
Sept	56.8	869	6,989	128	93	142	98	513	30	8	2	:	:
Dec	62.4	955	7,651	136	93	141	91	539	31	11	1	:	:
2005 ⁴ March ^P	67.6	1,047	8,228	134	93	140	90	525	29	7	3	:	:
June ^P	60.3	923	7,300	134	95	131	95	494	27	7	2	:	:
Sept ^P	55.4	840	6,673	132	95	134	89	496	28	8	3	:	:
Dec ^P	60.6	917	7,264	127	86	144	91	529	28	9	2	:	:
Females													
1971	278.9	1,104	8,189	40	149	176	79	183	14	6	379	83	126
1981	288.9	1,134	7,425	42	111	157	74	252	16	5	405	69	121
1991	292.5	1,122	6,410	50	74	146	61	300	18	4	401	54	118
1993	299.2	1,142	6,427	52	66	138	53	296	22	3	378	47	115
1994	285.6	1,088	6,115	51	67	136	52	296	22	4	371	42	114
1995	295.2	1,121	6,206	52	62	131	49	294	20	4	361	42	116
1996	291.5	1,105	6,068	52	55	126	49	293	20	3	344	41	121
1997	290.4	1,098	6,001	51	57	122	48	285	20	3	337	37	115
1998	290.3	1,108	5,945	49	54	117	47	291	21	3	328	35	116
1999	291.8	1,097	5,929	52	51	115	46	289	20	3	319	33	111
2000	280.1	1,049	5,655	51	48	107	45	285	21	3	311	33	109
2001	277.9	1,038	5,543	48	46	103	45	283	20	3	308	31	112
2002	280.4	1,044	5,526	51	44	104	44	284	19	3	302	29	112
2003	284.4	1,055	5,578	50	42	98	46	285	20	3	293	27	108
2004 ²	268.4	992	5,259	48	42	96	47	284	19	3	285	27	102
2005 ^{4P}	269.1	989	5,189	48	39	96	45	289	20	3	282	26	102
2004 ² March	74.4	1,105	5,795	51	38	97	46	292	21	3	287	28	105
June	63.4	942	5,022	46	41	94	47	265	18	4	284	25	97
Sept	61.8	908	4,863	50	43	95	45	281	19	3	276	27	102
Dec	68.9	1,013	5,359	46	44	100	49	299	20	2	293	28	101
2005 ⁴ March ^P	77.7	1,158	5,950	49	41	92	47	291	20	4	290	27	101
June ^P	65.7	969	5,110	46	36	96	46	291	22	4	280	27	105
Sept ^P	60.0	875	4,673	50	40	102	43	282	20	3	282	26	98
Dec ^P	65.7	958	5,039	46	38	94	45	293	20	3	276	24	104

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 to 2004. Provisional figures for 2005 relate to registrations. Between 1 January 1984 and 31 December 1992, ONS applied its own interpretation of the International Classification of Diseases Section 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 ONS Rule 3 allowed 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 between 1 January 1993 and 31 December 2000, such certificates were coded to the terminal event. National Statistics also introduced automated coding of cause of death in 1993, which may also affect comparisons of deaths by cause from 1993. Further details can 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. From 1 January 2001, under ICD-10, Rule 3 has again been changed – for details see the article in *Health Statistics Quarterly* no. 13. This has resulted in a fall in the death rates from respiratory diseases, notably pneumonia, and consequently slight rises in the rates for other causes eg. strokes. For details of the major changes between ICD-9 and ICD-10, see the articles in *Health Statistics Quarterly* 08, 13 and 14. The rates in this table by cause of death are based on final underlying cause. For further details see the Explanatory Notes in the 'Report: Death registrations in England and Wales, 2004: causes' in *HSQ26*.

1 The Ninth Revision of the International Classification of Diseases, 1975, came into operation in England and Wales on 1 January 1979. The Tenth Revision of the International Classification of Diseases, 1992, came into operation in England and Wales on 1 January 2001. The cause descriptions and codes relate to ICD-10. For changes to this table see 'In Brief', *Health Statistics Quarterly* 14.
 2 Rates for 2004 have been calculated using the revised mid-2004 population estimates published on 20 December 2005.
 3 Directly age-standardised to the European Standard Population. See Notes to Tables.
 4 Based on the 2004-based population projections for 2005.
 P Provisional

Table 6.3
continued **Deaths: selected causes (International Classification)¹ and sex**

England and Wales													Age-standardised rates ³ per million population for selected causes	
Malignant neoplasms														
Prostate	Bladder	Leukaemia	Diabetes mellitus	Ischaemic heart disease	Cerebrovascular diseases	Pneumonia	Bronchitis, emphysema and other chronic obstructive pulmonary disease	Asthma	Gastric and duodenal ulcer	Diseases of the liver	Land transport accidents	Intentional self harm and events of undetermined intent with inquest verdict 'Open'	Year and quarter	
(C61)	(C67)	(C91-C95)	(E10-E14)	(I20-I25)	(I60-I69)	(J12-J18)	(J40-J44)	(J45-J46)	(K25-K27)	(K70-K76)	(V01-V89)	(X60-X84, Y10-Y34)		
													Males	
198	124	74	82	3,801	1,541	920	944	21	107	41	209	124	1971	
214	121	74	82	3,664	1,141	1,053	683	28	90	58	119	151	1981	
304	121	77	131	2,984	940	391	606	31	73	76	125	160	1991	
298	114	70	101	2,844	801	769	570	25	67	77	96	153	1993	
297	109	69	98	2,609	762	689	498	23	67	84	93	152	1994	
298	112	71	101	2,549	761	765	528	20	64	92	89	150	1995	
289	105	66	97	2,427	751	738	484	19	64	97	94	141	1996	
279	101	67	95	2,276	722	753	478	20	61	103	94	144	1997	
277	99	67	94	2,215	706	720	463	18	60	115	86	152	1998	
272	93	67	94	2,095	673	770	474	18	64	119	86	151	1999	
260	92	67	88	1,959	622	735	416	17	59	119	86	141	2000	
274	93	70	94	1,872	690	388	403	16	55	139	86	134	2001	
271	90	68	91	1,782	690	387	396	15	56	144	83	131	2002	
272	87	71	91	1,700	661	407	411	14	53	157	84	129	2003	
266	84	67	82	1,562	594	359	363	15	50	151	77	125	2004 ²	
255	80	67	78	1,463	551	352	366	12	46	155	85	128	2005 ^{4P}	
279	86	67	91	1,708	692	465	463	15	54	149	69	137	2004 ² March	
258	82	63	80	1,538	571	332	338	13	49	144	90	133	June	
260	88	70	74	1,418	519	278	293	17	44	145	79	127	Sept	
267	81	66	85	1,584	594	361	360	14	52	166	71	103	Dec	
264	85	67	91	1,670	643	500	490	14	55	164	85	121	2005 ⁴ March ^P	
251	80	66	75	1,475	542	335	369	12	47	154	90	133	June ^P	
250	77	64	69	1,292	483	248	272	9	41	144	82	126	Sept ^P	
255	79	69	78	1,418	538	327	338	13	42	159	83	132	Dec ^P	
													Females	
:	32	47	89	1,668	1,352	624	193	25	44	31	82	84	1971	
:	35	47	66	1,601	1,012	740	155	30	57	43	41	81	1981	
:	34	44	95	1,407	812	325	211	30	46	49	45	51	1991	
:	34	43	74	1,347	724	585	224	27	46	49	35	48	1993	
:	35	42	69	1,237	689	512	204	24	44	50	34	44	1994	
:	33	41	73	1,194	690	568	229	24	42	55	30	47	1995	
:	32	41	67	1,140	680	548	222	21	43	57	30	45	1996	
:	31	43	66	1,074	651	574	227	23	42	61	29	45	1997	
:	32	41	65	1,055	645	546	226	22	41	64	28	43	1998	
:	30	45	65	986	629	591	241	22	39	67	28	45	1999	
:	31	39	62	907	577	546	216	20	41	68	24	45	2000	
:	29	41	62	878	620	307	220	19	39	77	23	40	2001	
:	30	43	65	844	617	316	224	20	37	79	24	41	2002	
:	30	39	66	811	606	337	244	20	36	81	24	41	2003	
:	28	40	60	738	550	297	214	18	35	83	21	41	2004 ²	
:	28	39	56	686	518	297	224	17	32	81	23	43	2005 ^{4P}	
:	27	43	69	806	626	399	283	23	37	84	25	46	2004 ² March	
:	30	39	54	720	530	254	184	16	33	80	21	42	June	
:	28	39	55	674	496	227	167	14	32	80	19	42	Sept	
:	28	39	63	750	550	307	221	18	37	86	20	36	Dec	
:	30	43	65	807	603	455	322	24	36	86	22	41	2005 ⁴ March ^P	
:	29	41	54	689	504	269	211	16	32	76	25	44	June ^P	
:	27	34	50	606	464	200	158	12	29	75	22	41	Sept ^P	
:	25	39	57	643	502	268	205	15	30	85	22	44	Dec ^P	

See notes opposite.

Report:

Death registrations in England and Wales: 2005, causes

This report presents numbers of deaths registered in England and Wales in 2005 by age, sex and selected underlying causes of death. It also compares mortality rates in 2005 with those for previous years. For the first time in this report, causes of death have been ranked to provide a summary of the ten leading causes of death for both males and females.

