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The Director of ONS is also the National Statistician.

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Contacts

This publication

For information about this publication, contact the editors:
Aileen Simkins
Carol Summerfield
Madhavi Bajekal
tel: 020 7014 2389, email: hsq@ons.gsi.gov.uk

Other customer and media enquiries

ONS Customer Contact Centre
Tel: 0845 601 3034
International: +44 (0)845 601 3034
Minicom: 01633 812399
Email: info@statistics.gsi.gov.uk
Fax: 01633 652747
Post: Room 1015, Government Buildings,
Cardiff Road, Newport, South Wales NP10 8XG
www.statistics.gov.uk

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Population Trends	by 23 Oct	by 2 Feb	by 4 May	by 26 July

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Health Statistics Quarterly
Office for National Statistics
FG149
1 Myddleton Street
London
EC1R 1UW

in brief

Centre for Health Analysis and Reporting

As part of a recent statistical directorate reorganisation, the Office for National Statistics (ONS) has brought together health analysis and reporting work. The new unit is called the Centre for Health Analysis and Reporting (CHAR), managed by Aileen Simkins, reporting to Guy Goodwin as Executive Director for Population, Health and Regional Analysis.

CHAR currently has staff both in London (Myddelton Street) and Newport. We will be working to complete our relocation plans by the end of 2009, with all posts then in Newport. We will have to lose some very experienced London staff and are actively planning for knowledge transfer to Newport, managing risks carefully.

We are considering how to improve the visibility and usefulness of our publications, including *Health Statistics Quarterly*. Ideas are welcome, addressed to: hsq@ons.gsi.gov.uk

A copy of the CHAR business plan has been circulated to various contacts and is available on request from: hsq@ons.gsi.gov.uk

Smoking-related behaviour and attitudes 2007

On 25 June 2008 ONS released results from questions about smoking which were included on the ONS Omnibus survey at the request of the Health and Social Care Information Centre. In the survey, questions about smoking behaviour and habits, giving up and stopping smoking, perceptions and awareness of issues related to smoking, attitudes related to smoking and smokers' response to their attitudes were asked of about 2,500 adults aged 16 and over.

The report examines the prevalence of cigarette smoking, consumption, dependency and smokers' perceptions of relative risk and giving up. It includes advice from medical professionals, as well as people's opinions on smoking restrictions and second-hand smoking. The report is available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=1638

Cancer survival in the 'Spearhead' Primary Care Trusts of England

Cancer survival in the 'Spearhead' Primary Care Trusts of England, 1998–2004 will be published on 4 September 2008. These analyses update those published for 1996–2003 in April 2007. They have been produced in collaboration between the London School of Hygiene and Tropical Medicine and the National Cancer Intelligence Centre, Office for National Statistics.

This report will compare one- and five-year survival from 10 common cancers in patients resident in 'Spearhead' Primary Care Trusts (PCTs), who were diagnosed during 1998–2003 and followed up to the end of 2004, with those in the rest of England. The 88 'Spearhead' PCTs, out of a total of 302 in 2004, were selected by the Department of Health because they face the greatest health challenges. They were intended to be the focus of interventions designed to reduce health inequalities. These data will be used as the basis for assessing progress in cancer survival. The cancers measured are bladder, breast, cervix, colon, lung, oesophagus, ovary, prostate, rectum and stomach.

The report will available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=14821

Date of 2011 Census announced

The planned date for the next UK census has been announced jointly by ONS, the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency, as 27 March 2011. Selection of the planned date for the census took many factors into account including public holidays, school and university term times, potential election dates and daylight hours. The confirmed date will follow approval, through secondary legislation, by Parliament and the respective legislatures in Scotland and Northern Ireland towards the end of 2009.

A rehearsal for the 2011 Census will be carried out in 2009. In England and Wales this will take place on 11 October 2009 in:

- Lancaster
- London Borough of Newham, and
- Ynys Môn – Isle of Anglesey

Complementary rehearsals will also take place in Scotland and Northern Ireland.

The rehearsal will pilot the processes and operational systems for the planned census in 2011. ONS will, in particular, work closely with local authorities and community groups in the rehearsal areas to establish effective ways of working together in the preparation for the 2011 Census, building on the experience gained in the 2007 Test in Bath and North East Somerset, Camden, Carmarthenshire, Liverpool and Stoke-on-Trent.

The combination of rehearsal areas was chosen to provide experience of the different factors and environmental conditions which will occur in the 2011 Census. A sample of around 110,000 households across the three areas will be selected. Ten selection criteria were applied in order to determine the chosen areas. The combination selected includes: a large two tier area covering sections of a city and some surrounding rural areas; an area in London with diverse population; and an area in Wales with a high population of Welsh speakers.

A temporary field force will be recruited to carry out the rehearsal. Public participation in the rehearsal is voluntary, and the results will be used for evaluation purposes. No statistical outputs will be produced.

Prior to the rehearsal, a check of addresses in the selected areas will seek to ensure complete coverage. Households will receive census questionnaires either by post (in the majority of cases) or by hand delivery from census field staff. Census forms may be returned by post or completed online. There will be a subsequent follow-up of households which do not respond.

The Census Coverage Survey (CCS) will also be rehearsed some five weeks after the rehearsal itself, in a sample of the selected areas. The CCS will assess the level of under coverage and the characteristics of the households who do not respond.

Births and deaths 2007

Provisional annual figures for births and deaths in England and Wales were published on 10 July 2008. Tables for births and for deaths are respectively available on the National Statistics website at:

www.statistics.gov.uk/statbase/Product.asp?vlnk=14408

www.statistics.gov.uk/statbase/Product.asp?vlnk=14409

These annual figures and the report on 'Death registrations in England and Wales, 2007: causes' in this edition of *Health Statistics Quarterly* are normally published in the Summer edition. Publication was delayed due to problems encountered with the implementation of the registration on line system (RON) at register offices in England and Wales during 2007. Provisional quarterly births, deaths and childhood mortality for the quarter ending March 2008, which are usually available in this edition, are planned to appear in the Winter edition.

Mortality statistics injury and poisoning 2007

Following a public consultation in summer 2007, ONS has changed the main basis of reporting for the majority of its mortality outputs from deaths that occurred in a calendar year to deaths registered in a calendar year. In addition, ONS is undertaking research to improve the reporting of its mortality outputs and the timetable for mortality outputs is in a period of transition. A consequence is that the annual update on injury and poisoning statistics, that in previous years has appeared in Autumn's *Health Statistics Quarterly*, is not included in this edition.

It is still intended to produce an analysis on injury and poisoning statistics. However, details of the content and timing of this output has not yet been finalised.

Users who would like to give their views on the content of ONS mortality outputs are invited to contact Vital Statistics Output Branch at: vsob.consultation@ons.gsi.gov.uk

Recent Publications

Annual Abstract of Statistics 2008 edition (Palgrave Macmillan, £49.50, July, ISBN 978–0–230–54560–1, available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=94)

Mortality statistics: childhood, infant and perinatal 2006 (DH3 no. 39) (July, available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305)

Population Trends 132 (Palgrave Macmillan, £32.50, June, ISBN 978–0–230–21755–3, available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6303)

UK Health Statistics 2008 edition (Palgrave Macmillan, £50, June, ISBN 978–0–230–21096–7, available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6637)

All of the above Palgrave Macmillan-published titles can be ordered on 01256 302611 or online at: www.palgrave.com/ons. All publications listed can be downloaded free of charge from the National Statistics website.

Health indicators

England and Wales

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

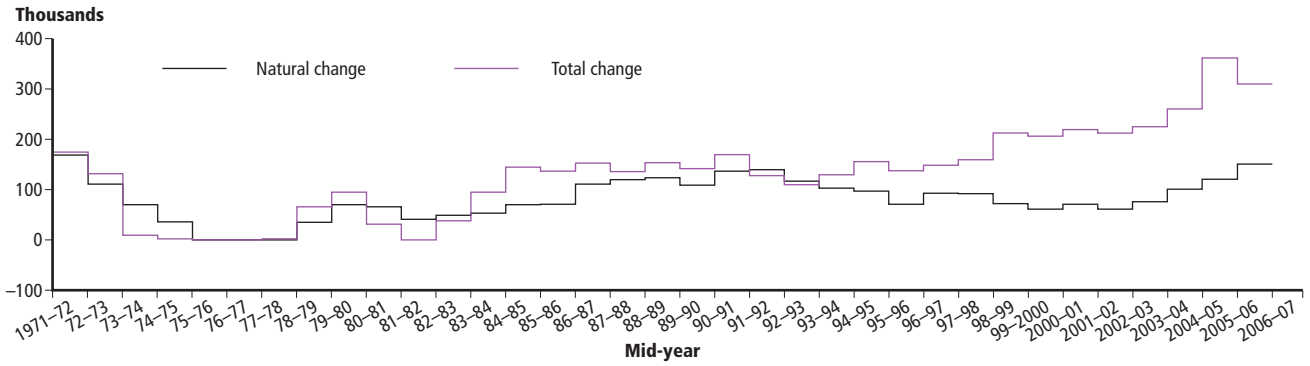


Figure B Age-standardised mortality rate[1]

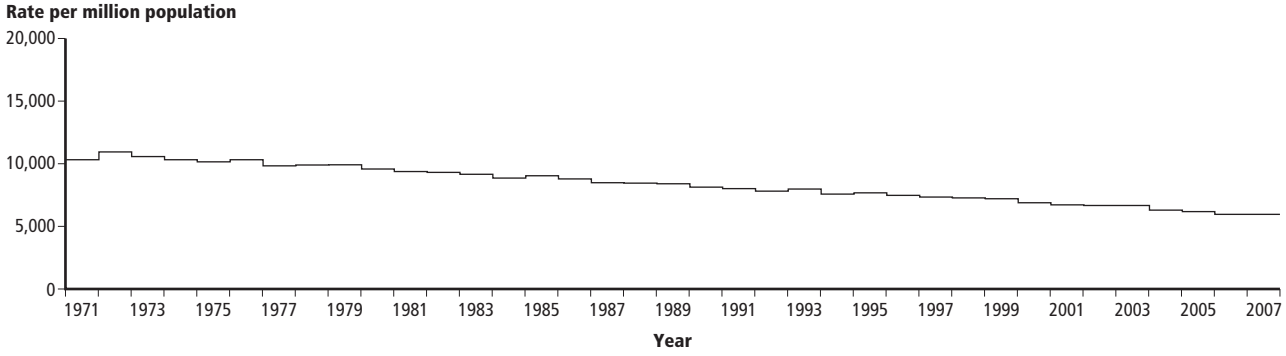


Figure C Infant mortality (under 1 year)

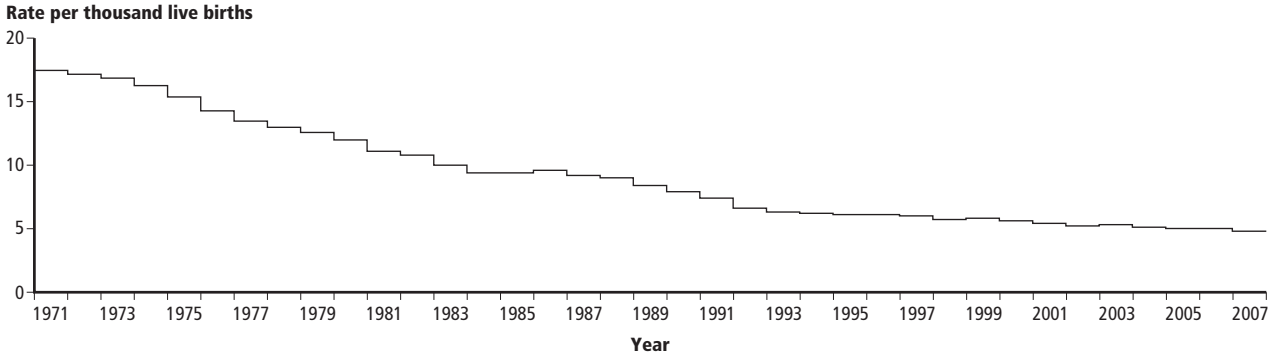
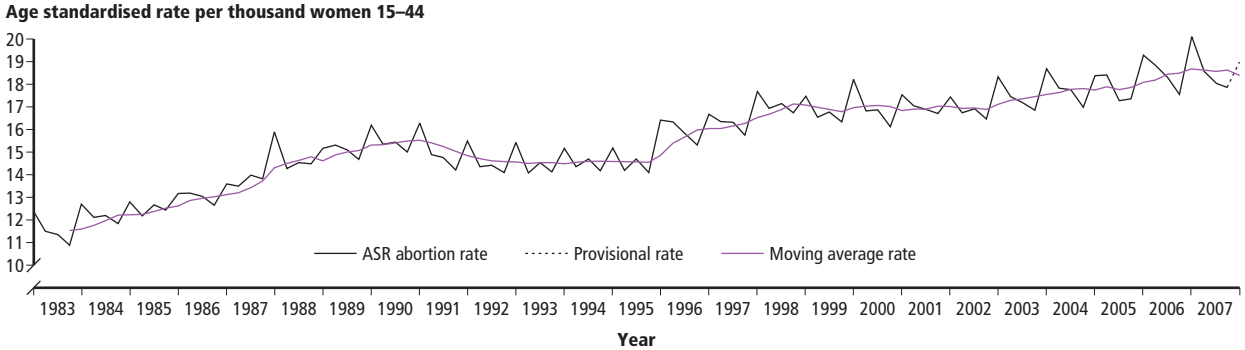


Figure D Age-standardised quarterly abortion rates – residents[2]



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

2 Rates for 2007 and March quarter 2008 are based on 2006 projected projections.

Differences in mortality between rural and urban areas in England and Wales, 2002–04

Andrea Gartner
Wales Centre for Health
Daniel Farewell and Frank Dunstan
Cardiff University
Emma Gordon
Office for National Statistics

This article examines differences in mortality between rural and urban areas in England and Wales in the years 2002–04 using the Rural and Urban Area Classification 2004. The analysis includes adjustment using the Index of Multiple Deprivation 2004 and Welsh Index of Multiple Deprivation 2005 to investigate whether mortality differences between rural and urban areas could be explained by differences in the distribution of deprivation.

Introduction

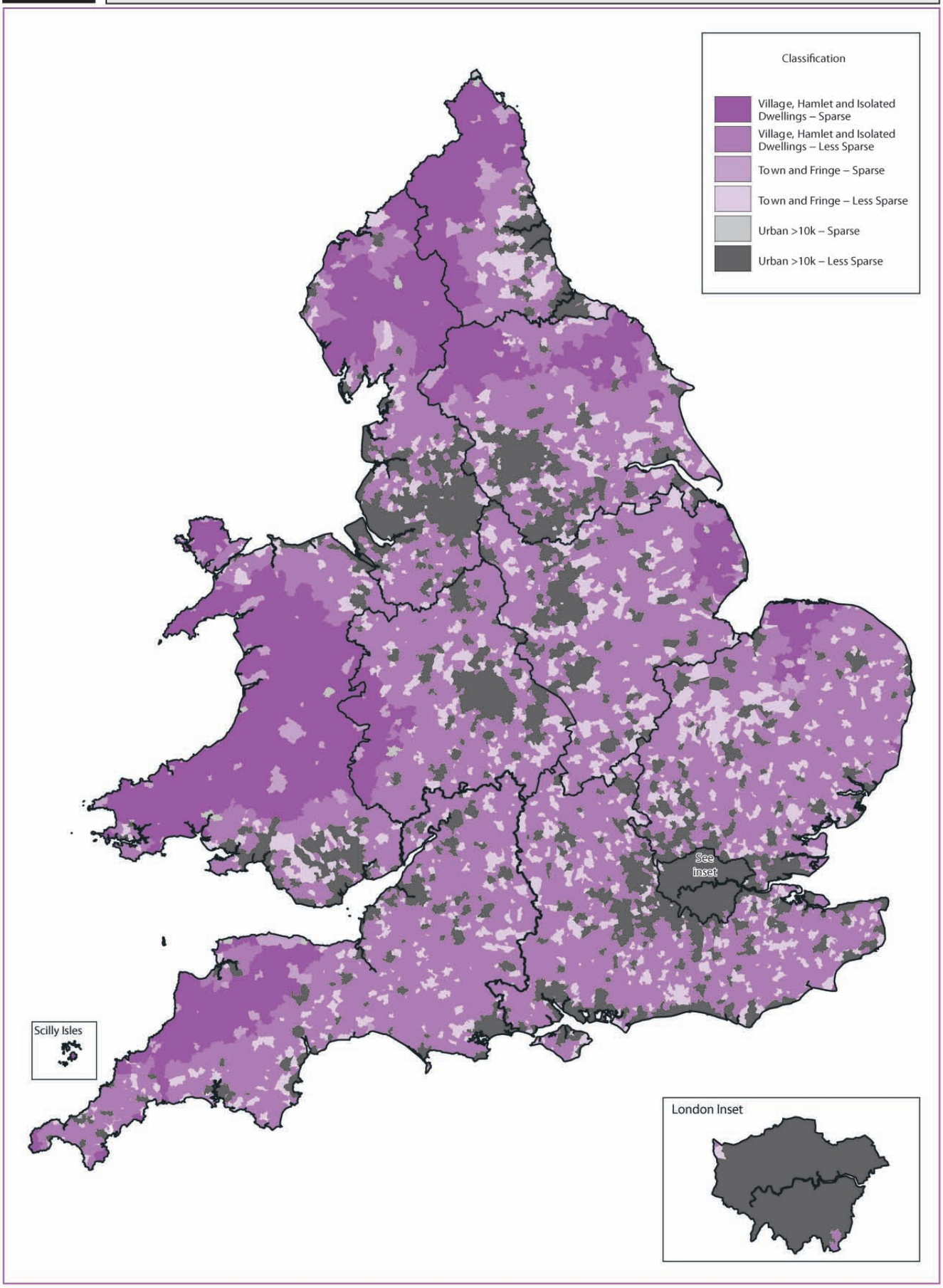
Much research into health inequalities in the UK has concentrated on variations between geographical areas, sometimes using aggregate measures of socio-economic circumstances.[1,2] However, relatively little analysis has been published on differences in health experience between rural and urban areas.[3] A small number of studies have found relatively low average rates of mortality for most causes of death in rural areas, particularly in remote rural areas. In addition, a few studies have investigated whether these differences can be explained by differences in socio-economic characteristics between rural and urban populations.[4]

There is sometimes a public perception of a 'rural idyll' of green countryside, fresh air and better health. However, the assumption that rural populations are inevitably healthier is increasingly being challenged.[5] In addition, specific problems such as stress and suicide in farmers have received media and political attention. There is currently renewed interest in rural affairs, particularly concerning rural health policy, resource allocation and issues of access to health services. The Welsh Assembly Government, for example, has recently set up a new working group and is developing a rural health plan for Wales.

Rural areas have witnessed significant social change, particularly from the effects of migration resulting in changing population structures. Migration is highly socially selective and 'gentrification' has been evident in many rural areas, as better-off people have moved into the countryside and the less affluent have been increasingly disadvantaged in the rural housing market.[6]

There is no universally accepted definition of 'rural' and 'urban', and it is difficult to compare studies that use different classifications of rurality. A new Rural and Urban Area Classification (RUAC) was launched in 2004,[7]

Figure 1 Lower Super Output Areas in England and Wales mapped by Rural and Urban Area Classification, 2004



sponsored by a number of government organisations including the Office for National Statistics (ONS), the Department for Environment, Food and Rural Affairs (DEFRA) and the National Assembly for Wales (NAW), and this has been adopted as a national standard. Although the rural and urban classification has been identified as an important monitoring tool that should be used more widely for the dissemination of statistics, until now no official mortality statistics have been published using this classification.

Methods

Classification of rural and urban areas

The RUAC 2004 was developed to harmonise rural and urban classifications, which tended to use conflicting definitions. The main emphasis is placed on describing the type of rural settlements and the wider geographical context of such settlements, for example their 'sparsity'.[7] The classification uses the sparsity classes 'less sparse' or 'sparse', and for urban areas these can be interpreted as 'densely populated' and 'less densely populated' respectively. For this analysis, the RUAC was used to classify areas in England and Wales at the Lower Super Output Area (LSOA) level. There are 32,482 LSOAs in England and 1,896 in Wales, with an average population of approximately 1,500 people. Results were produced for a simple rural/urban dichotomy and for the six rural/urban classes available at this geographical level of the RUAC.

A map of England and Wales illustrating the RUAC at LSOA level is displayed in Figure 1.

Table 1 shows the six classes for LSOAs, with the numbers of LSOAs and the percentage of the population in each class in 2002–04. In England, approximately 20 per cent of the population lives in an area classed as rural, whereas in Wales this figure is approximately 35 per cent.

Table 1 **Number of Lower Super Output Areas and percentage of the total population in each Rural and Urban Area Classification category, 2002–04**

England and Wales

Rural/urban dichotomy	Sub-classification		England		Wales	
	Context	Settlement type	Number of LSOAs	Percentage of population	Number of LSOAs	Percentage of population
Urban	Sparse	> 10,000 population	70	0.2	37	2.0
	Less sparse	> 10,000 population	26,385	80.8	1,201	62.9
Rural	Sparse	Town & Fringe	152	0.5	72	3.7
		Village & dispersed	227	0.7	167	9.0
	Less sparse	Town & Fringe	2,929	9.1	265	14.1
		Village & dispersed	2,719	8.7	154	8.3

Source: Office for National Statistics Lower Super Output Area population estimates (unpublished)

Measurement of area deprivation

In this analysis, the Index of Multiple Deprivation 2004[8] (IMD) for England and the Welsh Index of Multiple Deprivation 2005[9] (WIMD) for Wales were used to assess whether differences between rural and urban mortality are evident once area deprivation is taken into account. These deprivation measures were applied in quintiles at the LSOA level for England and Wales separately.

The IMD and WIMD are recent composite indices each made up of seven domains with an associated weight, as shown in Box One. Because the IMD and WIMD domains are slightly different, use different data sources and have different weights attached, they are not directly comparable. The IMD 2000 was found to have strong associations with mortality in both rural and urban areas,[10] and it has been suggested that these indices are more suited to rural/urban comparisons than previous measures such as the Carstairs and Townsend scores.[5] The latter have been criticised for the use of car ownership as one indicator of socio-economic status which is considered essential in rural areas.[11,12,13] There is also concern that rural deprivation is hidden by favourable averages, particularly when using indices at ward or higher geographical levels,[11] but the IMD and WIMD are available at the preferred small area level (LSOA).

A separate analysis by Gartner[14] (not reported here) compared the mortality rates and patterns obtained by using different measures of deprivation: IMD and WIMD including or excluding their health domains, IMD or WIMD income domain or employment domain only, and the Townsend index. The choice of deprivation measure had little effect on the results.

Box one

Domains and weight in the Index of Multiple Deprivation 2004 and Welsh Index of Deprivation 2005

IMD domain	Weight (per cent)	WIMD domain	Weight (per cent)
Income	22.5	Income	25.0
Employment	22.5	Employment	25.0
Health and disability	13.5	Health	15.0
Education, skills and training	13.5	Education, skills and training	15.0
Barriers to housing and services	9.3	Housing	5.0
Living environment	9.3	Physical Environment	5.0
Crime	9.3	Geographical access to services	10.0

Figure 2 for England and Figure 3 for Wales show the distribution of LSOAs classified as rural or urban (as a dichotomy) by deprivation quintile. In England, 63.8 per cent of rural LSOAs were in the two least deprived quintiles and 12.1 per cent in the two most deprived quintiles, with the largest proportion being in quintile 2. For urban LSOAs, the corresponding proportions were 34.6 per cent in the two least deprived quintiles and 46.3 per cent in the two most deprived, with the largest proportion in quintile 5. The pattern for LSOAs in Wales was slightly different, as shown in Figure 3, where 17.8 per cent of the rural LSOAs were in the least deprived quintile compared to a higher proportion of 21.2 per cent of urban areas. Table 2 shows the corresponding counts of LSOAs in each deprivation quintile in England and Wales.