DEATHS BY SEX AND AGE OF DECEASED

- There were 512,993 deaths registered in 2005, compared with 514,250 registered in 2004, a decrease of 0.2 per cent. This is the

lowest annual number of death registrations for 50 years, when in 1954 the number of deaths registered was 501,896.

- The total number of deaths in 2005 comprised 243,870 male deaths and 269,123 female deaths. The number of male deaths decreased by 0.5 per cent on the 2004 figure, while female deaths increased by 0.03 per cent.
- In 2005, there were 3,248 infant deaths registered in England and Wales, giving a rate of 5.0 per 1,000 live births. This is the lowest rate ever recorded in England and Wales.

Table 1 Death rates (registrations): by sex and age, 1995, 2004 and 2005

England and Wales

Age group	1995		2004*		2005†		Percentage change 2004–2005		Percentage change 1995–2005	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Age-standardised rate**	9,599	6,169	7,575	5,279	7,361	5,188	-2.9	-1.7	-23.3	-15.9
Rates per 1,000 population										
All ages	10.9	11.1	9.4	9.9	9.3	9.9	-1.3	-0.5	-14.8	-11.2
Under 1††	6.9	5.3	5.5	4.7	5.7	4.3	2.9	-8.0	-17.5	-18.4
1–4	0.3	0.3	0.2	0.2	0.2	0.2	-3.0	-14.4	-15.9	-26.2
5–9	0.2	0.1	0.1	0.1	0.1	0.1	-3.5	-3.3	-36.3	-25.3
10–14	0.2	0.1	0.1	0.1	0.2	0.1	8.8	9.6	-22.9	-20.6
15–19	0.6	0.3	0.5	0.2	0.5	0.2	1.9	-9.1	-18.6	-15.4
20–24	0.9	0.3	0.7	0.3	0.7	0.3	-6.4	-5.5	-22.0	-7.6
25–29	0.9	0.4	0.8	0.4	0.8	0.4	-10.6	-0.4	-19.9	-6.0
30–34	1.1	0.5	1.0	0.5	1.0	0.5	0.7	-4.5	-7.0	-9.7
35–39	1.4	0.8	1.3	0.8	1.3	0.7	-2.7	-6.6	-5.9	-10.8
40–44	2.1	1.3	1.8	1.1	1.8	1.1	0.2	0.3	-11.2	-14.2
45–49	3.1	2.1	2.9	1.9	2.9	1.9	-0.1	-1.9	-8.3	-12.5
50–54	5.3	3.5	4.6	2.9	4.4	3.0	-4.5	1.1	-15.9	-14.6
55–59	9.0	5.5	6.9	4.5	6.8	4.5	-0.4	0.4	-23.7	-18.0
60–64	15.7	9.1	11.8	7.2	11.5	7.0	-2.4	-2.9	-26.6	-22.9
65–69	27.4	15.8	19.2	11.8	18.3	11.6	-5.0	-1.7	-33.1	-26.2
70–74	45.5	26.7	31.9	20.2	30.9	19.4	-3.4	-4.1	-32.2	-27.2
75–79	71.6	42.8	54.9	36.1	52.5	35.4	-4.6	-1.9	-26.7	-17.3
80–84	115.2	73.6	91.5	63.5	88.9	63.1	-2.9	-0.6	-22.8	-14.2
85 and over	200.1	159.9	175.2	154.3	171.6	152.4	-2.1	-1.3	-14.3	-4.7

* Figures vary from previous rates published. For 2004, the population projections used to calculate rates have been replaced with 2004 mid-year estimates. For 1995, the mid-year estimates used in the rates have been revised following the 2001 Census.

† Provisional rates based on 2004-based population projections for 2005 and 2005 live births.

** These rates are standardised to the European Standard Population, expressed per million population; they allow comparisons between populations with different age structures, including between males and females and over time.

†† Deaths per 1,000 live births.

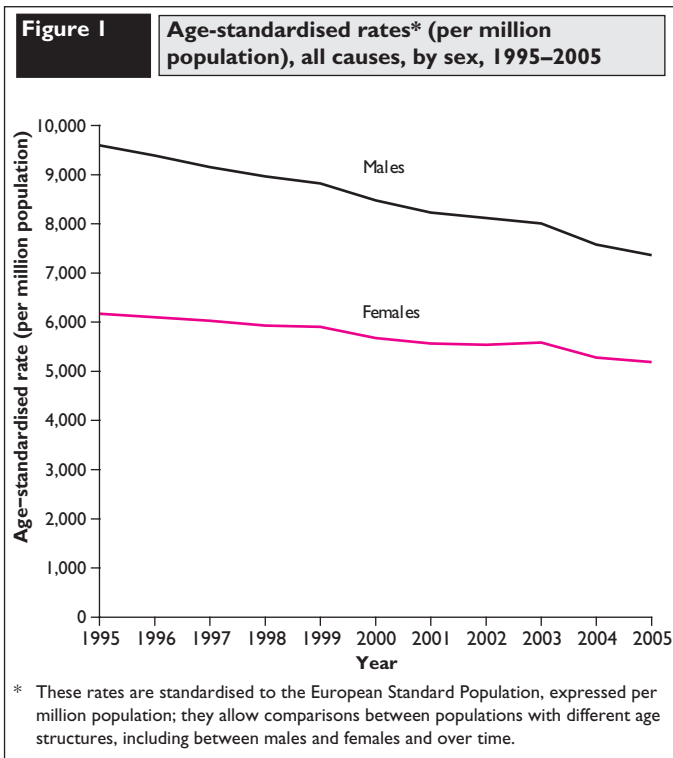


Table 1 shows death rates by age and sex, for the years 1995, 2004 and 2005, together with percentage changes.

- The provisional age-standardised mortality rates (standardised to the European Standard Population) were 7,361 per million population for males and 5,188 per million for females. The rate for males is 2.9 per cent lower than in 2004, while that for females is 1.7 per cent lower. Figure 1 shows the downward trend in age-standardised rates since 1995: rates have decreased by 23.3 per cent for males and 17.3 per cent for females over this period.

- The largest percentage fall in female age-specific rates between 2004 and 2005 were among girls aged 1–4 years, with a fall of 14.4 per cent. The largest decrease for males was among those aged 25–29 (10.6 per cent). The largest percentage increase was among females and males both aged 10–14, with a 9.6 per cent and 8.8 per cent rise respectively. However, all these rates are based on small numbers of deaths, and relatively small changes in such numbers can result in large percentage changes.
- At the older ages, where most deaths occur, between 2004 and 2005 there were sizeable percentage falls in age-specific rates among both men and women aged over 70. The largest decrease for females was for those aged 70–74 with fall of 4.1 per cent, and for males aged 75–79 with a 4.6 per cent decrease.
- Between 1995 and 2005, the greatest decrease for females was in the 65–69 and 70–74 age groups where the rate fell by over a quarter (26.2 and 27.2 per cent respectively). For males the largest decrease in rates was also in the 65–69 and 70–74 age groups but to a greater extent, as the rates fell by a third. In addition the younger age groups also saw proportionally large changes over this period. For example for those aged 5–9 years, the rate fell by over a third (36.3 per cent) for males and a quarter (25.3 per cent) for females.

DEATHS BY UNDERLYING CAUSE

Table 2 presents deaths by age and sex for selected underlying causes of death, grouped according to the International Classification of Diseases, Tenth Revision (ICD-10).

The chapters (broad disease groups) of ICD-10 with the largest numbers of deaths in 2005 were circulatory diseases (accounting for 35.8 per cent of all deaths), which include coronary heart disease and strokes, followed by cancer (26.9 per cent) and respiratory diseases (14.1 per cent), which include pneumonia.

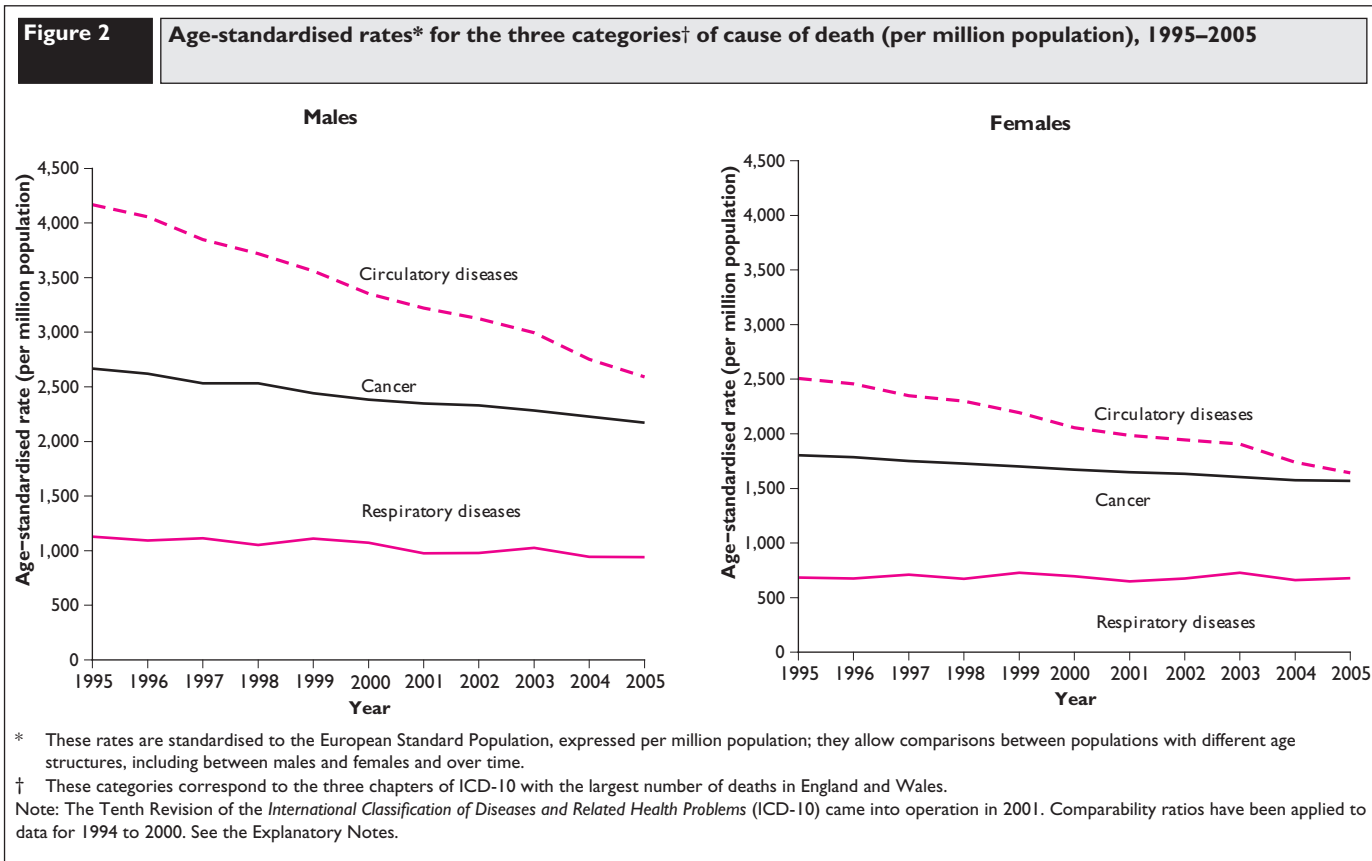


Table 2 Deaths by age, sex and underlying cause, 2005 registrations

England and Wales

Numbers

ICD-10 code	Causes of death*		Age group											
			All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over
A00-R99, V01-Y89	All causes, all ages	M	243,870	1,877	297	438	2,073	3,146	6,362	12,158	27,292	51,019	84,661	54,547
		F	269,123	1,371	222	323	857	1,481	3,805	8,175	17,797	35,913	86,309	112,870
	All causes, ages under 28 days	M	1,273	1,273	-	-	-	-	-	-	-	-	-	-
		F	947	947	-	-	-	-	-	-	-	-	-	-
A00-R99, V01-Y89	All causes, ages 28 days and over	M	242,597	604	297	438	2,073	3,146	6,362	12,158	27,292	51,019	84,661	54,547
		F	268,176	424	222	323	857	1,481	3,805	8,175	17,797	35,913	86,309	112,870
A00-B99	Certain infectious and parasitic diseases	M	2,627	46	31	9	23	61	140	163	230	413	875	636
		F	3,478	23	22	8	26	56	64	104	152	382	1,101	1,540
A00-A09	Intestinal infectious diseases	M	733	3	3	1	-	-	2	6	22	88	320	288
		F	1,473	2	-	-	-	2	2	14	24	105	492	832
A15-A16	Respiratory tuberculosis	M	178	-	-	-	2	6	8	10	29	33	67	23
		F	83	-	-	-	-	4	2	6	4	19	31	17
A17-A19	Other tuberculosis	M	35	-	1	-	-	2	2	2	9	6	10	3
		F	52	-	1	3	3	5	3	1	5	10	16	5
A39	Meningococcal infection	M	48	13	16	1	6	2	2	2	3	2	1	-
		F	38	5	11	-	6	2	2	1	3	3	1	4
A40-A41	Septicaemia	M	1,009	19	8	1	7	9	20	30	82	187	380	266
		F	1,341	9	3	1	8	9	22	37	59	172	453	568
B15-B19	Viral hepatitis	M	127	1	-	-	1	1	19	48	26	19	11	1
		F	76	-	1	-	1	1	3	13	13	23	18	3
B20-B24	Human immunodeficiency virus [HIV] disease	M	150	-	-	-	1	27	59	35	16	11	1	-
		F	56	1	-	-	2	20	17	13	3	-	-	-
B90	Sequelae of tuberculosis	M	21	-	-	-	-	1	-	1	1	2	13	3
		F	30	-	-	-	-	-	-	-	3	4	13	10
C00-D48	Neoplasms	M	71,722	9	45	97	165	296	1,091	3,579	11,091	20,086	24,974	10,289
		F	66,358	5	20	91	141	379	1,576	4,102	9,655	15,238	21,922	13,229
C00-C97	Malignant neoplasms	M	70,220	4	42	85	158	285	1,052	3,525	10,947	19,789	24,379	9,954
		F	64,644	5	20	81	131	367	1,551	4,052	9,527	14,975	21,325	12,610
C00-C14	Malignant neoplasms of lip, oral cavity and pharynx	M	1,118	-	-	1	5	3	43	180	316	288	201	81
		F	590	-	-	1	3	3	15	47	114	128	151	128
C15	Malignant neoplasm of oesophagus	M	4,246	-	-	-	2	6	60	282	932	1,181	1,346	437
		F	2,216	-	-	-	-	2	15	88	259	450	873	529
C16	Malignant neoplasm of stomach	M	3,094	-	-	-	1	7	54	137	386	932	1,151	426
		F	1,834	-	-	-	1	16	36	60	154	384	670	513
C18	Malignant neoplasm of colon	M	4,589	-	-	-	5	13	44	203	617	1,314	1,687	706
		F	4,475	-	-	-	3	15	62	147	495	965	1,630	1,158
C19-C21	Malignant neoplasm of rectosigmoid junction, rectum and anus	M	2,981	-	-	-	1	9	32	162	536	867	967	407
		F	2,062	-	-	-	2	3	34	104	220	473	657	569
C22	Malignant neoplasm of liver and intrahepatic bile ducts	M	1,462	-	1	1	6	11	27	117	255	462	456	126
		F	1,004	-	1	-	5	5	18	47	124	249	357	198
C23-C24	Malignant neoplasm of gallbladder and biliary tract	M	163	-	-	-	-	-	1	9	28	45	65	15
		F	365	-	-	-	-	-	5	18	48	88	136	70
C25	Malignant neoplasm of pancreas	M	3,093	-	-	-	1	5	37	180	594	1,019	949	308
		F	3,386	-	-	-	-	3	30	132	495	868	1,213	645
C32	Malignant neoplasm of larynx	M	525	-	-	-	-	1	6	45	124	156	140	53
		F	136	-	-	-	-	-	2	15	17	33	46	23
C33-C34	Malignant neoplasm of trachea, bronchus and lung	M	16,775	-	-	-	2	11	144	804	2,960	5,249	5,902	1,703
		F	11,895	-	-	-	1	8	99	622	1,891	3,417	4,405	1,452
C43	Malignant melanoma of skin	M	855	-	-	-	5	17	62	114	179	208	192	78
		F	764	-	-	-	6	22	71	83	125	149	191	117

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

**Table 2
continued****Deaths by age, sex and underlying cause, 2005 registrations**

England and Wales

Numbers

ICD-10 code	Causes of death*		Age group												
			All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over	
C44	Other malignant neoplasms of skin	M	266	-	-	-	-	-	-	1	11	17	38	104	95
		F	183	-	-	-	-	-	-	-	3	7	24	44	105
C45	Mesothelioma	M	1,477	-	-	-	1	2	8	54	331	540	445	96	
		F	263	-	-	-	-	-	1	20	47	73	98	24	
C46	Kaposi's sarcoma	M	6	-	-	-	-	2	1	-	3	-	-	-	
		F	4	-	-	-	-	1	1	-	-	-	1	1	
C50	Malignant neoplasm of breast	M	82	-	-	-	-	-	-	5	12	23	27	15	
		F	10,986	-	-	-	2	76	577	1,218	2,102	2,097	2,815	2,099	
C53	Malignant neoplasm of cervix uteri	F	917	-	-	-	2	51	113	128	137	167	205	114	
C54-C55	Malignant neoplasm of other and unspecified parts of uterus	F	1,464	-	-	-	-	2	15	67	253	418	440	269	
C56	Malignant neoplasm of ovary	F	3,859	-	-	-	6	22	78	325	826	1,088	1,059	455	
C61	Malignant neoplasm of prostate	M	9,018	-	-	1	-	-	3	61	549	1,985	3,898	2,521	
C62	Malignant neoplasm of testis	M	67	-	-	-	6	13	14	11	9	4	8	2	
C64	Malignant neoplasm of kidney, except renal pelvis	M	1,842	-	4	2	2	4	34	155	362	580	535	164	
		F	1,090	1	1	3	1	5	18	67	156	279	373	186	
C67	Malignant neoplasm of bladder	M	2,767	-	-	1	-	1	14	56	274	674	1,136	611	
		F	1,426	-	-	1	-	-	9	36	80	271	561	468	
C71	Malignant neoplasm of brain	M	1,770	-	14	32	25	45	126	237	421	504	315	51	
		F	1,196	3	1	28	16	27	82	146	305	285	243	60	
C81	Hodgkin's disease	M	146	-	-	-	8	8	9	10	28	38	35	10	
		F	106	-	-	2	8	10	10	13	13	22	22	6	
C82-C85	Non-Hodgkin's lymphoma	M	2,089	-	3	5	12	32	69	134	352	572	648	262	
		F	1,842	-	1	4	7	16	48	90	239	443	630	364	
C90	Multiple myeloma and malignant plasma cell neoplasms	M	1,124	-	-	-	-	2	19	48	175	325	404	151	
		F	1,060	-	-	-	-	-	4	48	127	272	385	224	
C91-C95	Leukaemia	M	2,183	2	5	20	33	31	76	81	287	602	721	325	
		F	1,708	-	8	16	38	30	52	62	166	344	584	408	
C97	Malignant neoplasms of independent (primary) multiple sites	M	509	-	-	-	-	1	3	23	61	106	222	93	
		F	407	-	-	-	-	1	5	28	66	80	128	99	
D00-D48	In situ and benign neoplasms, and neoplasms of uncertain or unknown behaviour	M	1,502	5	3	12	7	11	39	54	144	297	595	335	
		F	1,714	-	-	10	10	12	25	50	128	263	597	619	
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	M	437	7	4	5	6	14	16	34	39	71	136	105	
		F	653	4	7	7	10	10	15	18	46	92	183	261	
D50-D64	Anaemias	M	177	1	2	1	3	7	6	2	7	20	59	69	
		F	351	2	2	3	3	2	2	9	5	26	91	206	
E00-E90	Endocrine, nutritional and metabolic diseases	M	3,312	9	13	20	39	55	104	205	340	689	1,139	699	
		F	4,103	9	17	17	42	44	85	104	244	575	1,314	1,652	
E10-E14	Diabetes mellitus	M	2,640	-	-	1	9	28	58	134	246	583	993	588	
		F	3,012	-	-	3	7	10	48	56	156	446	1,069	1,217	
F00-F99	Mental and behavioural disorders	M	4,749	-	-	2	110	320	305	213	168	342	1,501	1,788	
		F	9,893	-	1	4	23	62	79	66	95	308	2,627	6,628	
F01,F03	Vascular and unspecified dementia	M	3,548	-	-	-	-	1	-	5	45	284	1,455	1,758	
		F	9,408	-	-	-	-	-	-	2	44	279	2,567	6,516	
F10-F19	Mental and behavioural disorders due to psychoactive substance use	M	1,122	-	-	-	110	317	302	204	119	48	18	4	
		F	279	-	-	2	18	57	72	61	42	16	5	6	