Figure 2 Distribution of LSOAs by rural/urban classification and IMD deprivation quintile

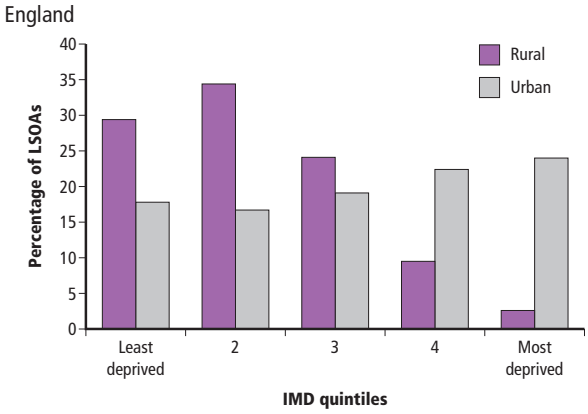


Figure 3 Distribution of LSOAs by rural/urban classification and WIMD deprivation quintile

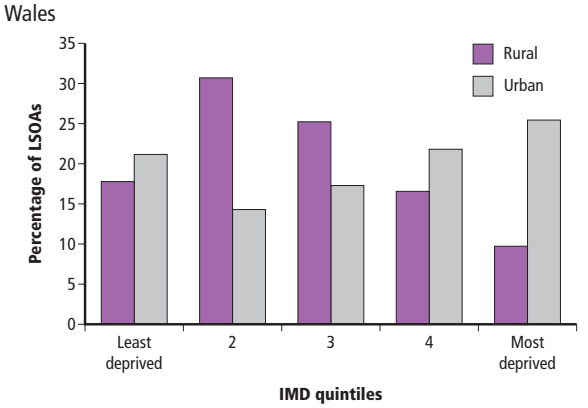


Table 2 Number of LSOAs by IMD/WIMD deprivation quintile and rural/urban dichotomy

England and Wales

Country	Rural/urban dichotomy	Least deprived	2	3	4	Most deprived
England	Rural	1,769	2,076	1,452	572	158
	Urban	4,720	4,427	5,048	5,922	6,338
Wales	Rural	117	202	166	109	64
	Urban	262	177	214	270	315

Populations and deaths

The population data used were unpublished mid-year LSOA population estimates for the years 2002 to 2004, by five-year age band and sex, provided by ONS.

Deaths in the aggregated period 2002–04 for persons of all ages resident in England and Wales were included, except in the analysis of suicide where only persons aged 15 and over were included. The deaths were selected by underlying cause of death coded by ONS using the International Classification of Diseases, Tenth Revision (ICD–10), and grouped by five-year age bands, sex and LSOA.

The causes selected for this analysis included leading causes of death, such as all cancers, respiratory diseases and circulatory diseases, as well as those previously reported to be higher in rural areas, such as accidents and suicides.[3,15] Lung cancer was also included as it was reported to be higher in urban areas.[15] A list of the causes investigated and their ICD–10 codes is shown in Box Two.

Box two

Causes of death investigated, with corresponding International Classification of Diseases, Tenth Revision (ICD–10) codes

Cause of death	ICD–10 code
All causes	–
All malignant neoplasms	C00–C97
Lung cancer	C33–C34
All respiratory diseases	J00–J99
All circulatory diseases	I00–I99
Suicide	X60–X84, Y10–Y34[1]
Accidents	V01–X59

1. Excludes Y33.9 where coroner's verdict was pending.

Analysis and outcome measures

Age-standardised mortality rates per 100,000, standardised to the European Standard Population, were calculated for each year for males and females separately, with 95 per cent confidence intervals. Rates were calculated for deaths from all causes combined, using a simple urban/rural dichotomy and by the six-class LSOA classification of the RUAC 2004.

Logistic regression analysis was performed using SPSS software to investigate the differences in mortality risk between rural and urban areas for all causes combined, and for the selected causes of death. Separate logistic regression analyses were carried out for England and Wales, males and females, and each cause of death. Both quinary age group and the urban/rural dichotomy were factors in the model, with the urban category as the baseline. The results for each logistic regression gave an estimated odds ratio, 95 per cent confidence interval and a p-value for each factor. The odds ratio for the rural/urban factor describes the rural/urban mortality difference, and an odds ratio of 0.78 for a specific cause can be interpreted as mortality being 22 per cent lower in rural compared to urban areas for that cause. To take account of area deprivation, these analyses were repeated including the deprivation quintile in the model. The effect of adjustment for deprivation on the odds ratios from these analyses was then examined.

A pragmatic approach has been taken in the interpretation of results, and differences of above 5 per cent were considered to be potentially important differences in public health terms, whilst those of 5 per cent or under were considered to be small differences.

Results

Age-standardised mortality rates for all-cause mortality

Table 3 shows the age-standardised mortality rates for all deaths per 100,000 population per year divided by country, sex and rural/urban class, with 95 per cent confidence intervals. All-cause mortality rates for males and females were found to be significantly lower in rural areas compared to urban areas of England and Wales, as shown in Figure 4. The rate for males in England was 692.7 per 100,000 in rural areas compared to 813.6 in urban areas, whilst rates were higher for Wales, with a rate of 776.5 in rural areas compared to 865.5 in urban areas. Overall, the difference between rural and urban areas was smaller for women than men.

The pattern of all-cause mortality rates across the six different rural and urban classes was slightly different for England and Wales, and for males and females (Figure 5). The rate for males in England was 664.1 per 100,000 in 'Village and dispersed – sparse' areas, 729.1 in 'Town and Fringe – sparse' areas, and 813.4 in 'Urban – less sparse' areas. Areas with settlement type 'Village and dispersed' had lower rates than those with settlement type 'Town and Fringe' in both England and Wales. Urban areas in England tended to have the highest rates, although this pattern was not as evident for Wales.

Table 3 Age-standardised mortality rates (all deaths) by country, sex and rural/urban class, 2002–04

England and Wales — Rate per 100,000

	Males			Females		
	Rate	Lower 95% confidence interval	Upper 95% confidence interval	Rate	Lower 95% confidence interval	Upper 95% confidence interval
England						
Urban – sparse	845.5	808.8	883.9	549.8	524.7	576.0
Urban – less sparse	813.4	811.3	815.6	557.5	555.9	559.0
Town and Fringe – sparse	729.1	706.9	752.0	515.6	499.4	532.3
Village and dispersed – sparse	664.1	646.5	682.2	446.1	433.3	459.3
Town and Fringe – less sparse	720.7	715.1	726.3	502.6	498.6	506.6
Village and dispersed – less sparse	666.4	661.0	671.9	487.3	483.2	491.3
All rural	692.7	689.0	696.5	492.9	490.2	495.6
All urban	813.6	811.4	815.7	557.5	555.9	559.0
Wales						
Urban – sparse	820.1	764.2	880.2	558.3	518.9	600.7
Urban – less sparse	867.0	856.9	877.2	595.7	588.6	602.9
Town and Fringe – sparse	816.5	780.7	854.0	565.5	539.8	592.3
Village and dispersed – sparse	709.2	687.4	731.7	499.2	482.9	516.0
Town and Fringe – less sparse	849.4	828.6	870.8	584.7	570.1	599.6
Village and dispersed – less sparse	731.0	707.1	755.7	524.9	507.3	543.2
All rural	776.5	764.4	788.8	544.9	536.2	553.8
All urban	865.5	855.5	875.5	594.4	587.4	601.5

Source: Death registrations 2002-04, Office for National Statistics Lower Super Output Area population estimates (unpublished)

Figure 4 Age-standardised mortality rates (all deaths) by country, sex and rural/urban dichotomy, 2002-04

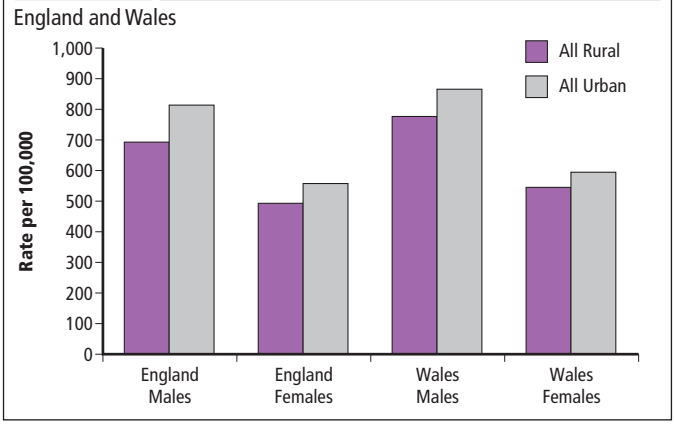
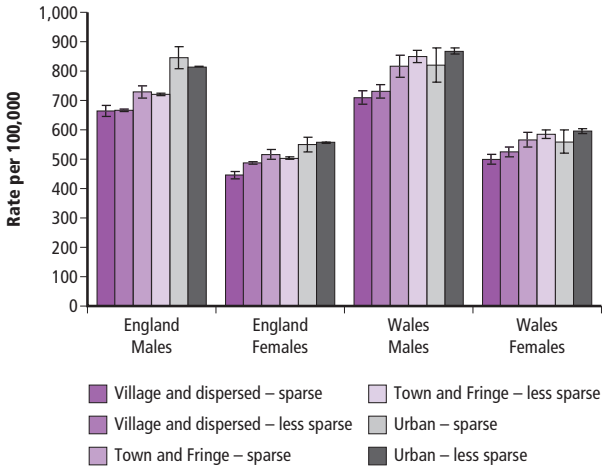


Figure 5 Age-standardised mortality rates (all deaths) by country, sex and rural/urban class, 2002–04



Logistic regression analysis

Table 4 shows the odds ratios and 95 per cent confidence intervals for rural and urban areas in England, for all deaths combined and each of the selected causes of death examined. These results are given with and without adjustment for deprivation. So, for all causes, the risk of death for males in rural areas was 0.85 that of males in urban areas (15 per cent lower) before adjustment for deprivation, and 0.97 that of males in urban areas (3 per cent lower) after adjustment. The difference between rural and urban areas was significant in both cases, although the difference after adjustment is considered a small difference in public health terms.

For females, the unadjusted mortality rate was 9 per cent lower in rural areas compared to urban areas, which was reduced by deprivation adjustment to only 1 per cent. The difference before adjustment for deprivation was statistically significant. The difference after adjustment of 1 per cent was not statistically significant, but the confidence interval of between 0 and 2 per cent is very narrow and reinforces the fact that the difference is very small.

In Wales, the risk of all-cause mortality for males was 10 per cent lower in rural areas compared to urban areas without adjustment for deprivation (Table 5). Once adjusted for deprivation, this difference was reduced to 5 per cent. For females, the corresponding mortality risk was 8 per cent lower in rural areas, which was reduced by deprivation adjustment to 4 per cent. These differences were statistically significant before and after adjustment. However, the remaining differences after adjustment, although slightly larger than for England, are also considered to be small.

The results for cancer and circulatory disease, particularly for England, were broadly similar to those for all causes, and the relevant odds ratios, confidence intervals and significance levels are shown in Table 4 for England and Table 5 for Wales. The remaining differences after adjustment for deprivation for cancer and circulatory disease for Wales, however, were not statistically significant and the confidence intervals were wider than for England because the population is much smaller.

Table 4 Odds ratios for mortality in rural areas relative to urban areas, before and after adjustment for deprivation, 2002–04

England

Cause of death	Males						Females					
	Before adjustment			After adjustment			Before adjustment			After adjustment		
	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval
All causes	0.85 [1]	0.84	0.86	0.97 [1]	0.96	0.98	0.91 [1]	0.90	0.92	0.99	0.98	1.00
Malignant neoplasm	0.88 [1]	0.86	0.89	0.96 [1]	0.94	0.98	0.91 [1]	0.90	0.93	0.98 [1]	0.96	1.00
Lung cancer	0.73 [1]	0.70	0.76	0.90 [1]	0.86	0.94	0.71 [1]	0.67	0.74	0.89 [1]	0.84	0.93
Respiratory disease	0.77 [1]	0.74	0.79	0.91 [1]	0.88	0.94	0.80 [1]	0.78	0.82	0.91 [1]	0.88	0.93
Circulatory disease	0.88 [1]	0.87	0.90	0.99	0.97	1.01	0.95 [1]	0.93	0.96	1.02 [1]	1.00	1.04
Suicide	0.90 [1]	0.82	0.98	1.12 [1]	1.02	1.24	0.88	0.75	1.02	1.01	0.86	1.19
Accidents	1.05	0.99	1.12	1.23 [1]	1.15	1.32	1.04	0.97	1.11	1.12 [1]	1.04	1.21

1 Statistically significant (p-value <0.05).

Table 5 Odds ratios for mortality in rural areas relative to urban areas, before and after adjustment for deprivation, 2002–04

Wales

Cause of death	Males						Females					
	Before adjustment			After adjustment			Before adjustment			After adjustment		
	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval	Odds ratios	Lower 95% confidence interval	Upper 95% confidence interval
All causes	0.90 [1]	0.87	0.93	0.95 [1]	0.92	0.99	0.92 [1]	0.89	0.95	0.96 [1]	0.93	1.00
Malignant neoplasm	0.91 [1]	0.85	0.96	0.95	0.89	1.02	0.94	0.89	1.01	0.98	0.91	1.04
Lung cancer	0.85 [1]	0.75	0.96	0.93	0.81	1.06	0.78 [1]	0.66	0.92	0.87	0.74	1.03
Respiratory disease	0.87 [1]	0.79	0.95	0.96	0.87	1.06	0.87 [1]	0.80	0.95	0.93	0.85	1.02
Circulatory disease	0.93 [1]	0.88	0.98	0.98	0.92	1.03	0.96	0.91	1.01	1.00	0.95	1.06
Suicide	0.96	0.74	1.25	1.04	0.79	1.36	1.16	0.73	1.85	1.27	0.78	2.07
Accidents	1.14	0.93	1.40	1.27 [1]	1.03	1.57	1.06	0.85	1.33	1.11	0.88	1.41

1 Statistically significant (p-value <0.05).

The widest rural/urban differences were observed for lung cancer and respiratory disease, where deprivation accounted for some, but not all, of the differences. Mortality from lung cancer in England was 27 per cent lower in rural areas than in urban areas for males, and 29 per cent lower for females. After adjustment for deprivation these differences were reduced to 10 per cent and 11 per cent respectively. Corresponding results for Wales were similar but not as marked, and the differences between rural and urban areas after adjustment were not statistically significant.

No clear pattern emerged from the suicide results. The overall numbers of suicides were very small, and only the differences for males in England were statistically significant. Mortality rates from suicide for males in England were 10 per cent lower in rural areas before adjustment for deprivation, but 11 per cent higher in rural areas after adjustment.

Mortality from accidents was not statistically different between rural and urban areas before adjustment for deprivation in either England or Wales. However, after adjustment, mortality was substantially higher in rural areas for both males and females in England, and for males in Wales. Mortality from accidents in rural areas of England was 23 per cent higher for males and 12 per cent higher for females after adjustment. There were only a small number of deaths from accidents in total for females in Wales, so although the odds ratio appears to increase after accounting for deprivation, the confidence intervals are very wide. As a broad pattern of effect of the adjustment for deprivation, it appears that mortality differences for accidents widen with adjustment for deprivation.

Discussion

Comparison to other studies

In general, previous studies have used different definitions of 'rural', different study populations, and have examined different geographical units. However, the general themes and outcomes have been compared where applicable.

Previous studies reported mortality rates generally being lower in rural than in urban areas. This was initially confirmed in this study, where standardised mortality rates were found to be lower in rural areas for all causes of death. The logistic regression analysis without adjustment for deprivation also found mortality to be lower in rural areas for all causes and for most specific causes. Some studies referred to a 'remote rural' or 'deeper rural' class, reporting that mortality for these classes was particularly low.[4,11,16] In this study, results for the six individual classes also revealed differences between the rural sub-classes, where 'Town and Fringe' areas for both England and Wales had higher rates than the 'Village and dispersed' areas. These definitions do not correspond directly to any classes used in the previous studies, but the findings give an indication of differing results when referring to distinct sub-classes rather than the rural/urban dichotomy.

Senior, Williams and Higgs[4] reported that when controlling for deprivation using the Carstairs and Townsend indices, mortality differences between rural and urban areas of Wales were considerably reduced. This is broadly consistent with the findings from the present study, where differences in mortality for all causes, cancer and

circulatory disease were mostly accounted for by deprivation, and only small residual differences remained.

The largest rural/urban differences were found for respiratory disease and lung cancer. Deprivation accounted for some of the differences but substantial differences remained. O'Reilly *et al*[15] also reported the widest differences for these two specific causes between rural and city areas in Northern Ireland, having adjusted for social class. They speculated that these differences may be related to air quality, or due to insufficient adjustment for deprivation due to its association to smoking. Law and Morris[16] also found excess deaths in urban areas compared to rural areas in England and Wales, particularly from lung cancer and chronic bronchitis and emphysema (part of respiratory disease group), and attributed these mainly to differences in smoking. Neither of these studies provided evidence for a direct link in their studies between rural/urban differences and smoking, but based this inference on the association between deprivation and smoking.

For suicides, only the rural/urban differences for males in England were statistically significant, where rates were lower in rural areas before adjustment for deprivation, but higher after adjustment, so reversing the finding in favour of urban areas. This pattern is unusual as unadjusted suicide rates are generally reported to be higher in rural areas, rather than lower. Levin and Leyland[17] reported that in Scotland the highest suicide risk was for 'remote rural' areas, while the risk was lower in 'accessible rural' areas compared to urban areas, with the lower risk in 'accessible rural' areas compared to urban areas persisting after adjustment for deprivation. Although the classes are not comparable to this study, the aggregated rural areas in England, and to a lesser degree in Wales, are dominated by the more numerous 'rural less sparse' areas. It is possible that results for the aggregated rural areas in the present study mask higher rates in the less numerous 'rural sparse' areas. Further detailed analysis of rural subclasses and perhaps patterns in age or deprivation groups would be required to allow a true comparison of results. Suicides in farmers have received much media attention, and analysis by occupation may be an area of further research, although, due to very small numbers of deaths, it may be unlikely to show statistically significant results.

Mortality from accidents was substantially higher in rural areas for males and females in England and males in Wales. O'Reilly *et al*[15] reported similar results, but due to the smaller sample in Northern Ireland their results were not statistically significant. Although not investigated separately in this study, road traffic accidents are an important part of accident mortality. A recent publication[18] reported that although road traffic collisions were more frequent in urban areas, due to greater traffic and population densities, injury severity and fatality was higher in rural areas. The report also suggested an association between pedestrian casualty rates and increasing deprivation.[18] Results from the present study suggested a widening of the difference when adjusting for deprivation. This could be explained by higher fatality in road traffic collisions in rural areas, coupled with both accident mortality being associated with deprivation and rural areas being classed as less deprived. Farming accidents could also contribute, but there is little evidence. Further research could include an investigation into different types of accidents and their specific association with deprivation.

Limitations of the analysis

This study uses an ecological study design and so is potentially subject to the ecological fallacy whereby associations at the population level do not necessarily represent associations at the individual level.[19] Whilst both sex and age are recorded for each individual in the mortality data, deprivation measures are area-based and are not linked to individuals. Findings from this type of study cannot be related to individuals but give indications of average outcomes for individuals within small areas.

This study is based on the RUAC 2004 on the assumption that the classification of areas is appropriate. A number of authors have discussed the shortcomings of previous classifications and the methodological problems of rurality as a concept.[3,13] Most of the study was concerned with investigating differences using the rural/urban dichotomy. There were differences in both the populations and mortality in the subclasses, and the rural/urban dichotomy may therefore mask some key distinctions between rural and urban areas, and within rural classes.[3] The analysis of mortality rates was performed using all classes but further regression analysis could be done by examining either all six classes, although some of the classes are relatively rare, or perhaps using aggregations of the rural classes by settlement type or sparsity.

There are a number of limitations to conventional area-based deprivation measures; many were described in a previous article on mortality and deprivation.[1] Rural areas are thought to be more heterogeneous than urban areas and, it is argued, deprivation is hidden by favourable averages.[11] Socio-economic circumstances and health outcomes even within small rural areas may vary greatly rather than being concentrated in, for example, deprived urban council estates or affluent suburbs. However, in the absence of individual-level data, the use of the small area LSOA geography for this analysis is a significant improvement on previous studies carried out at census ward level.

It is important to remember that premature death may be experienced in any area of England and Wales, rural or urban; in areas with a high or low average mortality; and areas classed as least or most deprived. Rural areas are reported to be more heterogeneous than urban areas, with people of diverse background, income level and health status living side by side.[11] This study used small area analysis, which is a significant improvement to previous studies. However, geographical aggregates, even in such small area units, may not capture all of the intricacies of diversity at the local level. The results of this study should therefore not be seen as contradicting findings of patterns of poor health that may exist in some sections of the rural and urban populations, which could be investigated if individual level data were available.

Some authors argue that selective migration of healthy and less healthy people contributes to the spatial distribution of health in rural and urban areas, referring to a tendency of healthier people to migrate and the less healthy to remain at home.[15] People may also migrate to gain better access to health or care services, and migration certainly is an important area of further research. Exposure to risk factors whilst living in a previous place of residence is equally not captured, as it is residence at time of death that is analysed, and may be particularly important for diseases with long lead times.

Conclusions

It is widely assumed that rural populations are inevitably healthier and that mortality is lower in rural areas. A number of studies have challenged this notion and found that the difference in distribution of socioeconomic circumstances largely explained most of these differences.

Although this study found some mortality differences between rural and urban areas for most causes, those for all-cause mortality, circulatory disease and cancer could largely be accounted for by deprivation, although small differences remained. This suggests that for these causes of death, rural populations were not found to be inherently 'healthier' but were similar to urban areas.

There were substantial residual differences after adjustment for deprivation for mortality from lung cancer and respiratory disease, where mortality was lower in rural areas. These deaths represent a sizable proportion of deaths in the population, and such large differences

are of major public health importance. Whether these differences are related to different smoking habits, air pollution or other factors needs further investigation. For these deaths, it could be argued, the notion of 'healthier' rural populations was confirmed.

Mortality due to accidents was found to be higher in rural areas after adjustment, possibly due to road traffic accidents. The pattern of mortality from suicide was less clear, but for males in England rates were also higher in rural areas compared to urban areas after adjustment for deprivation. This suggests that for deaths from accidents and suicide the result is reversed, and urban populations emerge as having lower rates.

There were also differences in all-cause mortality rates between the six rural and urban sub-classes, where the rural 'Village and dispersed' areas had lower mortality rates than the rural 'Town and Fringe' areas. This confirmed the differentiated nature of rural areas and perhaps the need for more detailed analysis of particular rural sub-classes.

This extensive study, using the rural and urban classification, relevant deprivation measures and small area geography, provides an update and significant methodological improvement to this research area. Whilst the greatest future benefit for research into rural health may now lie in the analysis of inequalities within rural areas, and understanding the specific problems and needs of those populations,[3] there is merit in considering the rural/urban context in the general drive of reducing health inequalities.