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Table 2 continued Deaths by age, sex and underlying cause, 2005 registrations

England and Wales		Numbers												
ICD-10 code	Causes of death*		Age group											
			All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over
G00-G99	Diseases of the nervous system	M	7,110	40	32	61	137	136	268	367	614	1,298	2,593	1,564
		F	8,092	36	28	51	76	104	165	311	550	1,033	2,745	2,993
G00-G03	Meningitis (excluding meningococcal)	M	110	9	10	4	6	3	7	15	20	17	15	4
		F	79	2	5	1	6	1	6	7	9	12	22	8
G12.2	Motor neuron disease	M	887	-	-	-	-	2	26	57	185	306	252	59
		F	681	-	-	-	-	3	14	29	102	244	221	68
G20	Parkinson's disease	M	2,398	-	-	-	-	-	1	4	37	415	1,238	703
		F	1,767	-	-	-	-	-	-	1	15	214	810	727
G30	Alzheimer's disease	M	1,528	-	-	-	-	-	1	6	35	190	692	604
		F	3,381	-	-	-	-	-	2	6	49	228	1,271	1,825
G35	Multiple sclerosis	M	349	-	-	-	1	3	33	82	98	74	49	9
		F	613	-	-	1	-	6	46	120	181	127	98	34
H00-H59	Diseases of the eye and adnexa	M	5	-	-	-	1	-	-	1	-	-	2	1
		F	9	-	-	-	-	-	-	-	-	1	1	7
H60-H95	Diseases of the ear and mastoid process	M	15	-	1	-	1	-	1	-	2	3	6	1
		F	15	1	-	-	2	2	4	-	-	3	1	2
I00-I99	Diseases of the circulatory system	M	88,071	22	22	22	101	308	1,394	3,673	9,061	18,403	33,484	21,581
		F	95,586	18	11	12	59	158	563	1,380	3,433	10,438	33,447	46,067
I05-I09	Chronic rheumatic heart diseases	M	338	-	1	-	1	4	11	13	41	85	126	56
		F	804	1	-	-	-	3	2	19	48	176	315	240
I10-I15	Hypertensive diseases	M	1,576	-	-	-	-	12	44	90	196	316	516	402
		F	2,165	-	-	-	1	6	11	42	104	239	719	1,043
I20-I25	Ischaemic heart diseases	M	49,205	1	-	-	10	85	749	2,410	6,095	11,515	18,263	10,077
		F	38,969	3	1	-	1	21	155	513	1,650	5,031	14,499	17,095
I21-I22	Acute myocardial infarction	M	20,492	1	-	-	7	40	333	1,040	2,588	5,004	7,614	3,865
		F	15,889	1	-	-	1	13	74	220	769	2,303	6,310	6,198
I26-I51	Other heart diseases	M	9,770	14	15	11	57	112	262	396	840	1,483	3,375	3,205
		F	14,362	10	5	8	23	44	136	221	466	1,259	4,245	7,945
I60-I69	Cerebrovascular diseases	M	19,266	5	6	9	20	59	227	501	1,194	3,097	7,938	6,210
		F	31,366	4	4	3	19	53	178	450	869	2,642	10,619	16,525
I60-I62	Intracranial haemorrhage	M	3,194	-	-	9	17	50	174	336	515	713	971	409
		F	4,254	-	2	3	14	36	153	351	495	781	1,413	1,006
I63	Cerebral infarction	M	2,073	1	-	-	2	5	27	59	161	397	824	597
		F	2,910	-	-	-	3	12	10	35	79	278	1,074	1,419
I64	Stroke, not specified as haemorrhage or infarction	M	9,363	-	-	-	1	3	23	88	423	1,461	4,125	3,239
		F	16,792	-	-	-	-	4	14	55	231	1,215	5,818	9,455
I70	Atherosclerosis	M	249	-	-	-	-	-	2	3	9	35	98	102
		F	483	-	-	-	-	-	-	1	6	29	144	303
I71	Aortic aneurysm and dissection	M	4,881	-	-	1	6	10	31	105	376	1,257	2,170	925
		F	3,272	-	-	-	4	9	12	30	82	495	1,501	1,139
J00-J99	Diseases of the respiratory system	M	32,681	41	34	28	40	86	230	656	2,126	5,605	12,796	11,039
		F	39,704	24	21	23	40	45	144	437	1,477	4,349	12,872	20,272
J10-J11	Influenza	M	18	-	3	1	-	1	1	1	2	2	3	4
		F	24	4	3	2	-	-	-	1	-	2	3	9
J12-J18	Pneumonia	M	12,191	21	17	3	15	37	113	264	536	1,353	4,203	5,629
		F	19,231	9	11	4	14	24	63	151	348	1,041	4,909	12,657
J40-J44	Bronchitis, emphysema and other chronic obstructive pulmonary disease	M	12,864	1	1	1	5	5	28	181	1,058	2,952	5,730	2,902
		F	11,310	-	-	-	-	1	18	142	762	2,399	5,124	2,864

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**Table 2
continued****Deaths by age, sex and underlying cause, 2005 registrations**

England and Wales

Numbers

ICD-10 code	Causes of death*		Age group											
			All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over
J45-J46	Asthma	M	375	1	-	11	8	19	27	43	44	57	84	81
		F	810	-	1	10	13	5	23	40	81	96	239	302
K00-K93	Diseases of the digestive system	M	11,541	17	7	8	26	133	723	1,537	1,947	2,126	3,124	1,893
		F	13,655	13	6	4	26	90	389	837	1,122	1,865	4,431	4,872
K25-K27	Gastric and duodenal ulcer	M	1,537	-	-	1	2	11	30	96	193	318	586	300
		F	1,714	-	-	-	1	5	11	44	91	230	675	657
K40-K46	Hernia	M	341	-	-	-	1	2	3	14	24	61	127	109
		F	488	-	-	-	1	-	3	11	18	66	179	210
K57	Diverticular disease of intestine	M	469	-	-	-	-	2	3	14	33	72	203	142
		F	1,415	-	-	-	-	-	-	14	40	175	600	586
K70-K76	Diseases of the liver	M	4,338	3	2	5	7	89	572	1,178	1,239	764	391	88
		F	2,543	3	2	1	8	60	302	607	616	453	380	111
L00-L99	Diseases of the skin and subcutaneous tissue	M	594	-	-	-	-	2	15	22	48	98	225	184
		F	1,195	-	-	-	1	6	6	24	45	107	383	623
M00-M99	Diseases of the musculoskeletal system and connective tissue	M	1,292	1	2	3	3	10	22	43	94	232	476	406
		F	3,102	1	2	2	6	19	22	53	152	315	1,019	1,511
M05-M06, M08	Rheumatoid arthritis and juvenile arthritis	M	176	-	-	-	-	-	1	7	16	46	78	28
		F	657	-	-	-	-	1	1	8	44	120	273	210
M80-M81	Osteoporosis	M	332	-	-	-	-	-	-	2	2	11	123	194
		F	1,093	-	-	-	-	-	-	1	7	28	309	748
N00-N99	Diseases of the genitourinary system	M	4,058	2	-	1	4	9	42	76	169	522	1,579	1,654
		F	6,112	5	1	1	5	9	41	79	190	554	1,941	3,286
N00-N15	Glomerular and renal tubulo-interstitial diseases	M	322	1	-	-	1	-	9	9	26	53	125	98
		F	374	2	-	-	2	2	6	20	25	58	120	139
N17-N19	Renal failure	M	1,377	-	-	1	3	4	23	31	67	190	540	518
		F	1,601	1	1	1	1	2	17	20	72	168	521	797
N40	Hyperplasia of prostate	M	158	-	-	-	-	-	-	-	2	13	62	81
O00-O99	Pregnancy, childbirth and the puerperium	F	46	-	-	-	7	24	15	-	-	-	-	-
P00-P96	Certain conditions originating in the perinatal period	M	115	112	1	1	-	1	-	-	-	-	-	-
		F	84	76	4	2	1	1	-	-	-	-	-	-
Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	M	692	128	49	31	48	43	62	73	106	67	60	25
		F	604	95	41	30	33	42	52	61	79	59	71	41
Q20-Q28	Congenital malformations of the circulatory system	M	281	62	17	17	28	24	33	30	21	25	18	6
		F	257	45	17	13	20	22	23	23	22	25	32	15
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	M	2,790	141	6	8	37	75	123	146	140	136	373	1,605
		F	8,646	89	10	7	13	25	49	54	57	78	797	7,467
R54	Senility without mention of psychosis	M	1,809	-	-	-	-	-	-	-	-	9	266	1,534
		F	7,927	-	-	-	-	-	-	-	-	12	676	7,239
R95	Sudden infant death syndrome	M	86	85	1	-	-	-	-	-	-	-	-	-
		F	54	51	3	-	-	-	-	-	-	-	-	-
R99	Other ill-defined and unspecified causes of mortality	M	726	55	5	6	27	55	117	131	132	104	75	19
		F	341	37	7	5	6	21	46	51	48	41	61	18
V01-Y89	External causes of morbidity and mortality	M	10,786	29	50	142	1,332	1,597	1,826	1,370	1,117	928	1,318	1,077
		F	6,841	25	31	64	346	405	536	545	500	516	1,454	2,419
V01-X59	Accidents	M	6,396	15	39	114	837	784	815	591	589	603	1,056	953
		F	5,107	12	22	45	186	163	225	245	260	358	1,282	2,309

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Table 2
continued **Deaths by age, sex and underlying cause, 2005 registrations**

England and Wales		Numbers												
ICD-10 code	Causes of death*		Age group											
			All ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over
V01-V99, Y85	Transport accidents†	M	2,330	-	12	73	656	416	380	249	190	128	156	70
		F	697	2	7	25	136	71	78	71	72	78	111	46
V01-V89	Land transport accidents involving pedestrians, pedal cyclists, motor cyclists and occupants of motor vehicles	M	2,252	-	11	73	645	409	366	224	179	120	155	70
		F	678	2	7	25	135	71	75	67	65	76	109	46
W00-W19	Falls	M	1,550	1	4	6	27	38	96	119	186	255	465	353
		F	1,535	-	1	2	5	12	30	56	90	130	486	723
W65-W74	Accidental drowning and submersion	M	145	1	10	8	28	16	19	21	19	13	10	-
		F	49	1	2	6	2	3	2	11	8	7	6	1
X00-X09	Exposure to smoke, fire and flames	M	144	-	6	4	7	16	24	8	26	20	22	11
		F	114	-	5	6	2	8	9	13	5	18	35	13
X40-X49	Accidental poisoning by and exposure to noxious substances	M	666	-	-	3	66	218	205	97	45	19	7	6
		F	304	-	1	2	33	51	81	61	42	15	12	6
X41	Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	M	63	-	-	-	9	20	12	13	6	1	1	1
		F	70	-	-	1	7	12	19	19	9	3	-	-
X42	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	M	325	-	-	1	34	143	107	29	7	2	1	1
		F	64	-	-	-	14	16	15	9	6	3	-	1
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	M	128	-	-	-	14	39	36	19	11	6	2	1
		F	77	-	1	-	9	13	17	13	8	4	10	2
X59	Accidental exposure to unspecified factor	M	1,042	1	-	-	7	18	27	35	52	103	331	468
		F	2,117	1	-	-	1	2	5	14	27	85	555	1,427
X60-X84	Intentional self-harm	M	2,511	-	-	1	217	454	635	488	341	178	129	68
		F	803	-	-	2	58	130	163	170	130	63	55	32
X85-Y09	Assault	M	90	2	1	1	23	28	10	14	8	2	1	-
		F	46	1	2	2	8	6	8	5	2	3	5	4
Y10-Y34	Event of undetermined intent	M	1,526	10	10	23	248	321	349	252	151	85	57	20
		F	641	10	7	14	91	98	126	111	73	49	41	21
X60-X84, Y10-Y34, excl Y33.9	Intentional self-harm; and event of undetermined intent, excluding other specified events of undetermined intent	M	3,487	1	1	12	340	647	876	673	443	238	173	83
		F	1,231	3	2	6	105	183	253	256	188	100	85	50
X85-Y09, Y33.9	Assault; and other specified events of undetermined intent	M	640	11	10	13	148	156	118	81	57	27	14	5
		F	259	8	7	12	52	51	44	30	17	15	16	7

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

† Including sequelae of transport accidents.

Figure 2 shows the trends in age-standardised mortality rates (standardised to the European Standard Population) for these three cause of death groups between 1995 and 2005. The highest death rate throughout the period for both sexes was for circulatory diseases, despite the rate for males falling by 37.8 per cent to 2,591 per million population, and the rate for females falling 34.5 per cent to 1,642 per million population since 1995. The male and female death rates for cancer were 18.5 and 13 per cent respectively lower in 2005 than in 1995. The rate for respiratory diseases in males decreased by 16.6 per cent over this period, while the rate for females was 0.9 per cent lower in 2005 than in 1995. Respiratory disease mortality rates in a given year are strongly influenced by the seasonal pattern of mortality in that year and so differences between two years should always be examined in the context of long-term trends. Comparability ratios have been applied to the figures for 1994–2000 in order to produce a consistent trend that adjusts for the change to ICD-10 in 2001; see the Explanatory Notes.

LEADING CAUSES OF DEATH

Both Table 3 and Figure 3 show the ten leading underlying causes of death in 2005 for both males and females. These are ranked according to a World Health Organisation (WHO) list which categorises causes using ICD-10 groups specifically designed for determining the leading causes of death; see the Explanatory Notes. Figure 3 also shows how the leading causes of death for 2005 have changed since 2001.

The leading cause of death for both sexes was ischaemic heart diseases which accounted for one in five male deaths and approximately one in six female deaths during 2005. Cerebrovascular diseases were the second leading cause of death for both sexes and accounted for a higher proportion of female deaths (12.9 per cent) than males (7.9 per cent).

The difference between the top two causes of death was greater among males (a difference of nearly 30,000 deaths) whilst there was a difference of around 7,500 deaths between ischaemic heart and cerebrovascular diseases in women. A further five causes of death appear in both the male and female top ten underlying causes but not at the same ranks. For example while dementia is the fourth leading cause of death among females, it ranks ninth among males.

Of the ten leading causes of death for males in 2005, different cancers appeared four times compared with females where cancers appeared three times. For females both cancers and circulatory diseases appeared equally (three times each). For both sexes in 2005, lung cancer was the most common cancer appearing third in the list for males and sixth for females.

For females, the ranking on age-standardised rates does not match the ranking on numbers of deaths, for example dementia and Alzheimer’s disease is ranked four on number of deaths but would be ranked seven if looking at the age-standardised rate. For males, the ranking on age-standardised rates matches that obtained when ranking on numbers. This is because the age-standardisation process gives very little weight to deaths at older ages (where most of the dementia and Alzheimer deaths occur).

Figure 3 shows that for males, the age-standardised mortality rates for all the leading underlying causes in 2005 have declined over the five years since 2001. The largest percentage falls in male mortality rates were for ischaemic heart diseases and cerebrovascular diseases which both fell by a fifth: 21.9 per cent and 20.2 per cent respectively. The smallest decrease in mortality rates was for malignant neoplasm of the colon, sigmoid, rectum and anus which fell by 6.4 per cent over the five years.