Key findings

- All-cause mortality of males in rural areas of England was 15 per cent lower than in urban areas, however, after adjustment for deprivation this difference was reduced to only 3 per cent
- For females in England, all-cause mortality in rural areas was 9 per cent lower than in urban areas; after adjustment for deprivation, there was no significant difference
- Patterns were similar in Wales, but with wider confidence intervals due to the smaller population
- Adjusting for deprivation also removed most of the rural/urban differences in mortality due to cancer and circulatory disease, and only small differences remained
- Rural 'Village and dispersed' areas had lower all-cause mortality rates than rural 'Town and Fringe' areas, whilst urban areas had the highest rates for England and Wales
- Mortality rates from lung cancer and respiratory disease were substantially higher in urban areas, before and after adjustment for deprivation, and are of significant public health concern
- Mortality rates for accidents were substantially higher in rural areas after adjustment for deprivation for both sexes in England and for males in Wales
- Results for suicides were less clear; for males in England rates were lower in rural areas before adjustment for deprivation and higher after adjustment

References

1. Romeri E, Baker A and Griffiths C (2006) 'Mortality by deprivation and cause of death in England and Wales, 1999–2003', *Health Statistics Quarterly* **32**, 19–43. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
2. Woods L M, Rachet B, Riga M *et al* (2005) 'Geographical variation in life expectancy at birth in England and Wales is largely explained by deprivation', *Journal of Epidemiology and Community Health* **59**, 115–20
3. Higgs G (1999) 'Investigating trends in rural health outcomes: a research agenda', *Geoforum* **30**, 203–21.
4. Senior M, Williams H and Higgs G (2000) 'Urban-rural mortality differentials: controlling for material deprivation', *Social Science & Medicine* **51**, 289–305.
5. Asthana S, Halliday J, Brigham P and Gibson A (2002) *Rural deprivation and service need: a review of the literature and an assessment of indicators for rural health service planning*, South West Public Health Observatory: Bristol.
6. Joseph Rowntree Foundation (2000) *Exclusive countryside? Social inclusion and regeneration in rural areas*, Joseph Rowntree Foundation, accessed 12 May 2008, available at: www.jrf.org.uk/knowledge/findings/foundations/pdf/760.pdf
7. Bibby P and Shepherd J (2004) 'Developing a new classification for urban and rural areas for policy purposes – the methodology'. Available on the National Statistics website at: www.statistics.gov.uk/geography/nrudp.asp
8. Noble M, Wright G, Dibben C *et al* (2004) *The Index of Multiple Deprivation 2004: Report to the Office of the Deputy Prime Minister*, Neighbourhood Renewal Unit: London.
9. National Assembly for Wales (2005) *The Welsh Index of Multiple Deprivation*, Local Government Data Unit, National Assembly for Wales: Cardiff.
10. Jordan H, Roderick P and Martin D (2004) 'The Index of Multiple Deprivation 2000 and accessibility effects on health', *Journal of Epidemiology and Community Health* **58**, 250–57.
11. Haynes R and Gale S (2000) 'Deprivation and poor health in rural areas: inequalities hidden by averages', *Health & Place* **6**, 275–85.
12. Farmer J, Baird A and Iversen L (2001) 'Rural deprivation: reflecting reality', *British Journal of General Practice* **51**, 486–91.
13. Martin D, Brigham P, Roderick P, *et al* (2000), 'The (mis)representation of rural deprivation', *Environment and Planning A* **32**, 735–51.
14. Gartner A (2007) *'Is there a difference in mortality between rural and urban areas in England and Wales?*', MPH thesis, Cardiff University.
15. O'Reilly G, O'Reilly D, Rosato M and Connolly S (2007) 'Urban and rural variations in morbidity and mortality in Northern Ireland', *BMC Public Health* **7**, no.123.
16. Law M and Morris J (1998) 'Why is mortality higher in poorer areas and in more northern areas of England and Wales?', *Journal of Epidemiology and Community Health* **52**, 344–52.
17. Levin K and Leyland A (2005) 'Urban/rural inequalities in suicide in Scotland', *Social Science & Medicine* **60**, 2877–90.
18. Lachowycz K and Brown P (2007) *A heavy toll. Road traffic collisions in the South West*, South West Public Health Observatory: Bristol.
19. Last J (2001) *A Dictionary of Epidemiology*, Oxford University Press: New York.

Geographical variations in deaths related to drug misuse in England and Wales, 1993–2006

Clare Griffiths, Ester Romeri and Anita Brock
Office for National Statistics

Oliver Morgan
Office for National Statistics and *Imperial College London*

Drug misuse is a significant public health issue in England and Wales. This article examines geographical variations in drug misuse mortality in England and Wales over the period 1993 to 2006. Geographical variations in deaths related to drug misuse have generally persisted over this period, one of substantial change in these deaths (with a peak in 2001 and numbers in 2006 being almost double those in 1993), although there were some significant changes to the regional level pattern. The regions with the highest mortality rates aggregated over the whole time period were the North West, Yorkshire and The Humber, and London, although by 2004/06 the rate in London was among the lowest and the rate in the North East was higher than the North West. Three Drug Action Teams (DATs), Brighton and Hove, Blackpool, and Camden, consistently had the highest drug misuse mortality rates. Urban areas tended to have the highest rates, but the rate in the most sparsely populated areas was similar to those of towns. The mortality rate in the most deprived parts of England and Wales was five times the rate in the least deprived areas. Areas with low rates were generally large, mostly rural areas, as well as areas in outer London and the south east of England.

Introduction

In the UK, possession and supply of substances considered drugs of misuse are controlled under the Misuse of Drugs Act 1971.[1] The Act defines three classes of controlled substances (A, B and C). In 1998, the Government published the UK Drug Strategy, *Tackling drugs to build a better Britain*,[2] subsequently updated in 2002.[3] In England, the strategy is delivered locally by 149 Drug Action Teams (DATs). In Wales, there are 22 Local Substance Misuse Action Teams (LSMATs). Government spending on tackling drug misuse has risen from £1 billion in 2002/03 to nearly £1.5 billion in 2005/06.[4]

About a third of all adults in England and Wales have used illicit drugs at least once in their lifetime and one in ten have used these drugs in the last year. Males are more than twice as likely to use drugs and reported recent problem drug use is highest among adults aged under 25, with almost a quarter having used drugs in the last year.[5] While cannabis is the most commonly used drug, problem drug use is a significant public health issue. It is estimated that the UK is the largest consumer of heroin in Western Europe[6] and is among the top four reporting countries for rates of injecting drug use.[7] There are an estimated 390,000 problem drug users, of which about 164,000 are regular injectors.[7]

The mortality rate for individuals who regularly use heroin and other illicit opiates is much greater than that for the general population[6,8] and in the UK, almost 70 per cent of deaths among opiate misusers are due to fatal poisoning.[8,9] Drugs of misuse are responsible for the majority of fatal poisoning deaths in England and Wales.[10] Reducing deaths related to drug misuse was included in the Government's ten-year strategy for tackling drug misuse.[2] In 2000, the Advisory Council on the Misuse of

Drugs (ACMD) published a report, *Reducing Drug Related Deaths*,[11] that fed into the ten-year strategy. In addition to several recommendations about the prevention of drug misuse deaths, the ACMD recommended that a better system for the surveillance of drug misuse deaths was needed. In response to this recommendation, a technical working group was set up, consisting of experts across government, the devolved administrations, coroners, toxicologists and drugs agencies.[12] The working group reviewed the system for collecting data on drug-related deaths and proposed an indicator for the surveillance of deaths related to drug misuse. The definition of the indicator is, 'deaths where the underlying cause is poisoning, drug abuse or drug dependence and where any of the substances controlled under the Misuse of Drugs Act (1971) are involved'.[13]

Previous analyses have shown that deaths related to drug misuse more than doubled from just over 800 in 1993 to a peak of 1,805 in 2001 and have since been at around the 1,500 mark.[10,14] Mortality rates were highest in young adults aged 20–39 and an increase in mortality rates within this group appears to have been the driver behind rising mortality during the 1990s.[15] Geographical variations in deaths related to drug misuse (looking particularly at heroin and methadone – the biggest killers among drugs of abuse) in England and Wales between 1993 and 1999 have been analysed previously using the Office for National Statistics (ONS) drug poisoning mortality database.[16] Mortality rates for heroin were highest in the North West and Yorkshire and The Humber regions and for methadone they were highest in the North West and London. Local authority areas with the highest mortality rates from heroin/morphine and methadone overdose were predominantly in urban areas, such as inner London boroughs and coastal or regional centres, for example Blackpool and Brighton and Hove. Since this analysis was published, there have been two developments: the UK definition of deaths related to drug misuse has been finalised, as described earlier, and a more complete version of the ONS database has been produced.[14] It is therefore timely to revisit the previous analysis, looking at all deaths from 1993, focussing on the drug misuse definition. In addition, as results from the 2001 Census have been published since the last analysis, it is possible to look at urban/rural and deprivation effects using more up-to-date data. We focus our local analyses on the DAT and LSMAT areas described above. This article presents geographical variations in mortality from drug misuse in England and Wales for 1993 to 2006.

Methods

Mortality data

ONS maintains a dedicated database of drug poisoning deaths in England and Wales registered since 1993.[10] Drug poisoning deaths are extracted from the national deaths database using specific International Classification of Diseases codes for the underlying cause of death. In addition to data supplied in the cause of death section of the coroner's death certificate, the database also contains textual information supplied voluntarily in confidence by coroners to ONS about circumstances of the death, which may include more detailed information about the substances involved.[17] We used the definition of drug misuse deaths described in the Introduction.

Population Estimates

The mortality rates in this article were calculated using revised population estimates for England and Wales, based on results from the 2001 Census.[18] Box One gives the dates these were published for the years covered by this article.

Box one

Publication dates for revised mid-year population estimates used in this article

Mid-year estimate	Published
1993–2000	October 2004
2001	September 2004
2002–06	August 2007

Geographical areas

We assigned deaths to four different geographies using the postcode of usual residence of the deceased – all deaths with a valid postcode were included in the analysis. Deaths throughout the period 1993 to 2006 were assigned to consistent local area boundaries. We examined a) the nine Government Office Regions of England, and Wales, b) DATs in England and LSMATs in Wales (equivalent to counties, unitary authorities, London boroughs and metropolitan county districts in England and unitary authorities in Wales), c) areas of material deprivation in England and Wales, and d) urban/rural areas in England and Wales.

Material deprivation was estimated using the Carstairs Index assigned at ward level. The Carstairs Index is an unweighted combination of four variables from the 2001 Census: unemployment, car ownership, overcrowding and social class.[19] We allocated wards to one of ten deprivation groups (deciles) by ranking wards according to their Carstairs score, calculating the cumulative population and grouping wards based on equal tenths of the cumulative population. The Carstairs Index was chosen above other possible indices of deprivation, including the Indices of Deprivation, for reasons which have been discussed in a previous paper.[19]

The urban and rural classification (2004) is based on hectare grid squares and the Office of the Deputy Prime Minister's defined settlement polygons.[20] The classification measures settlement form (dispersed dwellings, hamlet and village; small town; urban fringe; and urban) and sparsity (a score based on the number of households in the surrounding hectare squares). Wards are classified by aggregating the underlying hectare grid square classifications. We used three categories of settlement form: 1) urban areas (populations greater than 10,000 people); 2) small town and urban fringe; and 3) village, hamlet and isolated dwellings, each separated into sparse and less sparse, thus resulting in six categories for analysis.

Analysis

We calculated age-standardised mortality rates using the European standard population as the reference population. For Government Office Regions of England and for Wales, we calculated age-standardised mortality rates using three-year moving averages. For DAT and LSMAT areas, we calculated age-standardised mortality rates using data for 1993 to 2006 combined and for two time periods: 1993–99 and 2000–06. For individual DATs/LSMATs with the highest drug misuse mortality in 1993 to 2006 we also calculated trends in mortality rates, using age-standardised rates for three-year aggregates from 1993–95 to 2004–06. For deprivation deciles and urban/rural areas, we calculated age-standardised mortality rates for 1999 to 2003, because both of these measures were based on variables from the 2001 Census.

For confidentiality reasons, DATs/LSMATs with fewer than three deaths in the periods 1993–99 and 2000–06 were excluded.[21] We did not calculate age-standardised rates for areas with fewer than ten deaths, as in previous analyses for local areas.[22,23]

Within small populations, the number of deaths may be subject to random variation. Therefore, 95 per cent confidence intervals have been calculated for all rates presented in this article using standard methods.[24]

Map

We created a map to show where death rates in DATs/LSMATs were above or below the England and Wales rate, based on the ratios divided into bands, as described in Box Two. The map has coloured hues for higher ratios and grey hues for lower ratios – the depth of shading indicating the extent of the difference. The white areas are where the rate was less than 25 per cent higher or lower than the overall England and Wales rate, and the cross-hatched areas are those where there were fewer than ten deaths across each period and which were therefore excluded from the analysis.

Results

Between 1993 and 2006 there were 15,428 registered deaths related to drug misuse among males and 4,133 among females in England and Wales. For both males and females, the North West had the highest mortality rates, with Yorkshire and The Humber and London also having rates significantly higher than the England and Wales overall rate – London had the second highest rate for females, whereas for males this was found in Yorkshire and The Humber. The lowest rates for both sexes were in the East and West Midlands, and East of England regions (Table 1).

Figure 1 presents trends by region for all persons. For clarity, the figure has been split into two charts, covering the northern and midlands regions, and Wales and southern and eastern regions. In all regions there was an increase in the early part of the period, happening from a higher starting point in the North West and London. In all regions except the West Midlands, there was a peak and then subsequent decline; this peak was earliest in London and latest in the North East and Wales. In London, there was a large decline following the peak in the late 1990s, whereas in Yorkshire and The Humber, the decline was small – meaning that Yorkshire and The Humber had the highest rate by the end of the period. The prolonged increase in the North East meant it had the second highest rate by 2004/06, with the North West having the third highest rate. In some regions there was a further increase at the end of the period, particularly in London. However, the rate in London remained among the lowest in England in 2004/06 and was lower than the England and Wales rate from the early 2000s. In the West Midlands, the mortality rate was highest at the end of the period, rather than earlier as in other regions (Figure 1).

Looking at the urban-rural breakdown, the lowest mortality rate was found in the village, hamlet and isolated dwelling – less sparse areas and the highest rates in urban areas. The rate for village, hamlet and isolated dwellings – sparse areas was as high as those for town and fringe areas (Figure 2). The rate in the most deprived areas was five times higher than that in the least deprived, with rates steadily increasing as deprivation levels increased (Figure 3).

Looking at the pattern for DAT and LSMAT areas, those with high mortality rates were generally located in central London, some coastal areas, many areas in the North West and some areas in the North East and Yorkshire and The Humber regions as well as north Wales. Areas with low rates were generally large, mostly rural DATs/LSMATs, located across Wales and central England as well as DATs in outer London and the south east of England (Map 1).

Box two

Map

Map 1 shows the ratio of the drug misuse death rate for persons in each DAT and LSMAT area in England and Wales to the overall England and Wales rate for the period 1993 to 2006 combined.

The colouring is based on five intervals as defined by values of 25 per cent and 50 per cent or more above or below the overall England and Wales rate as shown below:

Colour	Min ratio value	Max ratio value	Legend label
	1.50	–	50 per cent or more higher
	1.25	1.49	25–49 per cent higher
	0.76	1.24	Less than 25 per cent higher or lower
	0.51	0.75	25–49 per cent lower
	0.00	0.50	50 per cent or more lower
			Fewer than 10 deaths

Table 1 Number of deaths and age-standardised rates for deaths related to drug misuse by sex, 1993 to 2006 combined

Government Office Regions of England, Wales

Area	Males				Females			
	Rate per 100,000 population	Lower 95% confidence interval	Upper 95% confidence interval	Number of deaths	Rate per 100,000 population	Lower 95% confidence interval	Upper 95% confidence interval	Number of deaths
North East	41.4	38.5	44.6	713	10.8	9.4	12.5	201
North West	54.3	52.2	56.4	2,523	13.8	12.8	14.9	676
Yorkshire and The Humber	53.1	50.7	55.6	1,829	11.7	10.6	12.8	431
East Midlands	30.9	28.9	33.0	895	7.6	6.7	8.7	237
West Midlands	33.2	31.4	35.1	1,205	7.8	6.9	8.7	303
East of England	33.3	31.5	35.2	1,240	9.0	8.1	10.0	364
London	45.3	43.6	47.2	2,581	12.3	11.4	13.2	697
South East	36.0	34.5	37.7	1,990	10.0	9.2	10.9	597
South West	44.4	42.2	46.8	1,451	9.7	8.7	10.8	363
Wales	40.4	37.6	43.3	765	9.7	8.4	11.2	200
England and Wales[1]	42.2	41.5	42.8	15,428	10.6	10.3	11.0	4,133

1 Figures for England and Wales include deaths to non-residents. The separate figures include only deaths to residents of those regions.

Figure 1 Age-standardised rates for deaths related to drug misuse, Government Office Regions in England and Wales, three-year moving averages from 1993–95 to 2004–06

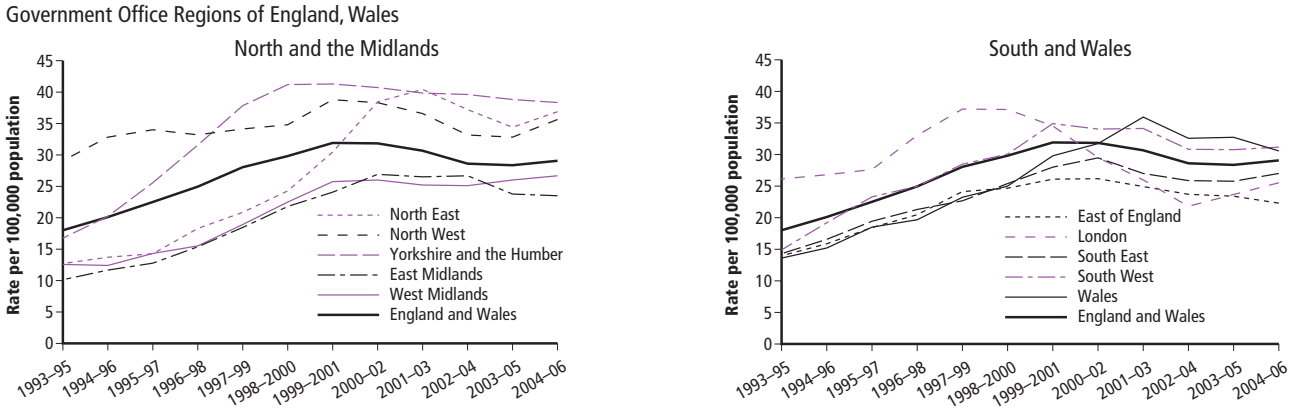


Figure 2 Age-standardised rates (with 95 per cent confidence intervals) for deaths related to drug misuse by urban and rural area classification, 1999–2003

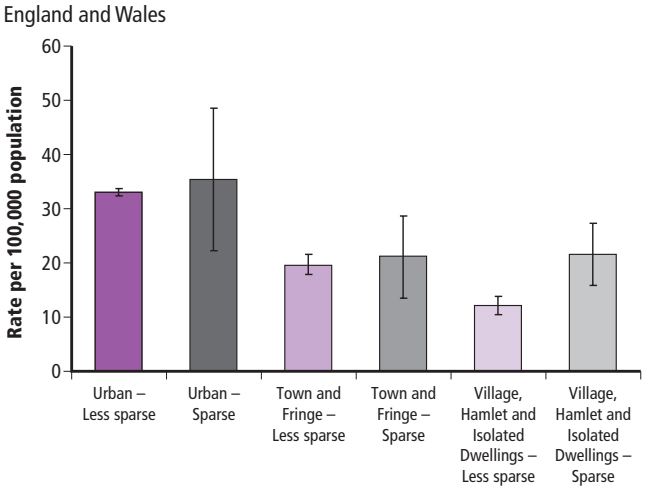
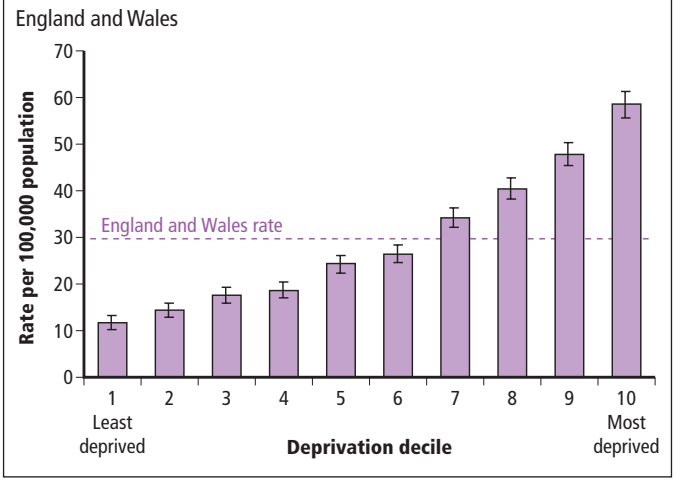


Figure 3 Age-standardised rates (with 95 per cent confidence intervals) for deaths related to drug misuse by deprivation decile, England and Wales, 1999–2003



The three areas with the very highest rates were the same in 1993–99 and 2000–06: Blackpool, Brighton and Hove, and Camden, although Brighton and Hove had the highest rate in 1993–99 (Table 2), whereas Blackpool had the highest rate in 2000–06 (Table 3). Many areas in London that were in the top ten highest rates in 1993–99 were no longer among these areas in 2000–06. Areas in the North East and Yorkshire and The Humber replaced these areas – Hartlepool, Kingston-upon-Hull, Middlesbrough, and North East Lincolnshire. Only one area in Wales was in the areas with the highest rates in either of the two time periods. This was Denbighshire, ranked fourth in 2000–06 and 12th in 1993–99.

We also looked at trends for Brighton and Hove, Blackpool, and Camden using data aggregated for three-year periods (data not shown). In all three areas there was evidence of a decline following the high rates of the late 1990s to early 2000s, but this appeared to have halted in the most recent periods in Blackpool and Camden.

Discussion

Main findings

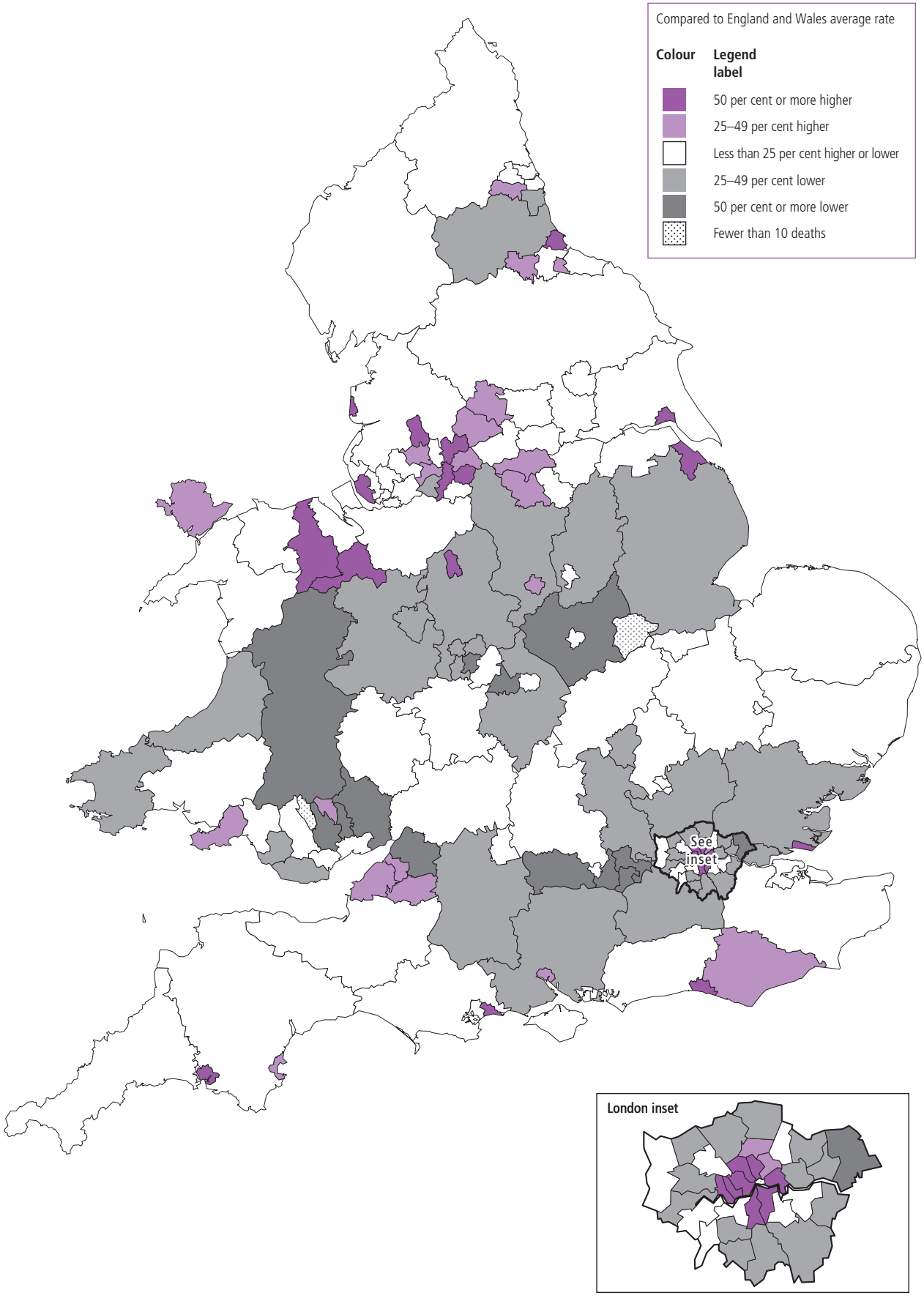
We report geographical variations in deaths related to drug misuse that have persisted over the period 1993 to 2006, a period of substantial change in these deaths (with a peak in 2001 and numbers in 2006 being almost double those in 1993), although there were some significant changes at regional level. The regions with the highest mortality rates over the whole time period were the North West, Yorkshire and The Humber, and London, although by 2004/06 the rate in London was among the lowest and the rate in the North East was higher than the North West. The peak in mortality rates of the late 1990s to early 2000s happened at different times in different regions, earliest in London and latest in the North East and Wales. The pattern for the West Midlands was different again, with the rate being highest at the end of the period.

Three DATs, Brighton and Hove, Blackpool, and Camden, have consistently had the highest drug misuse mortality rates and although there was some evidence of a decline following the peak in the late 1990s to early 2000s, this may have stopped in the most recent years. Urban areas tended to have the highest rates, but there was little difference between the most sparsely populated areas and towns. The death rate in the most deprived parts of England and Wales was five times that of the least deprived. Areas with low rates were generally large mostly rural DATs/LSMATs as well as DATs in outer London and the south east of England.

Interpretation and comparison with other studies

At the population level, deaths related to drug misuse are a product of the size of the drug using population (that is, the population at risk) and the risk of fatal poisoning among drug users (that is, case fatality rate). Risk of drug-related overdose tends to increase with age and duration of dependence.[25] Previous analysis suggested it was likely that the size of the drug-using population was behind recent trends in deaths related to

Map 1 **Mortality due to drug misuse by local area[1], 1993 –2006, England and Wales**



1 Counties, unitary authorities, metropolitan districts and London boroughs. Note that information for Cornwall does not include Isles of Scilly.

Table 2 DAT and LSMAT areas[1] with the highest rates for deaths related to drug misuse, 1993–99[2]

England and Wales

Rank 1993–99	Country	DAT and LSMAT areas	Rate per 100,000 population	Lower 95% confidence interval	Upper 95% confidence interval	Number of deaths	Rank 2000–06
1	England	Brighton and Hove	102.4	88.7	118.1	196	2
2	England	Blackpool	96.0	78.3	117.6	96	1
3	England	Camden	95.1	80.6	112.2	152	3
4	England	Westminster	74.5	61.5	90.1	115	15
5	England	Manchester	71.8	62.7	82.1	225	13
6	England	Bournemouth	65.9	52.1	83.3	73	8
7	England	Islington	62.7	50.4	78.2	88	22
8	England	Lambeth	62.4	52.5	74.1	147	10
9	England	Hammersmith and Fulham	61.0	48.3	77.1	80	20
10	England	Kensington and Chelsea	59.2	46.5	75.4	70	49

1 DATs (Drug and Alcohol Action Teams) in England and LSMATs (Local Substance Misuse Action Teams) in Wales are equivalent to Counties and Unitary Authorities.
2 DAT and LSMAT areas with fewer than 10 deaths related to drug misuse in this period have been excluded.

Table 3 DAT and LSMAT areas[1] with the highest rates for deaths related to drug misuse, 2000–06[2]

England and Wales

Rank 2000–06	Country	DAT and LSMAT areas	Rate per 100,000 population	Lower 95% confidence interval	Upper 95% confidence interval	Number of deaths	Rank 1993–99
1	England	Blackpool	120.6	99.8	145.8	110	2
2	England	Brighton and Hove	112.1	97.9	128.2	220	1
3	England	Camden	83.4	69.9	99.5	138	3
4	Wales	Denbighshire	78.4	58.7	104.6	47	12
5	England	Hartlepool	75.7	56.0	102.1	44	36
6	England	Kingston Upon Hull, City	74.0	62.6	87.5	138	59
7	England	Middlesbrough	68.2	53.6	86.9	67	149
8	England	Bournemouth	66.6	53.0	83.8	74	6
9	England	North East Lincolnshire	59.3	45.9	76.6	60	15
10	England	Lambeth	58.3	48.2	70.4	127	8

1 DATs (Drug and Alcohol Action Teams) in England and LSMATs (Local Substance Misuse Action Teams) in Wales are equivalent to Counties and Unitary Authorities.
2 DAT and LSMAT areas with fewer than 10 deaths related to drug misuse in this period have been excluded.

drug misuse.[15] A recent study estimating the prevalence of problematic drug use by DAT area in England[26] showed patterns that were similar but not identical to the patterns seen in our analysis, although the study mapped numbers of problematic drug users and did not relate this to the size of the population in each DAT.

Information on risk of death in drug users is even more difficult to obtain than the size of the population of drug users. Apart from small-scale pilot studies, no national data on trends in mortality risk among problem drug users have been available since 1993.[27] Hence, it is difficult to assess whether the geographical patterns seen are related to differences in the risk of death, or changes in the prevalence or pattern of problem drug use. If the size of the drug-using population is driving the patterns of mortality then it is likely that risk of death in addicts is similar across the country, but this cannot currently be measured.

Deaths involving heroin tend to drive drug misuse mortality patterns.[15] Previous analyses have shown that deaths involving heroin tend to follow the patterns of supply of the drug, in that as the amount of heroin available increases, so do deaths.[28] It could be therefore that these geographical patterns are also indicating patterns of supply and demand. Indeed, a study commissioned by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) to look at methods of estimating prevalence of drug use, at country level, used information on possession and supply of drugs as well as deaths.[29] The multiple indicator method, also used recently to estimate prevalence for DATs,[26] used a variety of indicators including drug possession and supply offences, arrest referrals, people recorded in drug treatment databases, methadone prescriptions, drug-related hospital episodes, drug-misuse-related deaths and deprivation to produce estimates of drug users. The work concluded that although this type of analysis could not take account of specific local factors, it was likely to produce accurate estimates of drug users. The implication of this is that death rates are linked to supply and demand. However, this hypothesis needs further consideration.

Previous analysis showed that common characteristics of local areas with high drug misuse mortality included a high proportion of unemployed, living in either social or terraced housing and a high proportion of the population in partially-skilled and unskilled manual occupations.[16] This is consistent with the results of our deprivation analysis and with other findings that drug-related poisoning deaths are more common among the unemployed, deprived and unskilled workers.[11] The deprivation results reflect results of other studies that have shown that drug users in deprived areas are less likely to get care or receive treatment. In addition, the chances of overcoming drug problems are lower among people who are disadvantaged, as they have fewer positive alternatives and reduced access to meaningful employment, better housing and so on.[30]

Strengths and limitations

The ONS drug poisoning mortality database is a uniquely rich source of drug poisoning mortality data. At a national level, it systematically includes and codes textual information from the coroner's death certificate that can be used to identify specific substances beyond the level of detail given by using International Classification of Diseases codes alone, the usual method for analysing mortality statistics. Surveillance of deaths related to drug misuse is important for measuring the success of interventions and for planning future harm-minimisation strategies. The headline indicator of deaths related to drug misuse is a useful tool as it gives a single combined figure for deaths involving a range of substances. Because it captures acute

poisoning deaths, it should respond rapidly to prevention initiatives. It also provides a useful measure of overall mortality burden in the population.

Although routinely collected mortality data provide the most complete dataset on deaths related to drug poisoning in England and Wales, they must be interpreted with caution as information on the death certificate is not recorded for epidemiological purposes and measurement of deaths related to drug misuse alone does not provide information about the reasons behind the trends identified. In addition, not all deaths attributable to drug misuse may be captured.[17] In England and Wales, post-mortem toxicological investigations are not standardised and coroners report inconsistently, some mentioning a large number of substances and others mentioning only substances they consider to have directly caused the death;[31] this could lead to area bias in the results. About 10 per cent of deaths in the ONS database have no specific substance mentioned,[10] and thus the overall number of deaths related to drug misuse may be underestimated. Where multiple substances are mentioned, however, it may not be possible to identify which substance was the principal cause of poisoning. However, these deaths would be included in the headline indicator of deaths related to drug misuse if any of the drugs mentioned were controlled substances.

Another important limitation is the lack of data on the size of population at risk, that is drug users, as described in the interpretation section.

Conclusion

Mortality related to drug misuse remains an important public health issue in England and Wales. Our analysis has demonstrated geographical variations in deaths related to drug misuse that warrant further attention. More in-depth analyses of how mortality varies by sex and age group, as well as deprivation, within regions could inform this. Meaningful interpretation of mortality data to plan effective strategies to reduce the number of deaths related to drug misuse also depends on understanding the size of the drug using population and the risk of fatal poisoning among drug users. Studies of mortality risk among the drug-using population are needed to provide this interpretation.[32]

Acknowledgements

The map was produced by colleagues in ONS Geography.

Key findings

- The regions with the highest drug misuse mortality rates over the whole time period were the North West, Yorkshire and The Humber, and London
- However, trends over time differed between regions and by 2004/06 London had among the lowest rates, with Yorkshire and The Humber, the North East and North West having the highest rates
- Drug misuse mortality rates were highest in urban areas, although the rate in the most sparsely populated areas was similar to those in towns
- In the most deprived areas, the death rate related to drug misuse was five times higher than in the least deprived
- Three Drug Action Team areas – Brighton and Hove, Blackpool, and Camden – have consistently had the highest drug misuse mortality rates across the period
- Areas with low rates were generally large mostly rural areas, as well as those in outer London and the south east of England

References

1. *The Misuse of Drugs Act 1971*. The Stationery Office: London.
2. United Kingdom Anti-Drugs Co-ordination Unit (UKADCU) (1998) *Tackling drugs to build a better Britain*, The Stationery Office: London.
3. Drugs Strategy Directorate (2002) *Updated Drug Strategy,* Home Office: London.
4. Home Office (2006) *Drug Strategy: Funding*, accessed 17 July 2008, available at: http://web.archive.org/web/20070807135031/http://www.drugs.gov.uk/drug-strategy/funding/
5. Eaton G, Davies C, English L *et al* (eds) (2007) United Kingdom drug situation: annual report to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) 2007. Department of Health: London. Accessed 18 July 2008, available at: www.ukfocalpoint.org.uk/web/Publications201.asp
6. Bargagli A M, Hickman M, Davoli M *et al* (2006) 'Drug-related mortality and its impact on adult mortality in eight European countries', *European Journal of Public Health* **16**, 198–202.
7. European Monitoring Centre for Drugs and Drug Addiction (2007) *The State of the Drugs Problem in Europe. Annual Report 2007*, accessed 18 July 2008, available at: www.emcdda.europa.eu/html.cfm/index44682EN.html
8. Hulse G K, English D R, Milne E and Holman C D J (1999) 'The quantification of mortality resulting from the regular use of illicit opiates', *Addiction* **94**, 221–29.
9. Gossop M, Stewart D, Treacy S and Marsden J (2002) 'A prospective study of mortality among drug misusers during a 4-year period after seeking treatment', *Addiction* **97**, 39–47.
10. Office for National Statistics (2007) 'Report: deaths related to drug poisoning: England and Wales, 2002–06', *Health Statistics Quarterly* **36**, 66–72. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
11. Advisory Council on the Misuse of Drugs (2000) *Reducing Drug Related Deaths*, The Stationery Office: London.
12. Department of Health (2001) *The Government Response to the Advisory Council on the Misuse of Drugs Report into Drug Related Deaths*, The Stationery Office: London.
13. Office for National Statistics (2002) 'Report: deaths related to drug poisoning: results for England and Wales, 1993–2000', *Health Statistics Quarterly* **13**, 76–82. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
14. Office for National Statistics (2007) 'Report: deaths related to drug poisoning: England and Wales, 1993–2005', *Health Statistics Quarterly* **33**, 82–88. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
15. Morgan O, Griffiths C, Toson B *et al* (2006) 'Trends in deaths related to drug misuse in England and Wales, 1993–2004', *Health Statistics Quarterly* **31**, 23–27. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
16. Uren Z (2001) 'Geographical variations in deaths related to drug misuse in England and Wales, 1993–99', *Health Statistics Quarterly* **11**, 25–35. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
17. Christophersen O, Rooney C and Kelly S (1998) 'Drug-related Mortality: methods and trends', *Population Trends* **93**, 29–37.
18. Office for National Statistics (2007) Latest Population Estimates Data. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=601
19. Morgan O and Baker A (2006) 'Measuring deprivation in England and Wales using 2001 Carstairs scores', *Health Statistics Quarterly* **31**, 28–33. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725

20. Bibby P and Shepherd J (2004) Developing a new classification of urban and rural areas for policy purposes: the methodology. Available on the National Statistics website at: www.statistics.gov.uk/geography/downloads/Methodology_Report.pdf
21. Office for National Statistics (2008) *Briefing Note: ONS policy on protecting confidentiality within birth and death statistics (Revised 2008)*. Available on the National Statistics website at: www.statistics.gov.uk/downloads/theme_health/ConfidentialityBirth&Death.pdf
22. Brock A, Baker A, Griffiths C *et al* (2006) 'Suicide trends and geographical variations in the United Kingdom, 1991–2004', *Health Statistics Quarterly* **31**, 6–22. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
23. Breakwell C, Baker A, Griffiths C *et al* (2007) 'Trends and geographical variations in alcohol-related deaths in the United Kingdom, 1991–2004', *Health Statistics Quarterly* **33**, 6–24. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
24. dos Santos Silva I (1999) 'Appendix 6.1: Confidence intervals and significance tests for epidemiological measures', In *Cancer Epidemiology: Principles and Methods*. International Agency for Research on Cancer; Lyon, France.
25. White J and Irvine R (1999) 'Mechanisms of fatal opioid overdose'. *Addiction* **94**, 961–72.
26. Frisher M, Heatlie H and Hickman M (2006) 'Prevalence of problematic and injecting drug use for Drug Action Team areas in England', *Journal of Public Health* **28**, 3–9, accessed 17 July 2008, available at: http://jpubhealth.oxfordjournals.org/cgi/content/full/28/1/3
27. Ghodse H, Oyefeso A and Kilpatrick B (1998) 'Mortality of drug addicts in the United Kingdom 1967–1993', *International Journal of Epidemiology* **27**, 473–78.
28. Morgan O, Griffiths C and Hickman M (2006) 'Association between availability of heroin and methadone and fatal poisoning in England and Wales 1993 to 2004', *International Journal of Epidemiology* **35**, 1579–85.
29. European Monitoring Centre for Drugs and Drug Addiction (1999) *Study to obtain comparable national estimates of problem drug use prevalence for all EU member states*, European Monitoring Centre for Drugs and Drug Addiction: Lisbon.
30. Advisory Council on the Misuse of Drugs (1998) *Drug Misuse and the Environment*, The Stationery Office: London.
31. Hickman M, Carrivick S, Paterson S *et al* (2007) 'London audit of drug-related overdose deaths: characteristics and typology, and implications for prevention and monitoring', *Addiction* **102**, 317–23.
32. Hickman M, Carnwath Z, Madden P *et al* (2003) 'Drug-related mortality and fatal overdose risk: pilot cohort study of heroin users recruited from specialist drug treatment sites in London', *Journal of Urban Health* **80**, 274–87.

Birthweight and gestational age by ethnic group,England and Wales 2005: introducing new data on births

Kath Moser
Office for National Statistics

Kristina M Stanfield and David A Leon
London School of Hygiene and Tropical Medicine

Low birthweight babies and babies born preterm are at increased risk of morbidity and mortality in the first year of life, as well as in the longer term. Since information on ethnic group is not recorded at birth registration in England and Wales, it has not been possible to produce routine statistics on birthweight or gestational age by ethnic group. A new system, introduced in 2002, for allocating NHS numbers at birth (NN4B) provided the opportunity to obtain ethnic group information. The NN4B record includes information on the ethnic group of the baby classified according to the 2001 Census categories. This paper presents the first analyses of ethnic differences in birthweight and gestational age at birth for England and Wales as a whole. Utilising NN4B records linked with birth registration records for all births occurring in England and Wales in 2005, birthweight and gestational age distributions, including the percentages low birthweight and preterm, are compared between ethnic groups. The paper also examines how parental socio-demographic circumstances vary by ethnic group.

Introduction

Birthweight has been recorded as part of standard clinical practice in countries such as those of the UK for over a century. Aside from their clinical utility these data have been used as an indicator of social and economic development of populations.[1] Low birthweight has received particular attention as a powerful predictor of infant death, especially in the neonatal period.[2,3,4] Gestational age at birth is highly correlated with birthweight and babies born preterm are at increased risk of morbidity and mortality in the first year of life,[5,6] as well as in the longer term.[7] In addition, over the past 20 years there has been increasing interest in birthweight[8,9] and gestational age[10] as predictors of risk of some adult diseases.

Routinely collated national data on birthweight, gestational age and other key perinatal and obstetric variables have been available for many years in Nordic countries such as Sweden.[11] In the UK, the earliest comprehensive population-based data collection was initiated in the late 1940s by Dugald Baird who established the Aberdeen Maternity and Neonatal Databank,[12] which is still in existence. The Scotland-wide SMR2 maternity record system has collected birthweight and gestational age data since the 1970s. However, as described by Macfarlane and Mugford,[13] while routine collection of birthweight data in England and Wales started after the Second World War, it was only from 1975 that the Office of Population Censuses and Surveys (the predecessor of the Office for National Statistics (ONS)) included birthweight on all registrations of live births. However, 2005 was the first year for which statistics on gestational age for all births in England and Wales became available.[14,15]

In 2001 one in eight people in England and Wales belonged to an ethnic group other than White British.[16,17] However, neither the ethnic group of parent nor child is collected when a birth is registered, which means that until now there have been no routine statistics for England and Wales as

a whole on birth outcomes by ethnicity. This represents an important gap in our capacity to monitor and study the perinatal and infant health and welfare of different ethnic groups. It should be noted that while routine data on birthweight and infant mortality according to the mother's country of birth do exist, this is not the same as looking at ethnic variation.[18,19]

Despite the absence of routine statistics on ethnicity at birth, there have been a number of ad hoc studies of birthweight and gestational age in relation to ethnicity based on hospital or regional populations or national samples.[20,21,22,23,24,25,26,27] These include analyses of representative samples of UK populations, including the ONS Longitudinal Study – a 1 per cent sample of the population of England and Wales – which has been used to study ethnic differences in birthweight[25] in which ethnicity of the mother was determined from Census data. The Millennium Cohort Study – a sample of live births delivered in the UK in 2000/1 – has also been used to look at ethnic differences in size at birth.[26] What is evident from these various studies is that there are systematic variations in birthweight and gestational age between ethnic groups in Britain. However, many of these studies were of insufficient size for estimating birthweight or gestational age for specific ethnic minority groups, and few were based on nationally representative samples.

This paper uses a new dataset covering all births in England and Wales making it possible to look at ethnic differences in birth outcomes for the first time. First, the source of these new data is described, followed by an examination of ethnic differences in birthweight and gestational age for babies born in 2005.

Methods

Data sources

Each individual registered with the National Health Service has a unique NHS number. Until 2002 this was allocated when the birth was registered, which could have been up to 6 weeks after birth. However, since 2002 the NHS number has been allocated at birth for all babies born in England, Wales and the Isle of Man. This involves electronic notification of each birth to the Central Issuing System which allocates NHS numbers.[28] Through this system key birth notification details are collected centrally on what is known as the NHS Numbers for Babies (NN4B) dataset. This includes ethnicity, as well as gestational age, another data item not collected (for live births) at registration. For all NHS numbers issued since the beginning of 2005, ONS has been receiving a subset of the variables contained in this dataset.

Using the NN4B dataset it has become possible to produce a range of statistics on births in England and Wales for the first time. Statistics on the distribution of live births by multiplicity and gestational age were released in 2007[15] with more extensive gestational age statistics published in early 2008.[14] Gestation-specific infant mortality rates for England and Wales as a whole, including in relation to social and biological factors, have also recently been published[5] and statistics on infant mortality by ethnic group were released in June 2008.[29]

As NN4B records include NHS number it is possible to link them with other datasets containing NHS number. The data used in the analysis presented in this paper are from a linkage of routine birth registration records for babies born in England and Wales in 2005 with NN4B records. The extract of birth registration data for 2005, taken in August 2006, included 649,371 births. Of these, 648,421 (99.9 per cent) were successfully linked to an NN4B record using the methods developed for the pilot linkage of births in the first quarter of 2005, described in detail elsewhere.[30] The quality and completeness of the NN4B dataset has been shown to be generally good.[14]

Approval for the use of these data sources for linkage and the production of statistical data was given by the North East London Ethics Committee. The Patient Information Advisory Group agreed to the granting of cover under section 60 of the Health and Social Care Act 2001.

Ethnic group

The NN4B record requests information on the 'ethnic category (baby) as defined by the mother' using specified categories (Box One) which match those used in the 2001 Census. Most of the analysis in this paper focuses on the larger and more clearly defined categories, that is, three Asian or Asian British groups (Bangladeshi, Indian and Pakistani), two Black or Black British groups (African, Caribbean), White British, plus a White Other (including White Irish) and an 'All Others' group, the latter including Chinese, Other Asian, Other Black, Other, and all Mixed groups. We use White British as the reference group. Although the NN4B data specification asks for the baby's ethnic group as defined by the mother, it is unclear whether in practice this is what is actually recorded by the health professional notifying the birth. It is possible that the mother's ethnic group is recorded rather than the baby's and that the health professional decides what to record rather than asking the mother.

As this is the first time this ethnic group information has been used, to assess its quality, the ethnic group distribution of the linked birth registration-NN4B dataset was compared against ethnic group data from the Maternity Hospital Episode Statistics (HES). However, in order to fully validate the data on ethnicity an ad hoc study is clearly required to establish whose ethnic group is recorded, and whether the mother or the health professional supplies the information.