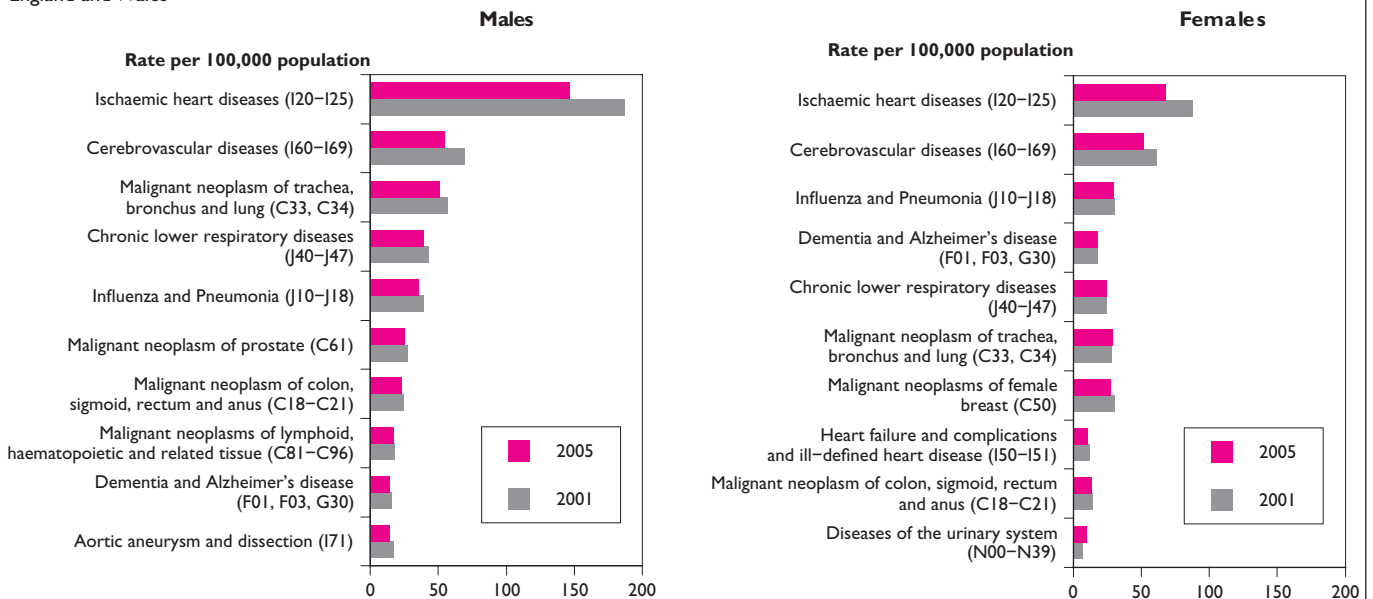
Table 3		Leading causes of mortality: by sex, 2005		
England and Wales		Numbers		
Underlying Cause of death*	Number of deaths	Percentage of all deaths	Age-standardised rate per 100,000 population	
Males				
Rank				
1	Ischaemic heart diseases (I20–I25)	49,205	20.2	146.2
2	Cerebrovascular diseases (I60–I69)	19,266	7.9	55.1
3	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	16,775	6.9	51.1
4	Chronic lower respiratory diseases (J40–J47)	13,589	5.6	38.9
5	Influenza and Pneumonia (J10–J18)	12,209	5.0	35.3
6	Malignant neoplasm of prostate (C61)	9,018	3.7	25.5
7	Malignant neoplasm of colon, sigmoid, rectum and anus (C18–C21)	7,570	3.1	22.8
8	Malignant neoplasms of lymphoid, haematopoietic and related tissue (C81–C96)	5,606	2.3	17.2
9	Dementia and Alzheimer’s disease (F01, F03, G30)	5,076	2.1	14.1
10	Aortic aneurysm and dissection (I71)	4,881	2.0	13.9
	All deaths	243,870	100.0	
Females				
Rank				
1	Ischaemic heart diseases (I20–I25)	38,969	16.0	68.5
2	Cerebrovascular diseases (I60–I69)	31,366	12.9	51.8
3	Influenza and Pneumonia (J10–J18)	19,255	7.9	29.8
4	Dementia and Alzheimer’s disease (F01, F03, G30)	12,789	5.2	18.7
5	Chronic lower respiratory diseases (J40–J47)	12,605	5.2	25.1
6	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	11,895	4.9	28.9
7	Malignant neoplasms of female breast (C50)	10,986	4.5	28.2
8	Heart failure and complications and ill-defined heart disease (I50–I51)	7,212	3.0	11.2
9	Malignant neoplasm of colon, sigmoid, rectum and anus (C18–C21)	6,537	2.7	14.1
10	Diseases of the urinary system (N00–N39)	5,977	2.5	9.9
	All deaths	269,123	100.0	

* The cause of death groups used here are based on a list provided developed by WHO, modified for use in England and Wales. For more information see Griffiths C, Rooney C and Brock A. Leading causes of death in England and Wales – how should we group causes? *Health Statistics Quarterly* 28, 6–17.

Figure 3

Age-standardised rates for the ten leading causes of deaths:* by sex, 2005 and comparison rate for 2001†

England and Wales



* The cause of death groups used here are based on a list provided developed by WHO, modified for use in England and Wales. For more information see Griffiths C, Rooney C and Brock A. Leading causes of death in England and Wales – how should we group causes? *Health Statistics Quarterly* 28, 6–17.
 † For 2001 the mortality rates are given for the top ten causes of death in 2005 as a comparison.

Age-standardised mortality rates for females, by contrast, have not shown a decrease since 2001 for all of the ten leading causes. While mortality rates for ischaemic heart diseases showed the largest decrease of between 2001 and 2005 (22 per cent), rates for diseases of the urinary system increased by nearly a third (32.4 per cent). Three other causes of death also showed an increase in age-standardised mortality rates from 2001 to 2005 though to a lesser extent: dementia and Alzheimer's disease (2.9 per cent); chronic lower respiratory diseases (0.7 per cent); and malignant neoplasm of trachea, bronchus and lung (2.2 per cent).

EXPLANATORY NOTES

Registrations and occurrences

The year in which a death is registered may not correspond to the year in which the death occurred. Up to 1992 ONS publications gave numbers of deaths registered in the data year. However, since 1993 most of our published figures represent the number of deaths that occurred in the data year. In most years (and for most causes of death) this change has little effect on annual totals. However, figures based on date of occurrence provide a more reliable basis for assessing the impact on mortality of external factors (such as 'flu outbreaks or cold weather), while registrations are more timely. We, therefore, take two annual extracts from our deaths database.¹

- The first annual extract, produced in April following the data year, comprises deaths that were registered in that year. Outputs produced using this extract include this report and a report by area of residence published in the summer edition of *Population Trends* and reproduced in the autumn edition of *Health Statistics Quarterly*, as well as the annual Vital Statistics tables.
- The second extract, produced in the September following the data year, comprises deaths that occurred in that year. This extract forms the basis for the mortality annual reference volumes in the DH series.

A change was made last year regarding the basis for presenting underlying cause of death. The cause of death data in this report are based on the cause of death as given in the death register and based on the doctor's or coroner's certificate of cause of death; this is known as the original underlying cause of death. Previously all ONS mortality statistics were based on final underlying cause of death, which takes account of any additional information provided by medical practitioners or coroners after the death has been registered. The underlying cause of death only changes in a very small number of deaths. In 2004 there were around 900 deaths with a different final underlying cause to that originally given on the cause of death certificate. In general, all future registrations outputs showing data for 2004 or later years will use original cause as the basis for presenting cause of death data, while occurrence-based data (for example, ONS annual reference volumes) will continue to be based on final cause.

The exception will be where registration-based cause data is presented in the same table as occurrences, for example, Table 6.3 in the reference tables in *Health Statistics Quarterly*, when all data will be presented as final cause for comparative purposes.

Coding underlying cause of death

Since January 2001 cause of death has been coded to the Tenth Revision of the International Classification of Diseases and Related Health Problems (ICD-10).² This was introduced on the recommendation of WHO and replaced the Ninth Revision (ICD-9),³ which had been in use since 1979. ICD-10 represents the largest change in the ICD in over 50 years. The major changes have been described in detail in *Health Statistics Quarterly* 08⁴ and 13⁵ and also on the National Statistics website (www.statistics.gov.uk/icd10mortality).

Cause of death is assigned by an automated coding system with the exception of deaths due to external causes (ICD-10 codes V01–Y89). These are coded clerically using information from coroners certificates

(including inquest verdicts) to produce consistent figures on suicides, homicides and other deaths not from natural causes.

Comparability ratios

In order to help quantify the changes arising as a result of the change to ICD-10, ONS carried out a bridge coding study.⁶ All deaths registered in 1999 were independently coded to both ICD-9 and ICD-10 and the causes in each revision were compared using internationally agreed groups of equivalent codes. Comparability ratios were produced for selected causes of death, including each ICD cause chapter, to indicate the net effect of the change in classification on a particular cause. The ratios were calculated by dividing the number of deaths coded to a particular cause in ICD-10 by the number coded to that cause in ICD-9. These ratios can then be applied to England and Wales data (from 1993 onwards) coded to ICD-9 in order to examine trends over time. For a particular cause, the number of deaths coded to the equivalent cause in ICD-9 is multiplied by the comparability ratio in order to give an 'expected' number of deaths that would have been coded to this cause in ICD-10. The ratios can also be applied directly to rates, to give an 'expected' rate.

Population estimates

In this report, the population figures used to calculate mortality rates for 2005 are the 2004-based population projections for 2005. These are available on the Government Actuary's Department website (www.gad.gov.uk). The population figures used to calculate mortality rates for 2004 and earlier years are ONS mid-year population estimates.

The population estimates used were the most up-to-date at the time of publication of this report. Population estimates for mid-2004 were published on 20 December 2005. Estimates for 2003 and revised data for 2001–2002 were published on 9 September 2004. Revised estimates for 1992–2000 were published on 7 October 2004. All these estimates incorporate the findings of the local authority population studies, the results of which were published in July 2004. Further information on population estimates can be found on the National Statistics website (www.statistics.gov.uk/popest).

Leading Causes of Death in England and Wales

The cause of death groups used here are based on a list developed by WHO which categorises causes using ICD-10 groups specifically designed for determining the leading causes of death. The list has been modified for use in England and Wales. The use of this ranking list was agreed after a period of public consultation which ended on 13th March 2006. Further information on the rationale behind ranking leading causes of death and how causes are grouped can be found in an article published on this subject in *Health Statistics Quarterly* 28.⁷

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Report:

Deaths involving *Clostridium difficile*: England and Wales, 1999–2004

INTRODUCTION

This is the first report on deaths in England and Wales where *Clostridium difficile* was mentioned as a contributory factor. This report covers the period 1999 to 2004 and includes figures for those years for which ONS has coded all deaths to the tenth revision of the International Classification of Diseases (ICD-10). Since 2001, ONS has routinely coded deaths to ICD-10. Deaths registered in 1999 were coded to both ICD-9 and ICD-10, and are also included in the analysis. As deaths in 2000 were only coded to ICD-9, no figures are presented for that year.