Box one

Ethnic group categories

Used in NN4B dataset	Collapsed categories sometimes used in this paper
White	
British	White British
Irish	White Other
Any other White background	White Other
Mixed	
White and Black Caribbean	All Others
White and Black African	All Others
White and Asian	All Others
Any other mixed background	All Others
Asian or Asian British	
Indian	Asian or Asian British, Indian
Pakistani	Asian or Asian British, Pakistani
Bangladeshi	Asian or Asian British, Bangladeshi
Any other Asian background	All Others
Black or Black British	
Caribbean	Black or Black British, Caribbean
African	Black or Black British, African
Any other Black background	All Others
Other ethnic groups	
Chinese	All Others
Any other ethnic group	All Others
Not stated	Not stated

Statistical analysis

A summary of the 2005 birth records is shown in Table 1. In this paper the word 'birth' refers to a baby. 'All births' includes babies which are born alive or stillborn, and which are singleton, twin, triplet or from a higher order birth. Information on whether a birth is live or stillborn, is a singleton or multiple, together with information on birthweight, maternal age, marital

Table 1 **Birth records in 2005: summary of counts**

England and Wales

	Number	Percentage
Birth registration records: all births (live and stillbirths)	**649,371**	
linked to an NN4B record	648,421	99.9 per cent of all births
not linked to an NN4B record	950	
live births	645,887	99.5 per cent of all births
stillbirths	3,484	
singleton births	630,139	97.0 per cent of all births
multiple births	19,232	
Birth registration records: live singletons	**626,917**	
linked to an NN4B record	626,066	99.9 per cent of live singletons
not linked to an NN4B record	851	
with known gestational age	621,793	99.2 per cent of live singletons
not known gestational age[1]	5,124	
with stated birthweight	624,821	99.7 per cent of live singletons
not stated birthweight	2,096	

1 See Methods.

status/registration type, and National Statistics Socio-economic Classification (NS-SEC) based on paternal occupation, is taken from the birth registration data. Birthweight is one of several data items also collected in the NN4B data. However, the birthweight distributions of live births agree closely between the registration and NN4B data except for a higher proportion of births weighing 1–499g in the NN4B data.[14] The pilot linkage[30] showed 98.6 per cent of linked birth records were in the same 500g birthweight group according to both sources. Information on ethnic group and gestational age comes from NN4B data and is therefore only available for birth registrations which have linked to an NN4B record.

The analysis is undertaken in three stages. **Section A** examines the distribution of all births by ethnic group. It investigates how maternal age, marital status/registration type, and NS-SEC distributions of births vary by ethnic group. Marital status/registration type refers to whether the birth was registered inside or outside marriage and, if it was outside marriage, who registered the birth. The NS-SEC is based on the father's occupation and is therefore only available for births occurring in marriage or jointly registered by both parents. As NS-SEC is coded for only a 10 per cent sample of live births (and all stillbirths), the three-class version of NS-SEC was used here rather than the more detailed five- or eight-class versions.

The analysis of gestational age and birthweight by ethnic group presented in **Section B** focuses on live singletons only. These birth outcomes are very different for multiple births and stillbirths and so these will be examined separately at a later date. Live singletons accounted for 96.5 per cent of all births in 2005. The main gestational age outcome considered is the percentage born preterm, as defined by the World Health Organization (WHO).[31] Preterm birth is defined as before 37 completed weeks of gestation, term as 37 to 41 completed weeks and post term as 42 or more completed weeks. Mean gestational age is also calculated.

The NN4B data specification asks for gestation length in weeks 'calculated from relevant menstrual data held within the maternity system'. However, given the very widespread use of ultrasound dating, it is likely that the recorded gestational age will often come from such examinations. No information is held in the NN4B record on the method used to assess gestational age. More detail on gestational age measurement is given elsewhere.[14] All the gestational age statistics were calculated using only births of known gestational age. Thus of the 626,917 live singleton births in England and Wales in 2005 the gestational age analysis includes 621,793 live singletons (99.2 per cent). The births that were not included, because gestational age was not known, included: registrations of live singletons that could not be linked to an NN4B record (n=851); live singletons where gestational age was not stated (n=4,181); and live singletons with gestational age under 22 weeks with birthweight 1,000g and above or not stated (n=92). Regarding this last group, our earlier work[5] indicated that for births recorded as under 22 weeks gestational age and with birthweights that were not very low, either gestational age or birthweight or both were wrongly recorded. For this reason we classify births of under 22 weeks with implausibly high or not stated birthweight as of not known gestational age.

In addition to considering ethnic differences in the birthweight distribution, and mean birthweight, we also consider differences in the percentage of low birthweight babies, defined by the WHO as those born weighing under 2,500g.[31] All the birthweight statistics were calculated using only births with stated birthweight. Thus of the 626,917 live singleton births in England and Wales in 2005, the birthweight analysis included 624,821 live singletons (99.7 per cent) after excluding the births with birthweight not stated.

Section C compares the distribution of births by ethnic group with the distribution of deliveries (also known as maternities) from the Maternity HES data.[32] Maternity HES data cover deliveries in England by financial year but are missing for most deliveries taking place at home or in private hospitals (accounting for 2.5 per cent of deliveries in total). Furthermore, as some maternity units fail to contribute data, information is missing for one-quarter of hospital deliveries. Women are asked to self-select their ethnic group from a given list (using 2001 Census categories). However not all agree to do so with the result that coverage is incomplete. Comparison of HES deliveries in 2000/01 with 2001 Census data on women with children under age 1 year indicated that the ethnic group distribution of HES deliveries was broadly accurate as long as cases where ethnic group was not stated were grouped together with those where ethnic group was stated as White.[32]

Maternity HES data were obtained on all NHS hospital deliveries by ethnic group for two years 2004/05 and 2005/06 (data from NHS Information for Health and Social Care, personal communication). In order for comparisons to be made with the 2005 linked birth registration-NN4B data, these two Maternity HES datasets were combined to give data for 2004 to 2006, that is the 24 month period running from 1 April 2004 until 31 March 2006.

Results

A. Distribution of all births by ethnic group

Table 2 shows the distribution of all 649,371 births in 2005 by all the ethnic group categories available. An ethnic group was recorded for 89.0 per cent of births, was not stated for 10.8 per cent of births and was unavailable for the 950 birth registrations that could not be linked to an NN4B record. As discussed in more detail below, the characteristics of those with ethnicity not stated are similar to those of the White British. Just under two-thirds (64.4 per cent) of all births in 2005 were recorded as White British, 8.6 per cent as Asian/Asian British, and 5.0 per cent as Black/Black British.

Maternal age

There were large variations between ethnic groups in the distribution of births by maternal age as shown by the cumulative distribution of births by mothers' age (Figure 1). There was a five-fold difference across these ethnic groups in the percentage of babies born to mothers under age 20, ranging from 1.6 per cent in the Indian group to 9.5 per cent in

Table 2 Distribution of all births by ethnic group, 2005

England and Wales

Ethnic group	Number	Percentage
White		
British	418,052	64.4
Irish	2,231	0.3
Any other White background	31,231	4.8
Mixed		
White and Black Caribbean	5,778	0.9
White and Black African	3,535	0.5
White and Asian	5,139	0.8
Any other mixed background	8,154	1.3
Asian or Asian British		
Indian	16,053	2.5
Pakistani	24,290	3.7
Bangladeshi	8,241	1.3
Any other Asian background	7,481	1.2
Black or Black British		
Caribbean	7,517	1.2
African	19,756	3.0
Any other Black background	5,428	0.8
Other ethnic groups		
Chinese	2,320	0.4
Any other ethnic group	12,912	2.0
Not stated	70,303	10.8
Not linked to an NN4B record	950	0.1
Total	649,371	100.0

the Caribbean group. Half of all births in the White British and African groups were to women under age 30 compared to 68 per cent of births in the Pakistani and 71 per cent in the Bangladeshi groups. The maternal age distribution of the births with ethnicity not stated (not shown) is similar to that of the White British group.

Marital status/registration type

There are marked ethnic group differences in the marital status/registration type of births (Figure 2). Almost all births in each of the Asian groups were registered within marriage as compared with only one-third of births in the Caribbean group and just over half in the White British group. The proportion of babies registered by the mother alone

Figure 2 Distribution of all births by marital status/registration type, by ethnic group, 2005

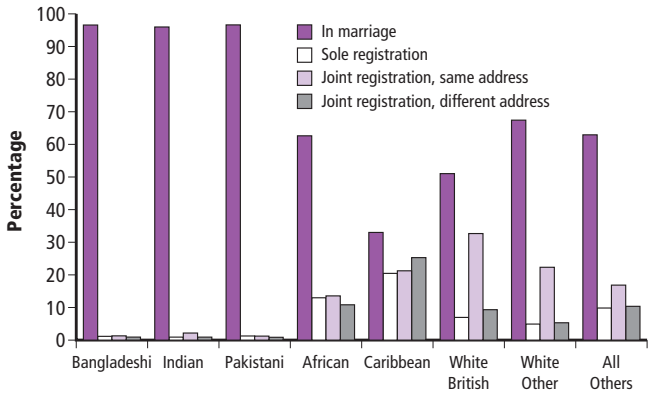
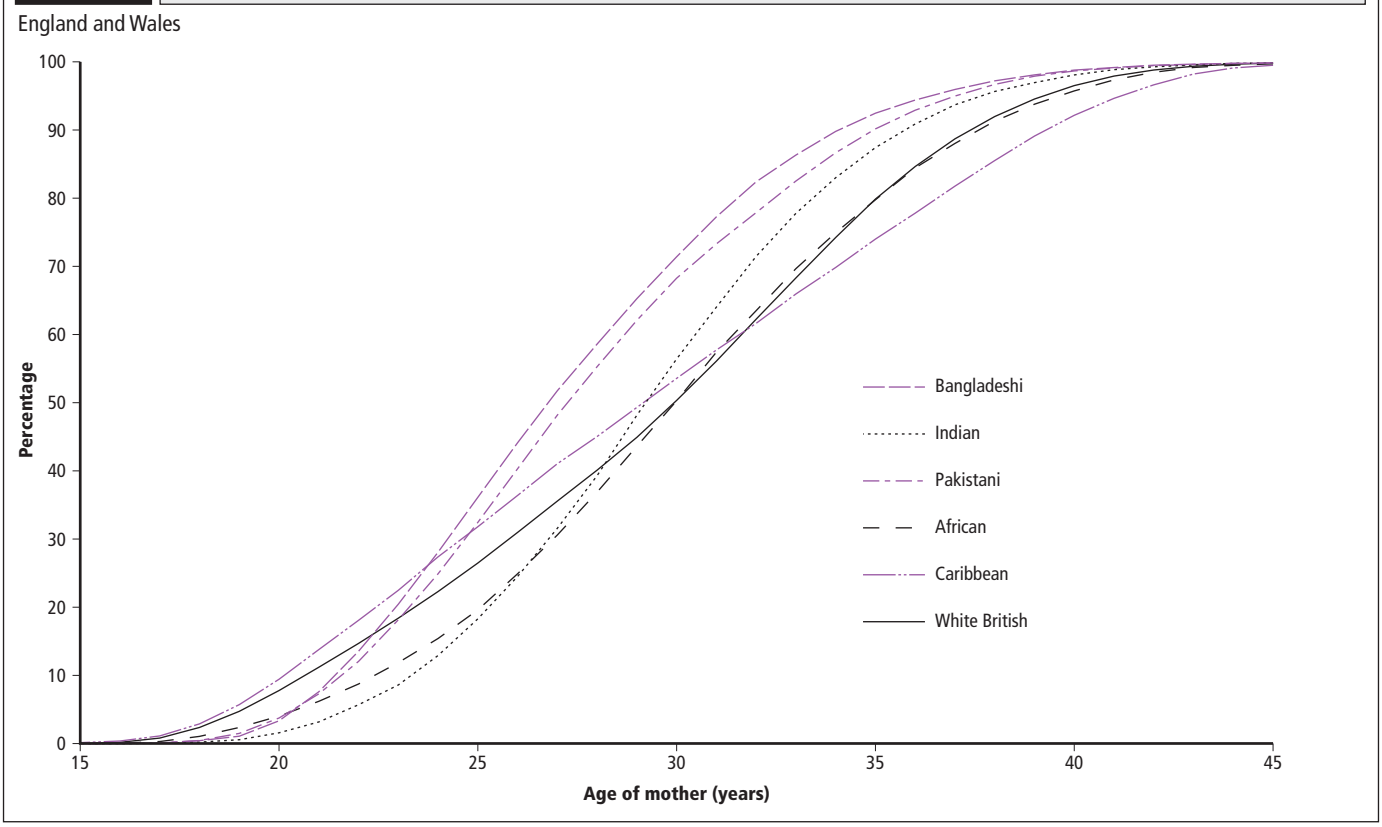


Figure 1 Cumulative distribution of all births by age of mother, for selected ethnic group: 2005



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was highest in the Caribbean group (20.5 per cent) followed by the African (13.0 per cent) and White British (7.0 per cent) groups. In each of the three Asian groups less than 1.5 per cent of births were registered by the mother alone.

Socio-economic classification (NS-SEC)

As mentioned above, only births in marriage and joint registrations can be classified to an NS-SEC and only 10 per cent of live births (and all stillbirths) are coded to an NS-SEC. Amongst the 63,470 births for which there is NS-SEC information, the distributions across NS-SEC categories varied greatly by ethnic group (Table 3). In the White British group, 38.1 per cent of births had fathers in managerial and professional occupations and 38.3 per cent in routine and manual occupations, with a further 19.5 per cent in intermediate occupations. The NS-SEC distributions of births in the Asian groups differed from that of the White British group and also from each other. In the Bangladeshi group 56.0 per cent of births had fathers in routine and manual occupations and 19.6 per cent in managerial and professional occupations while in the Pakistani group the corresponding figures were 42.9 per cent and 21.6 per cent. In contrast, in the Indian group the largest group were babies with fathers in managerial and professional occupations (47.4 per cent). Of the births in marriage or jointly registered in the African group, a particularly high percentage (26.9 per cent) were to fathers who were unemployed, students, in inadequately described or not stated occupations. In the White and Asian groups the percentages in this residual group were below 10 per cent. The NS-SEC distribution of the births without stated ethnicity was very similar to the White British.

B. Gestational age and birthweight by ethnic group: live singleton births only

Gestational age

The gestational age distribution of live singleton births varied by ethnic group (Table 4). The Caribbean group had the highest percentage (9.7 per cent) of live singletons born at under 37 weeks (that is, preterm) followed by the Indian, Pakistani and African groups with between 6.8 per cent and 7.0 per cent. Comparing the Caribbean group with White British, 3.6 more births out of every 100 in the Caribbean group were born before 37 weeks as compared to the White British group. The Caribbean group also had the highest percentage (1.1 per cent) born at under 28 weeks followed by the African group (0.8 per cent). This contrasted with 0.3 per cent in the White British group and between 0.4 per cent and 0.5

Table 3 Distribution of all births by National Statistics Socio-Economic Classification (NS-SEC),[1] by ethnic group, 2005 (births in marriage/joint registrations only)

England and Wales

	Asian, Asian British			Black, Black British		White					
	Bangladeshi	Indian	Pakistani	African	Caribbean	White British	White Other	All Others[2]	Not stated	Not linked	Total
NS-SEC (per cent)											
Managerial & professional occupations	19.6	47.4	21.6	28.3	25.2	38.1	43.7	33.4	40.3	32.5	37.1
Intermediate occupations	15.1	17.9	26.6	12.1	24.1	19.5	18.8	17.7	18.7	15.6	19.3
Routine & manual occupations	56.0	29.3	42.9	32.6	38.3	38.3	30.3	34.7	36.4	35.7	37.4
Unemployed, students, not stated, not classified	9.4	5.3	8.9	26.9	12.4	4.1	7.1	14.3	4.7	16.2	6.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of births (n)	854	1,633	2,679	1,923	651	40,544	3,317	4,828	6,887	154	63,470

1 Only 10 per cent of live births are coded to an NS-SEC.
2 Chinese, Other Asian, Other Black, Other, and all Mixed groups (see Box One).

Table 4 Gestational age at birth by ethnic group: live singletons,[1] 2005

England and Wales

	Asian, Asian British			Black, Black British		White				
	Bangladeshi	Indian	Pakistani	African	Caribbean	White British	White Other	All Others[2]	Not stated	Total
Gestational age, weeks (per cent)										
Under 24	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1
24-27	0.3	0.3	0.3	0.7	0.8	0.3	0.3	0.4	0.3	0.3
28-31	0.7	0.8	0.7	1.0	1.5	0.7	0.7	0.8	0.7	0.7
32-36	4.8	5.6	5.7	5.1	7.2	5.1	4.4	5.1	5.0	5.1
37-41	88.6	90.4	90.1	86.8	86.8	89.4	89.8	89.3	89.4	89.4
42 and over	5.5	2.7	3.0	6.2	3.5	4.5	4.8	4.2	4.5	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 28 weeks (per cent)	0.4	0.4	0.5	0.8	1.1	0.3	0.4	0.5	0.4	0.4
Under 37 weeks (per cent)	5.9	6.9	6.8	7.0	9.7	6.1	5.5	6.5	6.1	6.2
Mean gestational age, weeks	39.04	38.96	39.00	39.12	38.76	39.31	39.34	39.13	39.25	39.25
Number of births (n)	8,005	15,501	23,358	18,902	7,221	400,360	32,321	48,879	67,246	621,793
Row percentage	1.3	2.5	3.8	3.0	1.2	64.4	5.2	7.9	10.8	100.0

1 Births of known gestation only.
2 Chinese, Other Asian, Other Black, Other, and all Mixed groups (see Box One).

Figure 3 Birthweight distributions for selected ethnic groups: live singletons, 2005

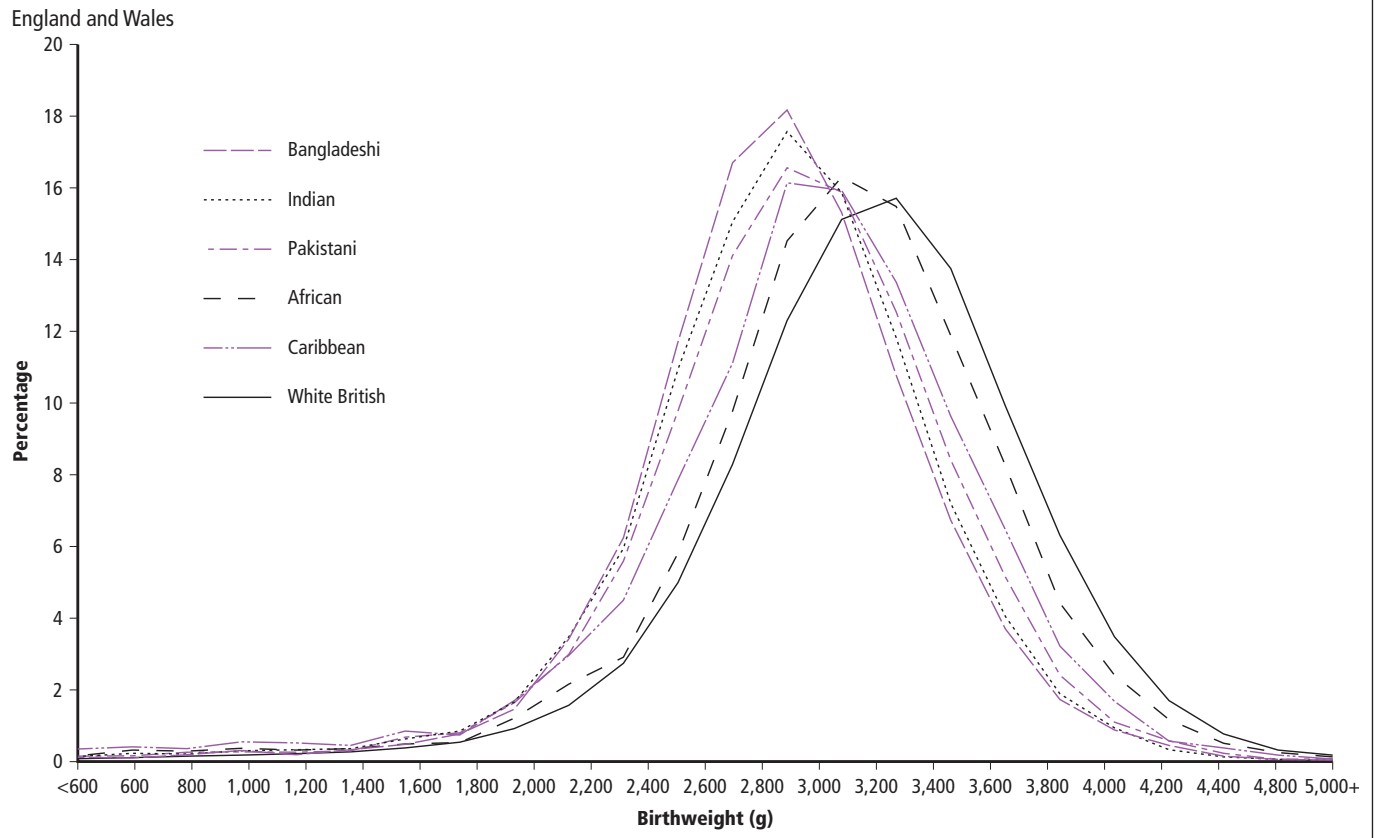


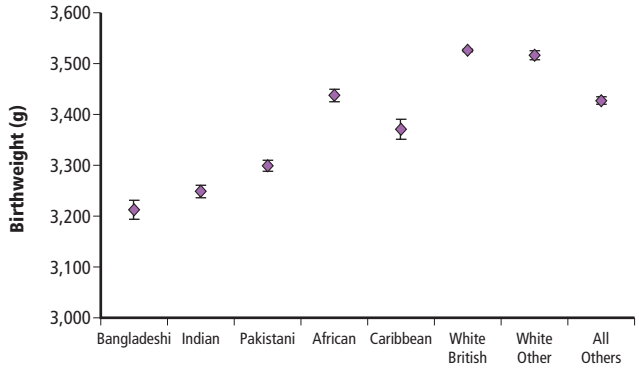
Table 5 Birthweight by ethnic group: live singletons,[1] 2005

England and Wales

	Asian, Asian British			Black, Black British		White					
	Bangladeshi	Indian	Pakistani	African	Caribbean	White British	White Other	All Others[2]	Not stated	Not linked	Total
Birthweight, grams (per cent)											
Under 1,000	0.4	0.6	0.6	0.8	1.1	0.3	0.4	0.5	0.4	1.3	0.4
1,000-	0.7	0.8	0.7	0.9	1.3	0.5	0.5	0.6	0.6	0.3	0.6
1,500-	1.4	1.7	1.6	1.2	1.9	1.1	0.9	1.2	1.1	0.9	1.1
2,000-	7.5	7.5	7.0	4.5	6.7	3.6	3.1	4.6	3.8	2.8	4.0
2,500-	32.0	29.6	27.2	17.3	21.4	14.9	14.3	19.6	16.3	15.2	16.6
3,000-	39.5	40.0	39.4	39.1	39.0	35.6	37.2	39.4	36.4	36.2	36.5
3,500-	15.2	16.5	19.1	27.3	22.5	31.2	31.9	25.7	29.7	32.1	29.4
4,000-	2.9	3.1	3.9	7.5	5.3	10.8	10.0	7.1	10.0	9.3	9.7
4,500 and over	0.4	0.3	0.6	1.4	0.8	2.0	1.7	1.2	1.8	1.8	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 1,500g (per cent)	1.1	1.4	1.2	1.7	2.4	0.9	0.9	1.1	1.0	1.6	1.0
Under 2,500g (per cent)	10.0	10.5	9.8	7.4	10.9	5.6	4.9	7.0	5.9	5.3	6.1
Mean birthweight, g	3,075	3,082	3,130	3,288	3,162	3,393	3,393	3,272	3,360	3,363	3,352
(95 per cent confidence interval)	(3,063, 3,086)	(3,073, 3,090)	(3,123, 3,137)	(3,279, 3,297)	(3,147, 3,176)	(3,391, 3,394)	(3,387, 3,399)	(3,267, 3,278)	(3,356, 3,365)	(3,317, 3,409)	(3,351, 3,354)
Number of births (n)	7,963	15,477	23,475	18,708	7,137	402,942	32,107	48,720	67,616	676	624,821
Row percentage	1.3	2.5	3.8	3.0	1.1	64.5	5.1	7.8	10.8	0.1	100.0