BACKGROUND

This report examines trends in those deaths that involved *C. difficile* as a contributory factor between 1999 and 2004. *C. difficile* is a spore forming bacterium found naturally in the gut of a small proportion (around 3 per cent)¹ of the healthy adult population. *C. difficile* can cause diarrhoea, ranging from a mild disturbance to very severe illness with ulceration and bleeding from the colon (colitis), and perforation of the intestine leading to peritonitis, which can be fatal.² *C. difficile* disease occurs when normal, healthy intestinal bacteria are subdued by the use of antibiotics. This allows *C. difficile* to flourish in the gut and produce a toxin that causes diarrhoea.

Box One explains the terms used in this report.

C. difficile was first described in the 1930s,³ but it was not identified as the cause of pseudomembranous colitis following antibiotic therapy until the late 1970s.⁴⁻⁷ Patients who have been treated with broad spectrum antibiotics (those affecting a wide range of bacteria, including intestinal bacteria) are at the greatest risk of *C. difficile* infection. In addition to antibiotic exposure, the risk of contracting *C. difficile* is also raised for elderly patients, those who have recently had gastrointestinal surgery, those who have a long length of stay in healthcare settings, and those who have a serious underlying illness or a condition that compromises their immune system.^{8,9} Patients are also at risk of developing *C. difficile* disease when there are outbreaks in hospitals. Infection control is also an important risk factor.

A recent Department of Health report addresses actions that should be taken to reduce levels of hospital-acquired infections.¹⁰ A report on *C. difficile* and actions to reduce the chances of outbreaks was released by

the Health Protection Agency (HPA) in February 2003.¹¹ In January 2004, the HPA began to carry out a mandatory reporting scheme for all cases of *C. difficile* in persons 65 years and over.¹² Results from the first year's surveillance (January to December 2004) were published by the Department of Health.¹³

The number of deaths due to *C. difficile* is difficult to estimate. Trends in mortality are normally monitored using the underlying cause of death (the disease which initiated the train of events leading directly to death). *C. difficile*, and other hospital-acquired infections such as MRSA, are often not the underlying cause of death. Those who die with *C. difficile* are usually patients who were already very ill and it may be their existing illness, rather than *C. difficile*, which is designated as the underlying cause of death. There is therefore an interest in the number of deaths where *C. difficile* contributed to the death – only conditions which contribute directly to the death should be recorded on the medical certificate of cause of death (death certificate). Results presented in this report identify deaths where the underlying cause was *C. difficile* and those where it was mentioned on the death certificate as a contributory factor.

METHODS

Identification of deaths involving *Clostridium difficile*

All deaths are coded by the Office for National Statistics (ONS) according to the International Classification of Diseases (ICD) supplied by the World Health Organization. In the Tenth Revision (ICD-10), used by ONS from 2001 onwards, there is a specific code (A04.7) for 'Enterocolitis due to *Clostridium difficile*'. While this code identifies the vast majority of deaths involving *C. difficile*, a small number of *C. difficile*-related deaths are not captured by this code alone. Since 1993 ONS has stored the text of death certificates on a database in addition to all the ICD codes relating to causes identified on the death certificate. This means that it is possible to identify records where *C. difficile* is mentioned, but is not coded under the specific ICD-10 code. In addition to extracting all deaths related to the specific A04.7 ICD-10 code, deaths mentioning a number of other ICD categories to which diseases including *C. difficile* could be coded were also extracted. The text of these records was then searched manually for mentions of *Clostridium difficile*, *C. difficile* or pseudomembranous colitis. In the Ninth Revision of the ICD (ICD-9) there is no specific code for 'Enterocolitis due to *Clostridium*

difficile. Identifying deaths involving *C. difficile* would therefore require extensive text searching of very large numbers of death certificates.

The ICD-10 codes used to select deaths to search manually are shown in Table 1. ONS used ICD-10 coded data from 2001 onwards for this report. All deaths registered in 1999 in England and Wales were coded to both ICD-9 and ICD-10, to provide comparisons between the two ICD revisions. Deaths registered in 1999, identified from their ICD-10 codes as involving *C. difficile*, are also included in this report.

Since 1986 ONS has used the internationally recommended death certificate for neonatal deaths. This means that these deaths cannot be assigned an underlying cause of death.¹⁴ However, as the data for this report were based on all mentions of *C. difficile* or pseudomembranous colitis, neonates have been included. Neonatal deaths were extracted in the same way as described above for post-neonatal deaths.

Deaths with an underlying cause of death of *C. difficile* were identified by selecting those deaths with a mention of *C. difficile* or pseudomembranous colitis that also had one of the underlying causes of death noted in Table 1.

Derivation of place of death categories

The place of death categories used in this analysis have been derived from three items of information recorded by ONS (Table 2). First, the communal establishment code distinguishes between deaths in communal establishments (which are given a code specific to the particular institution) and those at home or occurring elsewhere. Second, the establishment type code classifies communal establishments into different types (e.g. hospital, hospice, local authority residential home). Lastly, the NHS Indicator code shows whether the establishment was NHS or non-NHS funded.

Methods of analysis

This report presents the number of *C. difficile* related deaths by sex, age and place of death. Both age-specific and age-standardised death rates for *C. difficile* are presented in this report. Age-standardised rates are explained in Box One.

Specific codes*	Non-specific codes*
A04.7 (Enterocolitis due to <i>Clostridium difficile</i>)	A05.8 (Other specified bacterial food borne intoxications)
	A41.4 (Septicaemia due to anaerobes (Excludes: gas gangrene))
	A48.0 (Gas gangrene: Clostridial; cellulites, myoncosis)
	A49.8 (Other bacterial infections of unspecified site)
	P36.5 (Sepsis of newborn due to anaerobes)

* Codes used to identify deaths where *C. difficile* was the underlying cause of death (on deaths where *C. difficile* was mentioned): A04.7, A09, A41.4, and A49.8.

RESULTS

Number of deaths where *Clostridium difficile* contributed to the death or was the underlying cause of death

The number of death certificates mentioning *C. difficile* increased each year in England and Wales between 1999 and 2004 (Table 3). Figure 1 shows the increasing number of death certificates where *C. difficile* was mentioned since 1999. Mentions of *C. difficile* on death certificates increased from 975 in 1999 to 2247 in 2004. Overall the number of deaths with a mention of *C. difficile* was 2.3 times higher in 2004 than it was in 1999. Among deaths with a mention of *C. difficile*, the percentage for which it was the underlying cause was similar (around 55 per cent) in each year (Table 3).

Mortality rates for all deaths mentioning *Clostridium difficile*

Age-standardised rates for deaths involving *C. difficile* in England and Wales have more than doubled since 1999, from 11.4 to 23.6 per million for males and from 10.7 per million to 23.4 per million for females (Table 4). Overall, rates for deaths involving *C. difficile* were very similar for both males and females in each year (Figure 2).

Most of the deaths involving *C. difficile* occurred among people aged 65 and over. Mortality rates in specific age groups for England and Wales are shown in Table 5. Between ages 75 and 84, there were 208.4 and 214.7 deaths per million population for males and females respectively in the period 2001 to 2004. This compares with 0.1 and 0.2 deaths per million population, for males and females respectively, in the under 45 age group (Table 5).

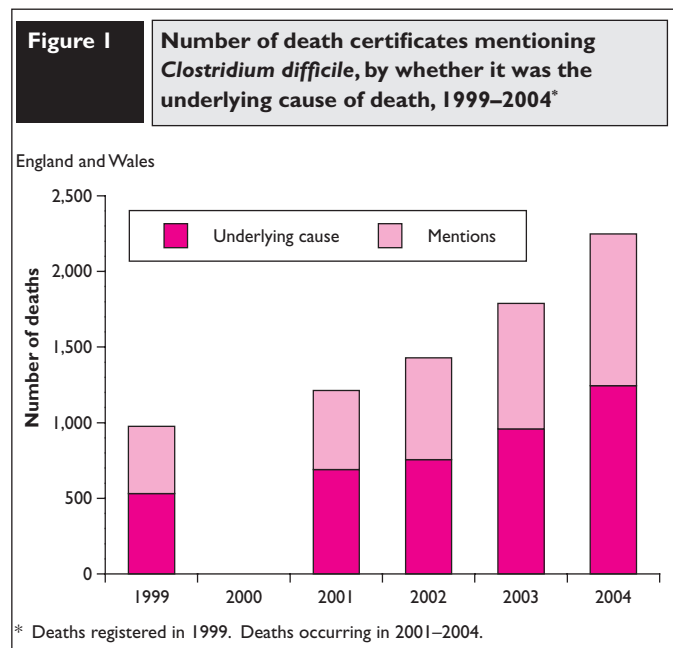


Table 2 Derivation of Place of Death Classification

Place of death classification	Communal Establishment	Establishment type	NHS Indicator
Own home	Home	N/A	N/A
NHS general hospital	Communal Establishment Code	General hospital or Multi-function site	NHS
Non-NHS general hospital		General hospital or Multi-function site	Non-NHS
Hospice		Hospice	
NHS nursing home		Homes for the chronic sick or Medical nursing home	NHS
Non-NHS nursing home		Homes for the chronic sick, Medical nursing home, Private nursing home or Private nursing home (aged)	
Private residential home		Residential home (private)	Non-NHS
Local Authority residential home		Residential home (Local Authority)	NHS
Other places	Elsewhere	All other codes	N/A

Table 3 Number of death certificates with *Clostridium difficile* mentioned and as the underlying cause, 1999–2004

England and Wales

	1999	2001	2002	2003	2004	% change 1999–2004
England and Wales*						
Certificates mentioning <i>C.difficile</i>	975	1,214	1,428	1,788	2,247	130
Certificates where <i>C.difficile</i> was the underlying cause of death†	531	691	756	958	1,245	134
Percentage of mentions selected as underlying cause	54	57	53	54	55	
England						
Certificates mentioning <i>C.difficile</i>	918	1,150	1,338	1,702	2,155	135
Certificates where <i>C.difficile</i> was the underlying cause of death†	499	661	709	912	1,187	138
Percentage of mentions selected as underlying cause	54	57	53	54	55	
Wales						
Certificates mentioning <i>C.difficile</i>	56	63	88	85	88	57
Certificates where <i>C.difficile</i> was the underlying cause of death†	31	29	46	46	55	77
Percentage of mentions selected as underlying cause	55	46	52	54	63	

* England and Wales data include non-residents who died in England and Wales. Data for England and Wales on their own exclude deaths of non-residents.

† Excludes neonatal deaths.

Table 4 Age-standardised mortality rates for *Clostridium difficile* by sex, 1999–2004

England and Wales

Rates per million population

	1999	2001	2002	2003	2004	% change 1999–2004
England and Wales*						
Males	11.4	13.1	15.5	18.6	23.6	106
Females	10.7	12.8	15.1	18.8	23.4	120
England						
Males	11.6	13.2	15.3	18.8	23.9	107
Females	10.6	12.9	15.1	19.0	23.9	126
Wales						
Males	9.5	11.9	17.9	13.7	16.7	76
Females	11.6	10.6	15.1	15.9	16.2	39

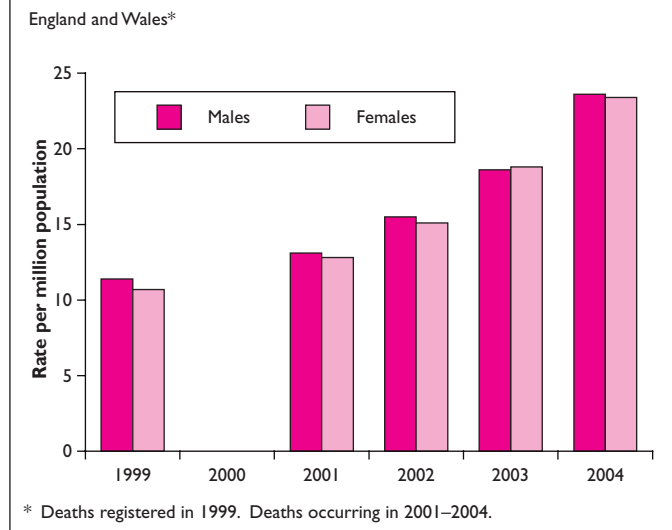
* England and Wales data include non-residents who died in England and Wales. Data for England and Wales on their own exclude deaths of non-residents.

Table 5 Age-specific mortality rates for *Clostridium difficile* by sex, 2001–2004

England and Wales							Rates per million population	
Age group	England and Wales*		England		Wales			
	Males	Females	Males	Females	Males	Females		
Under 45	0.1	0.2	0.1	0.2	0.0	0.9		
45-54	1.4	1.6	1.3	1.6	1.3	2.6		
55-64	5.2	7.5	5.2	7.8	4.3	2.8		
65-74	39.5	37.8	40.3	37.8	27.8	39.0		
75-84	208.4	214.7	212.0	218.3	154.2	152.7		
85 and over	832.0	789.8	832.6	798.0	806.7	647.1		

* England and Wales data includes non-residents who died in England and Wales. Data for England and Wales on their own exclude deaths of non-residents.

Figure 2 Age-standardised mortality rates for *Clostridium difficile* by sex, 1999–2004*



Place of death

Death certificates rarely specify the place where an infection was acquired. However, the place of death is recorded. Between 2001 and 2004, deaths involving *C. difficile* made up 0.32 per cent of all deaths in England and Wales. Among deaths that occurred in NHS general hospitals and NHS nursing homes deaths involving *C. difficile* made up 0.52 per cent and 0.45 per cent of the total in these institutions respectively, or almost 5 per thousand deaths.

Most deaths in England and Wales occur in hospital (56 per cent of all deaths between 2001 and 2004 occurred in NHS general hospitals). Over the period 2001 to 2004, 92.4 per cent of deaths that mentioned *C. difficile* occurred in NHS general hospitals. Many of these deaths in hospital will have been to patients who were admitted because they were already seriously ill with another condition.

Box One

Glossary of Terms

***Clostridium difficile* (*C. difficile*):** is a spore forming bacterium which is present as one of the 'normal' bacteria in the gut of up to 3 per cent of healthy adults. It is much more common in babies – up to two thirds of infants may have *C. difficile* in the gut, where it rarely causes problems. People over the age of 65 years are more susceptible to contracting infection.

Diarrhoea: Diarrhoea occurs when the lining of the small or large intestine is irritated. *C. difficile* toxins are a major cause of antibiotic-associated diarrhoea. This leads to increased water being passed in the stools. Acute diarrhoea is usually caused by a viral infection or a bacterial infection and affects almost everyone from time to time. It usually clears up in a couple of days and is not serious. However it can be serious in babies and the frail and elderly, because of the risk of dehydration.

Pseudomembranous colitis (PMC): is a complication of antibiotic therapy often caused by *C. difficile* infection. PMC causes severe inflammation in areas of the colon (large intestine). Almost any antibiotic can cause PMC by upsetting the balance of the bacteria in the gut and intestines.

Age-standardised rate: Directly age-standardised rates make allowances for differences in the age structure of the population, over time and between sexes. The age-standardised rate for a particular disease is that which would have occurred if the observed age-specific rates for the disease had applied in a given standard population. In this report we have used 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 over time, and between males and females.

Sources: Health Protection Agency/ NHS Direct Online/ Office for National Statistics

Table 6

Number of deaths mentioning *Clostridium difficile* by place of death, compared to all causes of death, 2001–2004

England and Wales

	All cause number of deaths	Number of deaths	Percentage of all <i>C. difficile</i> deaths	<i>C. difficile</i> as a percentage of all deaths in the establishment
England and Wales*				
Own home	387,529	48	0.7	0.01
NHS general hospital	1,178,776	6,168	92.4	0.52
Non-NHS general hospital	11,561	12	0.2	0.10
Hospice	92,116	13	0.2	0.01
NHS nursing home	11,077	50	0.7	0.45
Non-NHS nursing home	199,924	133	2.0	0.07
Private residential home	118,138	41	0.6	0.03
Local Authority residential home	30,586	16	0.2	0.05
Other places	84,988	196	2.9	0.23
Total	2,114,695	6,677	100.0	0.32
England				
Own home	362,252	47	0.7	0.01
NHS general hospital	1,097,719	5,864	92.4	0.53
Non-NHS general hospital	10,892	12	0.2	0.11
Hospice	89,363	12	0.2	0.01
NHS nursing home	10,923	50	0.8	0.46
Non-NHS nursing home	188,764	123	1.9	0.07
Private residential home	112,284	40	0.6	0.04
Local Authority residential home	28,720	16	0.3	0.06
Other places	76,922	181	2.9	0.24
Total	1,977,839	6,345	100.0	0.32
Wales				
Own home	25,226	1	0.3	0.00
NHS general hospital	77,885	296	91.4	0.38
Non-NHS general hospital	273	0	0.0	0.00
Hospice	2,641	1	0.3	0.04
NHS nursing home	147	0	0.0	0.00
Non-NHS nursing home	11,014	10	3.1	0.09
Private residential home	5,828	1	0.3	0.02
Local Authority residential home	1,861	0	0.0	0.00
Other places	7,065	15	4.6	0.21
Total	131,940	324	100.0	0.25

* England and Wales data include non-residents who died in England and Wales. Data for England and Wales on their own exclude deaths of non-residents.

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Publication 29 June 2006

- Planned articles:**
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 - Population definitions and the future of statistical provision – what do users want
 - Administrative sources and population statistics
 - Estimates of the population by ethnic group in England

- Reports:**
- Live births in England and Wales, 2005: area of residence
 - Death registrations in England and Wales, 2005: area of residence

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- Planned articles:**
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 - Trends in premature mortality, England and Wales 1950–2004
 - Trends in deaths related to drug misuse, England and Wales, 1993–2004
 - 2001 Carstairs index of deprivation for England and Wales
 - Residents and staff in communal establishments: data quality issues in the 2001 Census
- Reports:**
- Infant and perinatal mortality, 2005: health areas, England and Wales
 - Unexpected deaths in infancy, 2005
 - Death registrations in England and Wales, 2005: area of residence
- Annual Update**
- Mortality statistics: injury and poisoning, England and Wales, 2004

Forthcoming Annual Reference Volumes

Title	Planned publication
Mortality statistics: injury and poisoning 2004, DH4 no. 29*	June 2006

* Available through the National Statistics website only; www.statistics.gov.uk