1 Births of stated birthweight only.
2 Chinese, Other Asian, Other Black, Other, and all Mixed groups (see Box One).

Figure 4 Mean birthweight (and 95 per cent confidence intervals) of babies born at 40 weeks gestational age, by ethnic group: live singletons, 2005



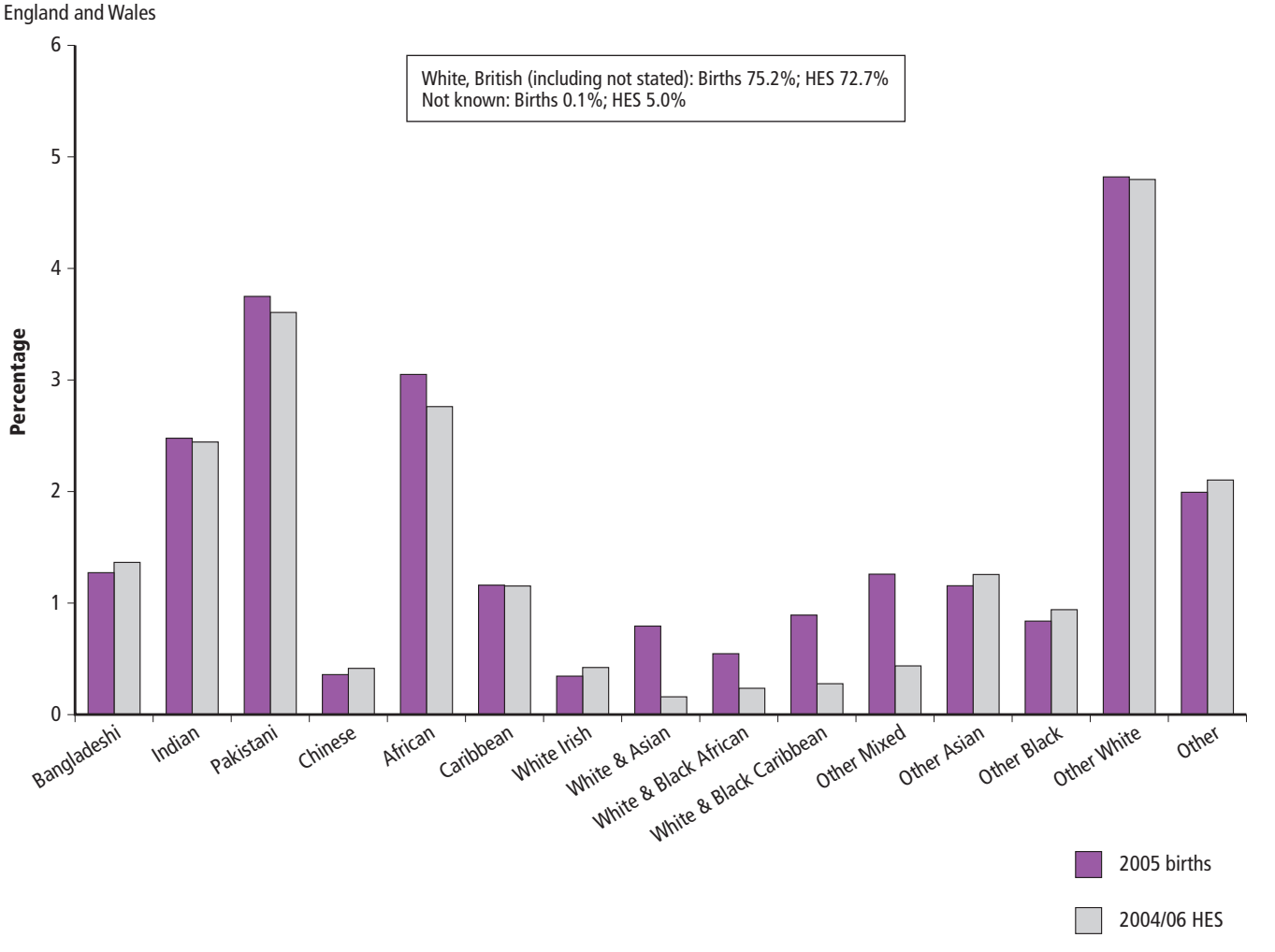
per cent in all other groups. The percentage born at 42 weeks and over was highest in the African (6.2 per cent) and Bangladeshi (5.5 per cent) groups, and lowest in the Indian and Pakistani groups (2.7 per cent and 3.0 per cent, respectively). The mean gestational age was highest in the White groups. The gestational age distribution of those without stated ethnicity was very similar to that of the White British.

Birthweight

Figure 3 illustrates the contrasting birthweight distributions of the main ethnic groups analysed in this paper. The distributions vary in terms of shape and location. The Bangladeshi, Indian and Pakistani distributions are located to the left (that is, towards lower birthweights), the White British distribution is located to the right (towards higher birthweights), while the Caribbean and African distributions occupy an intermediate position. There is also less variability in birthweights for the Bangladeshi and Indian groups with more peaked distributions compared to the other groups.

Further birthweight statistics are given in Table 5. The percentage of babies born weighing under 2,500g was much higher in the Caribbean and all three Asian groups compared to the White groups. It ranged from 5.6 per cent in the White British group to 10.9 per cent in the Caribbean group and between 9.8 per cent and 10.5 per cent in the three Asian groups. In the African group 7.4 per cent were born weighing under 2,500g. There was considerable variation in the percentage of babies weighing under 1,500g at birth, the highest percentage in the Caribbean (2.4 per cent) and African (1.7 per cent) groups, with all other groups in the range 0.9 per cent to 1.4 per cent. There was a 300g difference between the mean birthweight of live singleton babies in the White groups (3,393g) and those in the Bangladeshi (3,075g) and Indian (3,082g) groups. The birthweight distribution of those with no stated ethnicity was most similar to that of the White British.

Figure 5 Ethnic group distribution: comparing all births and HES deliveries



The differences in birthweight between ethnic groups may be partly accounted for by differences in gestational age. However, as can be seen in Figure 4, there were substantial ethnic group differences in birthweight when one considers only those live singleton births delivered at 40 weeks (the modal gestational age in completed weeks for live singletons). For example, whereas at 40 weeks mean birthweight was 3,212g in the Bangladeshi group in the White British group it was 3,526g.

C. Assessing quality of NN4B ethnic group information

In the 2005 linked birth registration-NN4B data 64.4 per cent of babies were identified as White British. This compares with 57.8 per cent of deliveries in the Maternity HES data for the period 2004/06. Earlier work suggested (see Methods) that deliveries recorded with ethnic group 'not stated' were White.[32] If the 'not stated' groups in the birth and HES datasets are assumed to be White British, then the percentages White British increase to 75.2 per cent of births and 72.7 per cent of deliveries.

A comparison of the percentage in each of the other ethnic groups, according to the 2005 births data and the HES data for 2004/06, is shown in Figure 5. In each of the Bangladeshi, Indian, Pakistani, Chinese, African, Caribbean and Other White groups there was a close match between the percentage of births and the percentage of deliveries. The agreement is less good for the mixed ethnic groups each of which contained a slightly higher percentage of births than of deliveries.

Discussion

This paper presents the first data on ethnic differences in birthweight and gestational age for births in England and Wales as a whole. These new statistics indicate important differences in birthweight and gestational age among ethnic groups. Compared to the White groups, the percentage of low birthweight live singletons was much higher in the Caribbean and all the Asian groups. Live singleton babies in the White groups were on average heavier at birth than those in other ethnic groups with babies from the Indian and Bangladeshi groups weighing about 300g less than those classified as White. Some of the ethnic group differences in birthweight will be explained by ethnic group differences in the gestational age distributions. However, a similar pattern of difference in birthweight was seen even when the analysis was restricted to live singleton babies born at 40 weeks completed gestation. This indicates that these birthweight differences are not purely due to ethnic differences in gestational age. Ethnic differences in preterm birth were evident but less pronounced than for low birthweight. The Caribbean group had a much higher rate of preterm birth than any other ethnic group.

The very substantial numbers available for analysis in this dataset for England and Wales allow us for the first time to start to see finer differences between the ethnic minority groups showing, for example, variation between the Indian, Pakistani and Bangladeshi groups. Low birthweight, while high in all the Asian groups, varied between the three groups as did mean birthweight. The Indian and Pakistani groups had higher percentages of preterm births than the Bangladeshi group.

Our findings are consistent with data from the other, mainly regional or hospital-based, studies conducted in the UK demonstrating shorter gestational ages and lower birthweights among ethnic minority groups in the UK and in particular among Asians.[20, 21, 22, 23, 24, 25, 26, 27] Overall these smaller studies suggest that birthweights among Asian and Black groups in the UK were about 300g less than those of the white British population and that Asian and Black groups were more likely to deliver babies preterm compared with those categorised as White. Nevertheless, many of these studies were small and therefore ethnic groups were often combined (for example Black African and Black Caribbean combined in a single 'Black' category) with the result that important ethnic differences in birth outcomes (that can be clearly seen in the complete data for the whole of England and Wales) were obscured.[20,21,24,27]

The statistics presented in this paper are derived from all births in England and Wales, not a select geographical, or hospital-based, population. The combination of this vast database of almost 650,000 births, combined with the unique ethnic profile of babies born in England and Wales, results in a powerful and invaluable set of new data on ethnic differences in birthweight and gestational age. The sheer size of the dataset makes it possible to provide valid and reliable statistics for smaller ethnic groups rather than grouping together all Asian, and all Black, as has been done, of necessity, in most previous studies.

A key limitation of this analysis is the uncertainty surrounding the recording of ethnic group in the NN4B dataset. The ethnic group information recorded is likely to be a mixture of reports by mother and reports by health care professionals. Although the ethnic group of the baby is requested in NN4B, it is not possible to know whose ethnic group was actually recorded, the mother's or baby's. This is a consideration as the ethnic group of a mother and her baby can differ. A further consideration is that identification to an ethnic group is not always straightforward and individual responses, whether self-reported or not, may vary according to the circumstances and over time. The comparison of the NN4B ethnic group information with Maternity HES data indicates the ethnic group distributions to be in broad agreement. This is generally reassuring as to the quality of the NN4B information. However, differences in the way in which the information from the two datasets was derived may contribute to this comparison. Firstly, NN4B data requests ethnic group of baby, while HES data collects mother's ethnic group. Secondly, NN4B data are for babies born in England and Wales, while the HES data are for deliveries in NHS hospitals in England only. In the case of multiple births (3 per cent of all babies born in England and Wales in 2005) a baby and a delivery differ as a delivery will include more than one baby. Lastly, HES data are missing for over one quarter of births.

This analysis has shown great ethnic diversity in the socio-demographic characteristics of births, providing an important basis from which to start exploring the origin of the observed ethnic group differences in birthweight and gestational age. For example, there are striking differences across ethnic groups in the marital status/registration type distribution of births. In the Bangladeshi, Indian and Pakistani groups nearly all births occurred in marriage in contrast to the Caribbean group where only about a third occurred in marriage. Other important factors to consider include mother's age and the socio-economic position. Births to women aged 35 years and older were more prevalent among the Indian, African, Caribbean and all White groups compared with the Bangladeshi and Pakistani groups. The Caribbean group had the greatest proportion of births to women under the age of 20 years. These differences in the maternal age distribution of births may reflect ethnic differences in fertility rates as well as age distributions. The socio-economic distribution of births differed greatly by ethnic group, including across the three Asian groups. However, interpreting the NS-SEC data is complex. Firstly, occupation is only coded, and therefore available, for 10 per cent of live births (and all stillbirths). Secondly, father's occupation (and therefore the derived NS-SEC) is available only for births in marriage or jointly registered. It is not available for births registered by the mother alone and, as we have seen, the percentage of such sole registrations varied considerably by ethnic group between under 2 per cent in each of the Asian groups to 13 per cent in the African and 20 per cent in the Caribbean groups. As a result the NS-SEC distribution for the three Asian groups is more representative of the ethnic group as a whole than it is for the Caribbean and African groups where a high percentage of births are sole registrations and therefore cannot be assigned an NS-SEC on the basis of the father's occupation. As a consequence, untangling the contribution that NS-SEC makes to the observed ethnic differences in birth outcomes is challenging.

This first investigation of ethnic group differences in birthweight and gestational age has been confined to univariate analyses. As such it is limited in how far it can go in explaining the observed differences in birthweight and gestational age across ethnic groups. Multivariate analyses are planned and will help to determine if the observed ethnic differences in these birth outcomes can be explained in part by other known factors such as maternal age, marital status, socio-economic position and maternal country of birth.

Despite the limitations of the analysis, these data provide new insights into the extent and nature of ethnic differences in birthweight and gestational age. In particular, while the information available on each birth in England and Wales may be more restricted than in Nordic countries, the much greater size of this population, and its considerably greater ethnic diversity, allows for more detailed and statistically precise analyses of differences between ethnic groups and how these change over time.

These new data also start to fill an important gap in the routine birth data for England and Wales. They add to what is already known about health inequalities in birth outcomes and, as such, will inform the delivery of the national health inequalities infant mortality target.[33] Given the regional clustering of certain ethnic populations across the country, they have the potential to contribute to the understanding of local variations in birthweight and infant mortality.

Acknowledgements

We are grateful to the NHS Health and Social Care Information Centre for supplying us with Maternity Hospital Episode Statistics.

Key findings

- Ethnic group was recorded for 89.0 per cent of births in England and Wales in 2005. Of the total, 64.4 per cent were recorded as White British, 8.6 per cent as Asian/Asian British (Bangladeshi 1.3 per cent, Indian 2.5 per cent, Pakistani 3.7 per cent) and 5.0 per cent as Black/Black British (African 3.0 per cent, Caribbean 1.2 per cent)
- The percentage of low birthweight live singleton births in the Caribbean group and all three Asian groups was almost twice that in the White groups; it ranged from 5.6 per cent in the White British group to 10.9 per cent in the Caribbean group
- Live singleton births recorded as Indian or Bangladeshi weighed 300 grams less on average than those recorded as White. A similar birthweight difference was seen among those born at 40 weeks gestational age
- The percentage of live singletons born preterm varied from 9.7 per cent in the Caribbean group to 6.1 per cent in the White British group and 5.9 per cent in the Bangladeshi group
- There was a five-fold difference across ethnic groups in the percentage of babies born to mothers under age 20. It was 1.6 per cent in the Indian group, 7.8 per cent in the White British group and 9.5 per cent in the Caribbean group

References

1. Ward W P (1993) *Birth weight and economic growth: women's living standards in the industrializing West*, University of Chicago Press: Chicago.
2. McCormick M C (1985) 'The contribution of low birth weight to infant mortality and childhood morbidity', *New England Journal of Medicine* **312 (2)**, 82–90.
3. Lawn J E, Cousens S and Zupan J, Lancet Neonatal Survival Steering Team (2005) '4 million neonatal deaths: When? Where? Why?', *Lancet* **365 (9462)**, 891–900.
4. Office for National Statistics (2007) 'Report: Infant and perinatal mortality by social and biological factors, 2006', *Health Statistics Quarterly* **36**, 84–88. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
5. Moser K, Macfarlane A, Chow Y H *et al* (2007) 'Introducing new data on gestation-specific infant mortality among babies born in 2005 in England and Wales,' *Health Statistics Quarterly* **35**, 13–27. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725 Supplementary tables are available at: www.statistics.gov.uk/downloads/theme_health/Gestation-HSQ35/gest_spec_infantmortality.pdf
6. Johansson S, Montgomery S M, Ekbom A *et al* (2004) 'Preterm delivery, level of care, and infant death in Sweden: a population-based study', *Pediatrics* **113(5)**, 1230–35.
7. Swamy G K, Ostbye T and Skjaerven R (2008) 'Association of preterm birth with long-term survival, reproduction, and next-generation preterm birth', *Journal of the American Medical Association* **299(12)**, 1429–36.
8. Barker D J, Winter P D, Osmond C *et al* (1989) 'Weight in infancy and death from ischaemic heart disease', *Lancet* **2(8663)**, 577–80.
9. Barker D J (2007) 'The origins of the developmental origins theory', *Journal of Internal Medicine* **261(5)**, 412–17.
10. Leon D A, Johansson M and Rasmussen F (2000) 'Gestational age and growth rate of fetal mass are inversely associated with systolic blood pressure in young adults: an epidemiologic study of 165,136 Swedish men aged 18 years', *American Journal of Epidemiology* **152(7)**, 597–604.
11. Cnattingius S, Ericson A, Gunnarskog J and Kallen B (1990) 'A quality study of a medical birth register', *Scandinavian Journal of Social Medicine* **18(2)**, 143–48.
12. Samphier M L and Thompson B (1981) 'Longitudinal studies in Aberdeen, Scotland. B. The Aberdeen maternity and neonatal databank', In: Mednick S, Baert A and Bachmann B (eds) *Prospective Longitudinal Research. An Empirical Basis for the Primary Prevention of Psychosocial Disorders*, Oxford University Press: Oxford, 61–65.
13. Macfarlane A and Mugford M (2000) *Birth Counts. Statistics of pregnancy and childbirth. Volume 1,* The Stationery Office: London.
14. Moser K and Hilder L (2008) 'Assessing quality of NHS Numbers for Babies data and providing gestational age statistics', *Health Statistics Quarterly* **37**, 15–23. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
15. Office for National Statistics (2007) Preterm births, England and Wales, 2005. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=14882&Pos=&ColRank=1&Rank=272
16. Office for National Statistics. 2001 Census in England and Wales. Available on the Office for National Statistics website at: www.ons.gov.uk/census/get-data/index.html
17. Office for National Statistics (2006) *Focus on Ethnicity and Religion,* Office for National Statistics: London. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=14629

18. Office for National Statistics (2007) *Mortality statistics: Childhood, infant and perinatal, England and Wales, 2005,* Series DH3 No. 38, The Stationery Office: London. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305
19. Collingwood Bakeo A (2004) 'Trends in live births by mother's country of birth and other factors affecting low birthweight in England and Wales, 1983–2001', *Health Statistics Quarterly* **23**, 25–33. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
20. McFadyen I R, Campbell-Brown M, Abraham R *et al* (1984) 'Factors affecting birthweights in Hindus, Moslems and Europeans', *British Journal of Obstetrics and Gynaecology* **91(10)**, 968–72.
21. Chetcuti P, Sinha S H and Levene M I (1985) 'Birth size in Indian ethnic subgroups born in Britain', *Archives of Disease in Childhood* **60(9)**, 868–70.
22. Patel R R, Steer P, Doyle P *et al* (2004) 'Does gestation vary by ethnic group? A London-based study of over 122,000 pregnancies with spontaneous onset of labour', *International Journal of Epidemiology* **33(1)**, 107–13.
23. Margetts B M, Mohd Y S, Al Dallal Z and Jackson A A (2002) 'Persistence of lower birth weight in second generation South Asian babies born in the United Kingdom', *Journal of Epidemiology and Community Health* **56(9)**, 684–87.
24. Alvear J and Brooke O G (1978) 'Fetal growth in different racial groups', *Archives of Disease in Childhood* **53(1)**, 27–32.
25. Harding S, Rosato M G and Cruickshank J K (2004) 'Lack of change in birthweights of infants by generational status among Indian, Pakistani, Bangladeshi, Black Caribbean, and Black African mothers in a British cohort study', *International Journal of Epidemiology* **33(6)**, 1279–85.
26. Dearden L, Mesnard A and Shaw J (2006) 'Ethnic differences in birth outcomes in England', *Fiscal Studies* **27(1)**, 17–46.
27. Wilcox M, Gardosi J, Mongelli M *et al* (1993) 'Birth weight from pregnancies dated by ultrasonography in a multicultural British population', *British Medical Journal* **307(6904)**, 588–91.
28. Connecting for Health, NHS Numbers for Babies, accessed 8 July 2008, available at: www.connectingforhealth.nhs.uk/systemsandservices/nhsnumber/nn4b
29. Office for National Statistics (2008) Infant mortality by ethnic group, England and Wales, 2005. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=15111&Pos=1&ColRank=1&Rank=272
30. Hilder L, Moser K, Dattani N and Macfarlane A (2007) 'Pilot linkage of NHS Numbers for Babies data with birth registrations', *Health Statistics Quarterly* **33**, 25–33. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
31. World Health Organization (1992) *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision. Volume 1,* World Health Organization: Geneva.
32. The Information Centre for Health and Social Care (2007) *NHS Maternity Statistics, England: 2005–06.* The Information Centre, Community Health Statistics: Leeds.
33. Department of Health (2007). *Implementation Plan for Reducing Health Inequalities in Infant Mortality: A Good Practice Guide. Review of the health inequalities infant mortality PSA target,* Department of Health: London.

Tables

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Symbols

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: 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 is available on the National Statistics website at: www.statistics.gov.uk/popest

Live births
For England and Wales, figures relate to the number of births occurring in a period; for Scotland and Northern Ireland, figures relate to births registered in a period. By law, births must be registered within 42 days in England and Wales, within 21 days in Scotland, and within 42 days in Northern Ireland. In England and Wales, where a birth is registered later than the legal time period, and too late to be included in the count for the year of occurrence, it will be included in the count for the following year.

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.

Period expectation of life
The life tables on which these expectations are based use death rates for the given period 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 information is available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=14459

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 2006 and provisional 2007 figures relate to the number of registrations. Figures for both Scotland and Northern Ireland relate to the number of deaths registered in each year.

Coding cause of death
Between 1 January 1984 and 31 December 1992, ONS applied its own interpretation of the International Classification of Diseases (ICD) Section Rule 3 in the coding of deaths where terminal events and other 'modes of dying' such as cardiac arrest, cardiac failure, certain thrombembolic 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*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.

Age-standardised mortality rates
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.

Calculating quarterly rates
The denominators used for calculating quarterly rates for births, conceptions and abortions have been produced from mid-year population estimates and projections by linear interpolation.

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.

Civil Partnerships
The Civil Partnership Act 2004 came into force on 5 December 2005 in the UK, the first day couples could give notice of their intention to form a civil partnership. The first day that couples could normally form a partnership was 19 December 2005 in Northern Ireland, 20 December 2005 in Scotland and 21 December 2005 in England and Wales.

Civil partnerships are tabulated according to date of formation and area of occurrence. The fact that a civil partnership has taken place in England, Wales, Scotland or Northern Ireland does not necessarily mean 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 (for example 123.4); where appropriate, for small figures (below 10.0), two decimal places are given (for example 7.62). Figures which are provisional or estimated are given in less detail (for example 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.

Table 1.1 Population and vital rates: international

Selected countries — Numbers (thousands)/Rates per thousand

Year	United Kingdom	Austria	Belgium	Bulgaria	Cyprus[1]	Czech Republic	Denmark	Estonia	Finland	France	Germany[2]	Greece[3]	Hungary
Population (thousands)													
1971	55,928	7,501	9,673	8,540	610	9,810	4,963	1,369	4,612	51,251	78,313	8,831	10,370
1976	56,216	7,566	9,818	8,760	498	10,094	5,073	1,435	4,726	52,909	78,337	9,167	10,590
1981	56,357	7,569	9,859	8,891	515	10,293	5,121	1,482	4,800	54,182	78,408	9,729	10,712
1986	56,684	7,588	9,862	8,958	545	10,340	5,120	1,534	4,918	55,547	77,720	9,967	10,631
1991	57,439	7,813	9,979	8,982	587	10,309	5,154	1,566	5,014	57,055	79,984	10,247	10,346
1996	58,164	7,959	10,137	8,363	661 [12]	10,315	5,262	1,416	5,125	58,026	81,896	10,709	10,193
2001	59,113	8,043	10,287	7,910	701 [12]	10,224	5,359	1,364	5,188	59,322	82,340	10,950	10,188
2002	59,323	8,084	10,333	7,869	710 [12]	10,201	5,374	1,359	5,201	59,678	82,482	10,988	10,159
2003	59,557	8,118	10,376	7,824	721 [12]	10,202	5,387	1,354	5,213	60,028	82,520	11,024	10,130
2004	59,846	8,175	10,421	7,781	737 [12]	10,207	5,401	1,349	5,228	60,381	82,501	11,062	10,107
2005	60,238	8,233	10,479	7,740	758 [12]	10,234	5,416	1,346	5,246	60,996	82,464	11,104	10,087
2006	60,587	8,280[p]	10,511[p]	7,680[p]	766 [12]	10,280[p]	5,427[p]	1,345	5,270	61,350[p]	82,370[p]	11,150[p]	10,077[p]
2007	..	..	..	..	..	..	..	1,340[p]	5,290[p]	..	82,260[p]	..	..
Population changes (per 1,000 per annum)													
1971–76	1.0	1.7	3.0	5.2	–36.7	5.8	4.4	9.6	4.9	6.5	0.1	7.6	4.2
1976–81	0.5	0.1	0.8	3.0	6.8	3.9	1.9	6.6	3.1	4.8	0.2	12.3	2.3
1981–86	1.2	0.5	0.1	1.5	11.7	0.9	0.0	7.0	4.9	5.0	–1.8	4.9	–1.5
1986–91	2.7	5.9	2.4	0.5	15.4	–0.6	1.3	4.2	3.9	5.4	5.8	5.6	–5.4
1991–96	2.5	3.7	3.6	–13.8	25.2	0.1	4.2	–12.4	3.8	3.4	4.8	9.0	–3.0
1996–01	3.3	2.1	2.6	–10.8	12.1	–1.8	3.7	–7.3	2.5	4.5	1.1	4.5	–0.1
2001–02	3.5	5.1	4.5	–5.2	12.8	–2.2	2.8	–3.7	2.5	6.0	1.7	4.4	–2.8
2002–03	3.9	4.2	4.2	–5.7	15.5	0.1	2.4	–3.7	2.3	5.9	0.5	2.4	–2.9
2003–04	4.8	7.0	4.3	–5.5	22.2	0.5	2.6	–3.7	2.9	5.9	–0.2	3.4	–2.3
2004–05	6.6	7.1	5.6	–5.3	28.5	2.6	2.8	–2.2	3.4	10.2	–0.4	3.8	–2.0
2005–06	5.8	5.7[p]	3.1[p]	–7.8[p]	10.6	4.5[p]	2.0[p]	–0.7	4.6	5.8[p]	–1.1[p]	4.1[p]	–1.0[p]
2006–07	..	..	..	..	..	..	..	–3.7[p]	3.8[p]	..	–1.3[p]	..	..
Live birth rate (per 1,000 population per annum)													
1971–75	14.1	13.3	13.4	13.2	17.7	17.8	14.6	15.4	13.1	16.0	10.5	15.8	16.1
1976–80	12.5	11.5	12.5	15.1	19.0	17.1	12.0	15.0	13.6	14.1	10.5	15.6	15.8
1981–85	12.9	12.0	12.0	13.7	20.2	13.5	10.2	15.6	13.4	14.2	10.7	13.3	12.3
1986–90	13.7	11.6	12.1	12.7	18.8	12.7	11.5	15.5	12.7	13.8	9.8	10.6	11.8
1991–95	13.2	11.8	12.0	9.8	16.9	11.1	13.1	10.7	12.9	12.7	10.9	9.9	11.7
1996–00	12.0	10.2	11.2	8.3	13.2	8.8	12.6	8.9	11.3	12.7	9.6	10.2	9.8
2001	11.3	9.4	11.1	8.6	11.6	8.9	12.2	9.3	10.8	13.0	8.9	9.3	9.5
2002	11.3	9.7	10.8	8.5	11.1	9.6	11.9	9.6	10.7	12.7	8.7	9.5	9.5
2003	11.7	9.5	10.9	8.6	11.2	9.2	12.0	9.6	10.9	12.7	8.6	9.5	9.3
2004	12.0	9.7	11.1	9.0	11.3	9.6	11.9	10.4	11.0	12.7	8.6	9.6	9.4
2005	12.0	9.5	11.2	9.2	10.9	10.0	11.9	10.7	11.0	12.7	8.3	9.7	9.7
2006	12.4	9.3	11.5	9.6	11.3	10.3	12.0	11.1	11.2	13.0	8.2	10.0	9.9
2007	12.7[p]	9.1	11.4	9.8	10.8	11.1	11.7	11.7	11.1	12.8	8.3	9.8	9.7
Death rate (per 1,000 population per annum)													
1971–75	11.8	12.6	12.1	9.8	9.9	12.4	10.1	11.1	9.5	10.7	12.3	8.6	11.9
1976–80	11.9	12.3	11.6	12.9	10.4	12.5	10.5	12.1	9.3	10.2	12.2	8.8	12.9
1981–85	11.7	12.0	11.4	11.3	10.0	12.8	11.1	12.3	9.3	10.1	12.0	9.0	13.7
1986–90	11.4	11.1	10.8	11.9	10.2	12.4	11.5	11.9	9.8	9.5	11.6	9.3	13.5
1991–95	11.1	10.4	10.4	12.9	9.0	11.6	11.9	13.9	9.8	9.1	10.8	9.5	14.3
1996–00	10.6	9.7	10.3	14.0	7.7	10.8	11.2	13.1	9.6	9.2	10.4	9.7	13.9
2001	10.2	9.3	10.1	14.2	6.9	10.5	10.9	13.6	9.4	8.9	10.1	9.4	13.0
2002	10.2	9.4	10.2	14.3	7.3	10.6	10.9	13.5	9.5	9.2	10.2	9.5	13.1
2003	10.3	9.5	10.4	14.3	7.2	10.9	10.7	13.4	9.4	9.2	10.3	9.6	13.4
2004	9.7	9.1	9.8	14.2	7.1	10.5	10.3	13.2	9.1	8.4	10.0	9.5	13.1
2005	9.7	9.1	9.8	14.6	7.2	10.6	10.2	12.9	9.1	8.6	10.1	9.5	13.5
2006	9.4	8.9	..	14.8	6.7	10.2	10.2	12.9	9.1	..	9.9	9.5	13.1
2007	9.4[p]	8.9	..	..	..	..	10.2	..	9.2	..	10.0	..	13.0

Note:
Estimated population (mid-year), live birth and death rates up to the latest available data, as given in the *United Nations Monthly Bulletin of Statistics* (June 2008), *the United Nations Demographic Yearbook* (May 2008), and the Eurostat website (June 2008).

1 Republic of Cyprus - Greek Cypriot controlled area only
2 Including former GDR throughout.
3 Greece - mid-year population excludes armed forces stationed outside the country but includes alien forces stationed in the area.
4 Malta - including work and resident permit holders and foreigners residing in Malta.
5 Poland - excluding civilian aliens within the country but including civilian nationals temporarily outside the country. Average year data for 2000 and 2001 contain revised data according to the final results of the population census 2002.
6 Portugal - including the Azores and Madeira islands.
7 Spain - including the Balearic and Canary Islands.
8 For 1971 the European Union consisted of the 6 original member countries. This has since been expanded to include: 9 countries (1976–EU15); 10 countries (2004–EU25); 2 countries (2007–EU27). In this table, all totals include the EU27.
9 Including the Indian held part of Jammu and Kashmir, the final status of which has not yet been determined.
10 Japan - excluding diplomatic personnel outside the country and foreign military and civilian personnel and their dependants stationed in the area. Rates are based on births to or deaths of Japanese nationals only.
11 USA - excluding armed forces overseas and civilian citizens absent from the country for extended periods.
12 Indicates population estimates of uncertain reliability.
13 Data refer to 15 April.
14 Figures were updated taking into account the results of the 2002 All Russian Population Census.
15 Mid-year estimates have been adjusted for under-enumeration.
16 For statistical purposes the data for China do not include those for the Hong Kong SAR, Macao SAR and Taiwan province of China. Data for the period 1996 to 2000 have been adjusted on the basis of the Population Census of 2000. Data from 2001 to 2004 have been estimated on the basis of the annual national sample surveys of Population Changes. Estimate of uncertain reliability. Death rates for 1999–2003 and birth rates for 2000–2003 were obtained by the Sample Survey of Population Change 2003 in China.
17 Rate is for 1990–1995.
p provisional.

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

Selected countries — Numbers (thousands)/Rates per thousand

Year	Irish Republic	Italy	Latvia	Lithuania	Luxem–bourg	Malta[4]	Nether–lands	Poland[5]	Portugal[6]	Romania	Slovakia	Slovenia	Spain[7]	Sweden
Population (thousands)														
1971	2,992	54,073	2,366	3,160	342	330	13,194	32,800	8,644	20,470	4,540	1,732	34,216	8,098
1976	3,238	55,718	2,465	3,315	361	330	13,774	34,360	9,356	21,450	4,764	1,809	36,118	8,222
1981	3,443	56,502	2,515	3,422	365	322	14,247	35,902	9,851	22,353	4,996	1,910	37,741	8,320
1986	3,543	56,596	2,588	3,560	368	344	14,572	37,456	10,011	22,823	5,179	1,975	38,536	8,370
1991	3,526	56,751	2,662	3,742	387	358	15,070	38,245	9,871	23,185	5,283	2,002	38,920	8,617
1996	3,626[13]	56,860	2,457	3,602	414	380	15,530	38,618	10,058	22,608	5,374	1,991	39,479	8,841
2001	3,839[13]	56,978	2,355	3,481	442	393	16,046	38,251	10,293	22,408	5,380	1,992	40,721	8,896
2002	3,917[13]	57,157	2,339	3,469	446	396	16,149	38,232	10,368	21,795	5,379	1,996	41,314	8,925
2003	3,996[13]	57,605	2,325	3,454	450	399	16,225	38,195	10,441	21,734	5,379	1,997	42,005	8,958
2004	4,044[13]	58,175	2,313	3,436	453	401	16,282	38,180	10,502	21,673	5,382	1,997	42,692	8,994
2005	4,131[13]	58,607	2,301	3,414	457	404	16,320	38,161	10,549	21,624	5,387	2,001	43,398	9,030
2006	4,230[13]	58,940	2,295	3,390[P]	470[P]	410[P]	16,350[P]	38,130	10,580	21,580[P]	5,400[P]	2,010	44,100	9,090[P]
2007	4,340[P]	59,420[P]	2,270[P]	3,370[P]	..	410[P]	16,370[P]	..	..	21,540[P]	5,390[P]	2,020[P]	44,850[P]	9,140[P]
Population changes (per 1,000 per annum)														
1971–76	16.4	6.1	8.4	9.8	10.7	0.0	8.8	9.5	16.5	9.6	9.9	8.9	11.1	3.1
1976–81	12.7	2.8	4.1	6.5	2.5	–4.8	6.9	9.0	10.6	8.4	9.7	11.2	9.0	2.4
1981–86	5.8	0.3	5.8	8.1	1.8	13.7	4.6	8.7	3.2	4.2	7.3	6.8	4.2	1.2
1986–91	–1.0	0.5	5.7	10.2	10.2	8.1	6.8	4.2	–2.8	3.2	4.0	2.7	2.0	5.9
1991–96	4.3	0.4	–12.8	–1.7	13.9	8.4	6.1	2.0	3.8	–5.0	3.4	–1.1	2.9	5.1
1996–01	11.7	0.4	–8.3	–6.7	13.5	6.8	6.6	–1.9	4.7	–1.8	0.2	0.1	6.3	1.2
2001–02	20.3	3.1	–6.8	–3.4	9.0	7.6	6.4	–0.5	7.3	–27.4	–0.2	2.0	14.6	3.3
2002–03	20.2	7.8	–6.0	–4.3	9.0	7.6	4.7	–1.0	7.0	–2.8	0.0	0.5	16.7	3.7
2003–04	12.0	9.9	–5.2	–5.2	6.7	5.0	3.5	–0.4	5.8	–2.8	0.6	0.0	16.4	4.0
2004–05	21.5	7.4	–5.2	–6.4	8.8	7.5	2.3	–0.5	4.5	–2.3	0.9	2.0	16.5	4.0
2005–06	24.0	5.7	–2.6	–7.0[P]	28.4[P]	14.9[P]	1.8[P]	–0.8	2.9	–2.0[P]	2.4[P]	4.5	16.2	6.6[P]
2006–07	26.0[P]	8.1[P]	–10.9[P]	–5.9[P]	..	0.0[P]	1.2[P]	..	..	–1.9[P]	–1.9[P]	5.0[P]	17.0[P]	5.5[P]
Live birth rate (per 1,000 population per annum)														
1971–75	22.2	16.0	14.4	16.4	11.6	17.5	14.9	17.9	20.3	19.3	19.7	16.4	19.2	13.5
1976–80	21.3	12.6	13.9	15.4	11.2	17.0	12.6	19.3	17.9	18.9	20.3	16.3	17.1	11.6
1981–85	19.2	10.6	15.2	16.0	11.6	15.3	12.2	19.0	14.5	15.6	18.0	14.2	12.8	11.3
1986–90	15.8	9.8	15.3	15.8	12.2	16.0	12.8	15.5	11.9	15.8	15.8	12.3	10.8	13.2
1991–95	14.0	9.6	10.8	13.1	13.3	14.0	12.8	12.9	11.4	11.1	13.3	10.0	9.8	13.3
1996–00	14.2	9.2	8.0	10.4	13.1	12.0	12.6	10.4	11.3	10.4	10.7	9.1	9.5	10.2
2001	15.1	9.2	8.3	9.1	12.4	10.0	12.6	9.6	11.0	9.8	9.5	8.8	10.0	10.3
2002	15.5	9.4	8.6	8.7	12.0	9.6	12.5	9.3	11.0	9.7	9.5	8.8	10.2	10.7
2003	15.4	9.4	9.0	8.9	11.8	10.1	12.3	9.2	10.8	9.8	9.6	8.7	10.5	11.1
2004	15.3	9.7	8.8	8.9	11.8	9.7	11.9	9.3	10.4	10.0	10.0	9.0	10.6	11.2
2005	14.8	9.5	9.4	9.0	11.8	9.6	11.5	9.6	10.4	10.2	9.3	9.1	10.7	11.2
2006	15.2	9.5	9.7	9.2	11.7	9.6	11.3	9.8	10.0	10.1	10.0	9.4	10.9	11.7
2007	16.2	9.5	10.1	9.5	11.4	9.5	11.0	10.2	10.0	9.9	10.1	9.7	10.8	11.7
Death rate (per 1,000 population per annum)														
1971–75	11.0	9.8	11.6	9.0	12.2	9.0	8.3	8.4	11.0	9.4	9.4	10.0	8.5	10.5
1976–80	10.2	9.7	12.6	10.1	11.5	9.0	8.1	9.2	10.1	9.8	9.8	9.8	8.0	10.9
1981–85	9.4	9.5	12.8	10.6	11.2	8.2	8.3	9.6	9.6	10.3	10.1	10.3	7.7	11.0
1986–90	9.1	9.4	12.4	10.3	10.5	7.4	8.5	10.0	9.6	10.8	10.1	9.6	8.2	11.1
1991–95	8.8	9.7	14.8	12.0	9.8	7.6	8.8	10.2	10.4	11.5	9.9	9.7	8.7	10.9
1996–00	8.5	9.8	13.9	11.5	9.0	7.7	8.8	9.8	10.5	12.0	9.7	9.5	9.1	10.6
2001	7.9	9.6	14.0	11.6	8.4	7.6	8.7	9.5	10.2	11.6	9.7	9.3	8.9	10.5
2002	7.5	9.8	13.9	11.8	8.4	7.8	8.8	9.4	10.2	12.4	9.6	9.4	8.9	10.6
2003	7.2	10.2	13.9	11.9	9.0	7.7	8.7	9.6	10.4	12.3	9.7	9.7	9.2	10.4
2004	7.0	9.4	13.9	12.0	7.6	7.2	8.4	9.5	9.7	11.9	9.6	9.3	8.7	10.1
2005	6.6	9.7	14.2	12.8	8.0	7.8	8.4	9.7	10.2	12.1	9.9	9.4	8.9	10.2
2006	6.5	9.5	14.5	13.2	8.0	..	8.3	9.7	9.7	11.9	9.9	9.1	8.4	10.0
2007	..	..	14.5	13.5	..	..	..	..	..	11.7	9.9	..	..	10.0

See notes on first page of table.

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

Selected countries — Numbers (thousands)/Rates per thousand

Year	EU[8]	Russian Federation	Australia	Canada	New Zealand	China	India[9]	Japan[10]	USA[11]	Year
Population (thousands)										
1971	438,728	130,934	13,067	22,026	2,899	852,290[16]	551,311	105,145	207,661	1971
1976	450,468	135,027	14,033	23,517	3,163	937,170[16]	617,248	113,094	218,035	1976
1981	459,807	139,225	14,923	24,900	3,195	1,008,460[16]	675,185	117,902	229,958	1981
1986	465,336	144,154	16,018	26,204	3,317	1,086,733[16]	767,199	121,672	240,680	1986
1991	473,094	148,245	17,284	28,031	3,477	1,170,100[16]	851,897	123,964	252,639	1991
1996	478,084	148,160[14]	18,311[15]	29,611[15]	3,732	1,217,550[16]	942,157[12]	125,757	269,394	1996
2001	482,464	145,976[14]	19,413[15]	31,021[15]	3,880	1,271,850[16]	1,035,066[12]	127,130	285,108	2001
2002	483,643	145,306[14]	19,641[15]	31,373[15]	3,939	1,280,400[16]	1,050,640[12]	127,400	287,985	2002
2003	485,617	144,566[14]	19,873[15]	31,669[15]	4,009	1,288,400[16]	1,068,214[12]	127,650	290,850	2003
2004	487,720	143,821[14]	20,111[15]	31,974[15]	4,061	1,296,075[16]	1,085,600[12]	127,670	293,623	2004
2005	490,125	143,150[14]	20,409[15]	32,312[15]	4,099	1,303,720[16]	1,101,000[12]	127,773	296,410	2005
2006	492,068[P]	142,490[14]	20,700[15]	32,650[15]	4,180	1,311,020[16]	1,117,730[12]	127,760	299,400	2006
2007	..	..	21,020[15,P]	32,980[15,P]	4,230[P]	..	1,134,000[12]	127,770	..	2007
Population changes (per 1,000 per annum)										
1971–76	5.4	6.3	14.8	13.5	18.2	19.9	23.9	15.1	10.0	1971–76
1976–81	4.1	6.2	12.7	11.8	2.0	15.2	18.8	8.5	10.9	1976–81
1981–86	2.4	7.1	14.7	10.5	7.6	15.5	27.3	6.4	9.3	1981–86
1986–91	3.3	5.7	15.8	13.9	9.6	15.3	22.1	3.8	9.9	1986–91
1991–96	2.1	–1.7	11.9	11.3	14.7	10.3	21.1	2.9	12.1	1991–96
1996–01	1.8	–2.9	12.0	9.5	7.9	8.9	19.7	2.2	11.7	1996–01
2001–02	2.4	–4.6	11.7	11.3	15.2	6.7	15.0	2.1	10.1	2001–02
2002–03	4.1	–5.1	11.8	9.4	17.8	6.2	16.7	2.0	9.9	2002–03
2003–04	4.3	–5.2	12.0	9.6	13.0	6.0	16.3	0.2	9.5	2003–04
2004–05	4.9	–4.7	14.8	10.6	9.4	5.9	14.2	0.8	9.5	2004–05
2005–06	3.8[P]	–4.6	14.3	10.5	19.8	5.6	15.2	–0.1	10.1	2005–06
2006–07	..	..	15.5[P]	10.1[P]	12.0[P]	..	14.6	0.1	..	2006–07
Live birth rate (per 1,000 population per annum)										
1971–75	..	..	18.8	15.9	20.4	27.2	35.6	18.6	15.3	1971–75
1976–80	..	..	15.7	15.5	16.8	18.6	33.4	14.9	15.2	1976–80
1981–85	..	..	15.6	15.1	15.8	19.2	..	12.6	15.7	1981–85
1986–90	..	..	15.1	14.8	17.1	..	..	10.6	16.0	1986–90
1991–95	11.4	10.2	14.7	13.6	16.9	18.5[17]	..	9.7	13.1	1991–95
1996–00	10.6	8.6	13.4	11.4	14.9	..	..	9.5	14.3	1996–00
2001	10.1	9.0	12.7	10.8	14.4	13.4[16]	25.4	9.2	14.1	2001
2002	10.3	9.6	12.8	10.5	13.7	12.9[16]	25.0	9.1	14.0	2002
2003	10.3	10.2	12.6	10.6	14.0	12.4[16]	24.8	8.8	14.1	2003
2004	10.4	10.5	12.7	10.5	14.3	12.3[16]	24.1	8.7	14.0	2004
2005	10.4	10.2	12.9	10.6	14.1	12.4[16]	23.8	8.3	14.0	2005
2006	10.6	10.4	12.9	..	14.1	..	..	8.6	..	2006
2007	10.6	10.9	..	..	15.2	..	..	..	..	2007
Death rate (per 1,000 population per annum)										
1971–75	..	..	8.2	7.4	8.4	7.3	15.5	6.4	9.1	1971–75
1976–80	..	..	7.6	7.2	8.2	6.6	13.8	6.1	8.7	1976–80
1981–85	..	..	7.3	7.0	8.1	6.7	..	6.1	8.6	1981–85
1986–90	..	..	7.2	7.3	8.2	..	..	6.4	8.7	1986–90
1991–95	10.4	13.7	7.0	7.8	7.8	..	..	7.0	8.7	1991–95
1996–00	10.2	14.3	6.9	7.2	7.2	..	..	7.4	8.5	1996–00
2001	9.9	15.4	6.6	7.1	7.2	6.4[16]	8.4	7.6	8.5	2001
2002	9.9	16.1	6.8	7.1	7.1	6.4[16]	8.1	7.7	8.5	2002
2003	10.1	16.4	6.7	7.1	7.0	6.4[16]	8.0	8.0	8.4	2003
2004	9.7	16.0	6.6	7.1	7.0	6.4[16]	7.5	8.1	8.2	2004
2005	9.8	15.2	6.4	7.2	6.6	6.5[16]	7.6	8.5	..	2005
2006	..	15.0	6.5	..	6.7	..	..	8.5	..	2006
2007	..	..	..	..	6.8	..	..	..	..	2007

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	57,714	56,078	50,986	48,102	2,884	5,092	1,636
1994	57,862	56,218	51,116	48,229	2,887	5,102	1,644
1995	58,025	56,376	51,272	48,383	2,889	5,104	1,649
1996	58,164	56,503	51,410	48,519	2,891	5,092	1,662
1997	58,314	56,643	51,560	48,665	2,895	5,083	1,671
1998	58,475	56,797	51,720	48,821	2,900	5,077	1,678
1999	58,684	57,005	51,933	49,033	2,901	5,072	1,679
2000	58,886	57,203	52,140	49,233	2,907	5,063	1,683
2001	59,113	57,424	52,360	49,450	2,910	5,064	1,689
2002 [1]	59,323	57,627	52,572	49,652	2,920	5,055	1,697
2003 [1]	59,557	57,855	52,797	49,866	2,931	5,057	1,703
2004 [1]	59,846	58,136	53,057	50,111	2,946	5,078	1,710
2005 [1]	60,238	58,514	53,419	50,466	2,954	5,095	1,724
2006	60,587	58,846	53,729	50,763	2,966	5,117	1,742
2006 by age group **(percentages)**							
0–4	*5.8*	*5.8*	*5.8*	*5.8*	*5.4*	*5.2*	*6.4*
5–15	*13.3*	*13.2*	*13.3*	*13.2*	*13.5*	*12.8*	*15.4*
16–44	*40.2*	*40.2*	*40.3*	*40.4*	*37.5*	*39.5*	*41.3*
45–64M/59F	*22.0*	*22.0*	*21.9*	*21.9*	*22.9*	*23.3*	*20.6*
65M/60F–74	*11.0*	*11.1*	*11.0*	*10.9*	*12.2*	*11.7*	*10.0*
75 and over	*7.7*	*7.7*	*7.8*	*7.7*	*8.5*	*7.5*	*6.3*
Projections[2]							
2006	60,587	58,846	53,729	50,763	2,966	5,117	1,742
2011	62,761	60,950	55,744	52,706	3,038	5,206	1,812
2016	64,975	63,107	57,837	54,724	3,113	5,270	1,868
2021	67,191	65,269	59,943	56,757	3,186	5,326	1,922
2026	69,260	67,294	61,931	58,682	3,248	5,363	1,966
2031	71,100	69,101	63,727	60,432	3,296	5,374	1,999
2031 by age group **(percentages)**							
0–4	*5.5*	*5.5*	*5.6*	*5.6*	*5.1*	*4.7*	*5.7*
5–15	*12.4*	*12.4*	*12.5*	*12.5*	*12.1*	*11.2*	*13.4*
16–44	*36.4*	*36.4*	*36.6*	*36.8*	*33.7*	*34.3*	*35.5*
45–64[3]	*23.4*	*23.4*	*23.3*	*23.3*	*23.5*	*24.4*	*23.9*
65–74[3]	*10.6*	*10.6*	*10.5*	*10.4*	*12.0*	*12.4*	*10.7*
75 and over	*11.6*	*11.6*	*11.5*	*11.4*	*13.7*	*12.9*	*10.9*

Note: Figures may not add exactly due to rounding.

1 2002 to 2005 mid-year population estimates for England and Wales and the United Kingdom have been updated to include the latest revised estimates that take into account improved estimates of international migration.

2 National projections based on mid-2006 population estimates.

3 Between 2010 and 2020, state pension age will change from 65 years for men and 60 years for women to 65 years for both sexes. Between 2024 and 2026, state pension age will increase from 65 years to 66 years for both men and women.

Table 1.3 Population: subnational

Government Office Regions of England — 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	2,594	6,847	4,954	4,056	5,246	5,154	6,844	7,673	4,734
1994	2,589	6,839	4,960	4,072	5,249	5,178	6,874	7,712	4,757
1995	2,583	6,828	4,961	4,092	5,257	5,206	6,913	7,763	4,782
1996	2,576	6,810	4,961	4,108	5,263	5,233	6,974	7,800	4,793
1997	2,568	6,794	4,958	4,120	5,262	5,267	7,015	7,853	4,827
1998	2,561	6,792	4,958	4,133	5,271	5,302	7,065	7,889	4,849
1999	2,550	6,773	4,956	4,152	5,272	5,339	7,154	7,955	4,881
2000	2,543	6,774	4,959	4,168	5,270	5,375	7,237	7,991	4,917
2001	2,540	6,773	4,977	4,190	5,281	5,400	7,322	8,023	4,943
2002 [1]	2,541	6,778	5,002	4,222	5,295	5,433	7,362	8,047	4,973
2003 [1]	2,541	6,800	5,028	4,254	5,312	5,475	7,364	8,087	5,005
2004 [1]	2,542	6,820	5,064	4,291	5,327	5,511	7,389	8,125	5,042
2005 [1]	2,550	6,840	5,108	4,328	5,351	5,563	7,456	8,185	5,087
2006	2,556	6,853	5,142	4,364	5,367	5,607	7,512	8,238	5,124
2006 by age group **(percentages)**									
0–4	*5.4*	*5.7*	*5.7*	*5.5*	*6.0*	*5.8*	*6.8*	*5.7*	*5.2*
5–15	*13.0*	*13.6*	*13.3*	*13.3*	*13.7*	*13.5*	*12.4*	*13.5*	*12.8*
16–44	*39.0*	*39.5*	*40.2*	*39.5*	*39.2*	*38.7*	*48.5*	*39.0*	*37.1*
45–64M/59F	*23.0*	*22.3*	*22.0*	*22.6*	*21.9*	*22.5*	*18.5*	*22.5*	*23.0*
65M/60F–74	*11.7*	*11.3*	*11.1*	*11.3*	*11.4*	*11.4*	*8.1*	*11.1*	*12.4*
75 and over	*7.9*	*7.6*	*7.6*	*7.8*	*7.8*	*8.1*	*5.7*	*8.2*	*9.4*
Projections[2]									
2006	2,556	6,853	5,142	4,364	5,367	5,607	7,512	8,238	5,124
2011	2,594	7,014	5,377	4,591	5,506	5,890	7,817	8,550	5,368
2016	2,638	7,193	5,621	4,825	5,662	6,179	8,114	8,871	5,620
2021	2,685	7,377	5,866	5,060	5,824	6,471	8,390	9,202	5,882
2026	2,730	7,546	6,101	5,286	5,977	6,747	8,633	9,523	6,139
2029	2,754	7,638	6,234	5,412	6,061	6,901	8,768	9,702	6,283
2031	2,769	7,696	6,319	5,491	6,114	6,997	8,858	9,814	6,374
2031 by age group **(percentages)**									
0–4	*5.2*	*5.5*	*5.6*	*5.3*	*5.9*	*5.5*	*6.7*	*5.5*	*5.0*
5–15	*12.1*	*12.6*	*12.5*	*12.3*	*13.2*	*12.6*	*12.6*	*12.7*	*11.8*
16–44	*35.6*	*36.3*	*37.7*	*35.6*	*35.7*	*34.9*	*43.7*	*35.1*	*33.9*
45–64[3]	*23.0*	*23.2*	*23.0*	*23.8*	*22.8*	*23.7*	*22.9*	*23.6*	*23.7*
65–74[3]	*11.7*	*10.9*	*10.2*	*11.0*	*10.5*	*10.9*	*7.4*	*10.8*	*11.8*
75 and over	*12.4*	*11.5*	*10.9*	*12.0*	*11.9*	*12.4*	*6.7*	*12.4*	*13.9*

Note: Figures may not add exactly due to rounding.

1 2002 to 2005 mid-year population estimates for England and Wales and the United Kingdom have been updated to include the latest revised estimates that take into account improved estimates of international migration.

2 These projections are based on the 2006 population estimates and are consistent with the 2006-based national projections produced by the Office for National Statistics.

3 Between 2010 and 2020, state pension age will change from 65 years for men and 60 years for women to 65 years for both sexes.
Between 2024 and 2026, state pension age will increase from 65 years to 66 years for both men and women.

Table 1.4 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	16–64M/59F[1]	65M/60F[1] and over
United Kingdom																
Persons																
1981	56,357	730	2,726	8,147	9,019	8,010	6,774	9,540	2,935	5,195	2,677	..	..	12,543	33,780	10,035
1986	56,684	748	2,886	7,143	9,200	8,007	7,711	9,212	3,069	5,020	2,971	716	..	11,645	34,725	10,313
1991	57,439	790	3,077	7,141	8,168	8,898	7,918	9,500	2,888	5,067	3,119	626	248	11,685	35,197	10,557
1996	58,164	719	3,019	7,544	7,231	9,131	7,958	10,553	2,785	5,066	3,129	711	317	12,018	35,498	10,649
2000	58,886	682	2,869	7,652	7,139	8,646	8,678	11,011	2,900	4,940	3,249	755	364	11,959	36,138	10,788
2001	59,113	663	2,819	7,624	7,261	8,475	8,846	11,168	2,884	4,947	3,296	753	377	11,863	36,406	10,845
2002[2]	59,323	661	2,753	7,603	7,400	8,264	9,004	11,307	2,892	4,967	3,344	738	388	11,785	36,622	10,916
2003[2]	59,557	680	2,706	7,546	7,573	8,084	9,105	11,412	2,949	5,001	3,398	706	399	11,720	36,826	11,012
2004[2]	59,846	705	2,686	7,475	7,739	7,954	9,185	11,507	3,027	5,028	3,431	702	409	11,645	37,083	11,117
2005[2]	60,238	716	2,713	7,373	7,886	7,935	9,245	11,616	3,114	5,046	3,420	755	419	11,589	37,418	11,232
2006	60,587	732	2,765	7,241	8,020	7,896	9,262	11,744	3,240	5,029	3,416	820	423	11,537	37,707	11,344
Males																
1981	27,412	374	1,400	4,184	4,596	4,035	3,409	4,711	1,376	2,264	922	..	..	6,439	17,646	3,327
1986	27,542	384	1,478	3,664	4,663	4,022	3,864	4,572	1,463	2,206	1,060	166	..	5,968	18,142	3,432
1991	27,909	403	1,572	3,655	4,146	4,432	3,949	4,732	1,390	2,272	1,146	166	46	5,976	18,303	3,630
1996	28,287	369	1,547	3,857	3,652	4,540	3,954	5,244	1,360	2,311	1,187	201	65	6,148	18,375	3,764
2000	28,690	350	1,469	3,920	3,606	4,292	4,298	5,457	1,420	2,294	1,278	225	81	6,128	18,685	3,878
2001	28,832	338	1,445	3,906	3,672	4,215	4,382	5,534	1,412	2,308	1,308	227	85	6,077	18,827	3,928
2002[2]	28,964	338	1,408	3,897	3,758	4,114	4,462	5,594	1,414	2,325	1,338	226	89	6,037	18,949	3,978
2003[2]	29,109	349	1,384	3,868	3,855	4,024	4,514	5,646	1,440	2,347	1,369	219	94	6,006	19,075	4,028
2004[2]	29,278	362	1,376	3,832	3,953	3,960	4,546	5,691	1,479	2,365	1,392	223	98	5,971	19,229	4,078
2005[2]	29,497	367	1,389	3,781	4,030	3,952	4,581	5,745	1,522	2,380	1,400	247	103	5,941	19,426	4,130
2006	29,694	374	1,416	3,709	4,108	3,940	4,586	5,804	1,584	2,379	1,413	273	106	5,912	19,611	4,171
Females																
1981	28,946	356	1,327	3,963	4,423	3,975	3,365	4,829	1,559	2,931	1,756	..	..	6,104	16,134	6,708
1986	29,142	364	1,408	3,480	4,538	3,985	3,847	4,639	1,606	2,814	1,911	550	..	5,678	16,583	6,881
1991	29,530	387	1,505	3,487	4,021	4,466	3,968	4,769	1,498	2,795	1,972	460	202	5,709	16,894	6,927
1996	29,877	350	1,472	3,687	3,579	4,591	4,005	5,309	1,426	2,755	1,942	509	252	5,870	17,123	6,885
2000	30,196	333	1,399	3,732	3,533	4,353	4,380	5,554	1,481	2,646	1,971	530	283	5,832	17,453	6,911
2001	30,281	324	1,375	3,718	3,589	4,260	4,465	5,634	1,473	2,640	1,987	526	292	5,786	17,579	6,917
2002[2]	30,359	323	1,346	3,706	3,642	4,150	4,542	5,713	1,478	2,642	2,006	513	299	5,748	17,673	6,938
2003[2]	30,449	331	1,322	3,678	3,718	4,060	4,590	5,766	1,509	2,654	2,029	487	305	5,714	17,751	6,984
2004[2]	30,568	343	1,310	3,642	3,785	3,993	4,639	5,816	1,548	2,662	2,040	479	310	5,674	17,854	7,039
2005[2]	30,741	349	1,324	3,592	3,856	3,983	4,663	5,871	1,591	2,666	2,020	509	316	5,647	17,992	7,102
2006	30,893	357	1,349	3,532	3,912	3,956	4,675	5,940	1,656	2,650	2,002	547	317	5,625	18,096	7,172
England and Wales																
Persons																
1981	49,634	634	2,372	7,085	7,873	7,086	5,996	8,433	2,607	4,619	2,388	383	157	10,910	29,796	8,928
1986	49,999	654	2,522	6,226	8,061	7,052	6,856	8,136	2,725	4,470	2,655	461	182	10,161	30,647	9,190
1991	50,748	698	2,713	6,248	7,165	7,862	7,022	8,407	2,553	4,506	2,790	561	223	10,247	31,100	9,400
1996	51,410	637	2,668	6,636	6,336	8,076	7,017	9,363	2,457	4,496	2,801	639	285	10,584	31,353	9,474
2000	52,140	607	2,544	6,757	6,275	7,682	7,661	9,764	2,564	4,372	2,907	680	328	10,572	31,977	9,591
2001	52,360	589	2,502	6,740	6,387	7,536	7,816	9,898	2,549	4,377	2,947	677	340	10,495	32,226	9,639
2002[2]	52,572	589	2,445	6,728	6,518	7,357	7,964	10,018	2,555	4,394	2,989	664	351	10,437	32,435	9,700
2003[2]	52,797	607	2,404	6,682	6,679	7,203	8,058	10,104	2,606	4,422	3,037	634	360	10,388	32,626	9,783
2004[2]	53,057	629	2,390	6,618	6,836	7,090	8,133	10,177	2,675	4,445	3,063	632	370	10,326	32,856	9,875
2005[2]	53,419	639	2,415	6,528	6,974	7,078	8,194	10,264	2,757	4,461	3,052	680	379	10,278	33,164	9,977
2006	53,729	653	2,462	6,412	7,095	7,040	8,213	10,369	2,874	4,444	3,045	740	382	10,235	33,417	10,077
Males																
1981	24,160	324	1,218	3,639	4,011	3,569	3,024	4,178	1,227	2,020	825	94	32	5,601	15,589	2,970
1986	24,311	335	1,292	3,194	4,083	3,542	3,438	4,053	1,302	1,972	951	115	35	5,208	16,031	3,072
1991	24,681	356	1,385	3,198	3,638	3,920	3,504	4,199	1,234	2,027	1,029	150	42	5,240	16,193	3,248
1996	25,030	327	1,368	3,393	3,202	4,020	3,489	4,659	1,205	2,059	1,067	182	59	5,416	16,247	3,367
2000	25,438	311	1,303	3,462	3,172	3,823	3,802	4,842	1,259	2,040	1,148	204	73	5,416	16,556	3,466
2001	25,574	301	1,281	3,453	3,231	3,758	3,881	4,907	1,252	2,052	1,175	206	77	5,376	16,688	3,510
2002[2]	25,704	301	1,249	3,448	3,311	3,672	3,957	4,958	1,253	2,067	1,202	204	81	5,346	16,804	3,554
2003[2]	25,841	312	1,230	3,425	3,399	3,594	4,007	5,002	1,276	2,085	1,229	198	85	5,324	16,920	3,597
2004[2]	25,995	323	1,225	3,394	3,493	3,538	4,036	5,037	1,310	2,100	1,248	202	89	5,295	17,060	3,640
2005[2]	26,197	327	1,237	3,348	3,565	3,530	4,073	5,080	1,351	2,113	1,256	224	94	5,270	17,241	3,685
2006	26,371	334	1,261	3,284	3,636	3,517	4,080	5,130	1,407	2,111	1,267	248	96	5,245	17,405	3,722
Females																
1981	25,474	310	1,154	3,446	3,863	3,517	2,972	4,255	1,380	2,599	1,564	289	126	5,309	14,207	5,958
1986	25,687	319	1,231	3,032	3,978	3,509	3,418	4,083	1,422	2,498	1,704	346	148	4,953	14,616	6,118
1991	26,067	342	1,328	3,050	3,527	3,943	3,517	4,208	1,319	2,479	1,761	411	181	5,007	14,908	6,152
1996	26,381	310	1,300	3,243	3,134	4,056	3,528	4,704	1,252	2,437	1,734	457	227	5,168	15,106	6,107
2000	26,702	296	1,241	3,296	3,103	3,859	3,859	4,923	1,304	2,332	1,758	476	255	5,155	15,421	6,126
2001	26,786	288	1,220	3,287	3,156	3,778	3,935	4,992	1,297	2,326	1,771	471	263	5,119	15,538	6,129
2002[2]	26,868	287	1,195	3,280	3,207	3,685	4,007	5,060	1,302	2,328	1,787	460	270	5,091	15,631	6,146
2003[2]	26,956	295	1,175	3,256	3,280	3,610	4,051	5,103	1,329	2,338	1,807	436	275	5,064	15,705	6,186
2004[2]	27,062	306	1,165	3,224	3,342	3,552	4,097	5,141	1,365	2,345	1,815	430	280	5,031	15,796	6,235
2005[2]	27,223	312	1,178	3,180	3,409	3,548	4,121	5,183	1,406	2,348	1,796	456	285	5,008	15,922	6,292
2006	27,358	319	1,201	3,127	3,458	3,523	4,134	5,239	1,466	2,333	1,778	492	286	4,990	16,012	6,355

Note: Figures may not add exactly due to rounding.

1 Between 2010 and 2020, state pension age will change from 65 years for men and 60 years for women to 65 years for both sexes.

2 2002 to 2005 mid-year population estimates for England and Wales and the United Kingdom have been updated to include the latest revised estimates that take into account improved estimates of international migration.

Tel no. for all enquiries relating to population estimates:- 01329 444661

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	16–64M/59F[1]	65M/65F[1] and over
England																
Persons																
1981	46,821	598	2,235	6,678	7,440	6,703	5,663	7,948	2,449	4,347	2,249	362	149	10,285	28,133	8,403
1986	47,188	618	2,380	5,869	7,623	6,682	6,478	7,672	2,559	4,199	2,501	435	172	9,583	28,962	8,643
1991	47,875	660	2,560	5,885	6,772	7,460	6,633	7,920	2,399	4,222	2,626	529	210	9,658	29,390	8,827
1996	48,519	603	2,523	6,255	5,985	7,667	6,638	8,822	2,310	4,217	2,631	602	269	9,985	29,639	8,895
2000	49,233	575	2,406	6,375	5,923	7,304	7,257	9,199	2,411	4,107	2,727	641	309	9,980	30,243	9,010
2001	49,450	558	2,366	6,359	6,032	7,171	7,407	9,327	2,395	4,113	2,764	638	321	9,908	30,487	9,055
2002[2]	49,652	559	2,313	6,348	6,153	7,003	7,550	9,439	2,399	4,129	2,803	625	331	9,855	30,686	9,111
2003[2]	49,866	576	2,275	6,305	6,304	6,859	7,641	9,522	2,445	4,155	2,850	596	340	9,812	30,867	9,188
2004[2]	50,111	597	2,262	6,245	6,450	6,751	7,712	9,591	2,509	4,175	2,875	593	349	9,755	31,083	9,273
2005[2]	50,466	606	2,289	6,161	6,583	6,742	7,772	9,675	2,586	4,189	2,865	638	357	9,713	31,384	9,370
2006	50,763	620	2,335	6,051	6,696	6,708	7,793	9,777	2,697	4,171	2,860	695	360	9,674	31,627	9,462
Males																
1981	22,795	306	1,147	3,430	3,790	3,377	2,856	3,938	1,154	1,902	777	89	30	5,280	14,717	2,798
1986	22,949	317	1,219	3,010	3,862	3,357	3,249	3,822	1,224	1,853	897	108	33	4,911	15,147	2,891
1991	23,291	336	1,307	3,011	3,439	3,721	3,311	3,957	1,159	1,900	970	141	39	4,938	15,302	3,050
1996	23,629	309	1,294	3,198	3,023	3,818	3,302	4,390	1,133	1,932	1,003	172	55	5,110	15,358	3,161
2000	24,030	294	1,232	3,266	2,995	3,638	3,604	4,562	1,184	1,917	1,078	192	69	5,113	15,661	3,256
2001	24,166	285	1,212	3,257	3,053	3,580	3,681	4,624	1,176	1,928	1,103	194	73	5,075	15,793	3,298
2002[2]	24,290	286	1,182	3,253	3,127	3,500	3,755	4,673	1,176	1,942	1,128	193	77	5,047	15,904	3,339
2003[2]	24,419	296	1,163	3,232	3,209	3,425	3,803	4,715	1,197	1,958	1,154	186	80	5,028	16,012	3,379
2004[2]	24,563	306	1,159	3,202	3,297	3,371	3,831	4,748	1,228	1,972	1,172	190	84	5,001	16,143	3,419
2005[2]	24,758	310	1,172	3,160	3,365	3,365	3,868	4,791	1,267	1,984	1,179	210	88	4,979	16,317	3,461
2006	24,926	317	1,196	3,100	3,432	3,353	3,875	4,839	1,320	1,981	1,190	233	91	4,957	16,475	3,494
Females																
1981	24,026	292	1,088	3,248	3,650	3,327	2,807	4,009	1,295	2,445	1,472	273	119	5,004	13,416	5,605
1986	24,239	301	1,161	2,859	3,761	3,325	3,229	3,850	1,335	2,346	1,604	326	140	4,672	13,815	5,752
1991	24,584	324	1,253	2,873	3,333	3,739	3,322	3,964	1,239	2,323	1,656	388	171	4,720	14,088	5,777
1996	24,890	293	1,229	3,056	2,961	3,849	3,336	4,432	1,177	2,286	1,628	430	214	4,876	14,281	5,734
2000	25,203	281	1,174	3,109	2,928	3,667	3,653	4,637	1,227	2,190	1,649	448	240	4,867	14,582	5,755
2001	25,284	273	1,154	3,102	2,979	3,591	3,726	4,702	1,219	2,185	1,661	444	248	4,834	14,694	5,757
2002[2]	25,362	273	1,131	3,095	3,026	3,503	3,795	4,767	1,223	2,187	1,676	433	254	4,808	14,782	5,772
2003[2]	25,448	280	1,112	3,073	3,095	3,433	3,838	4,808	1,248	2,197	1,696	410	260	4,784	14,854	5,809
2004[2]	25,548	291	1,103	3,043	3,153	3,380	3,881	4,843	1,280	2,203	1,703	403	264	4,753	14,940	5,854
2005[2]	25,708	296	1,117	3,001	3,218	3,378	3,905	4,885	1,319	2,206	1,686	428	269	4,733	15,066	5,908
2006	25,837	303	1,139	2,952	3,264	3,355	3,918	4,938	1,377	2,190	1,670	461	270	4,717	15,152	5,968
Wales																
Persons																
1981	2,813	36	136	407	434	383	333	485	158	272	139	21	8	626	1,663	525
1986	2,811	37	143	357	438	369	378	464	166	271	154	26	10	578	1,686	547
1991	2,873	38	153	363	393	402	389	486	154	284	164	32	13	589	1,711	573
1996	2,891	34	146	381	352	409	379	541	147	279	170	37	17	598	1,714	578
2000	2,907	32	138	383	352	378	403	565	152	265	180	39	19	591	1,734	581
2001	2,910	32	136	382	356	365	409	572	154	264	183	39	20	587	1,739	584
2002[2]	2,920	30	132	380	365	354	414	578	156	265	185	39	20	582	1,749	589
2003[2]	2,931	31	129	377	376	345	417	582	161	268	187	38	21	577	1,759	595
2004[2]	2,946	32	127	373	385	339	421	586	166	270	188	39	21	572	1,773	602
2005[2]	2,954	32	126	367	390	335	421	589	171	271	186	42	21	566	1,780	608
2006	2,966	33	127	361	399	332	421	592	177	273	186	45	22	561	1,790	615
Males																
1981	1,365	18	70	209	221	193	168	240	73	118	48	5	2	321	871	173
1986	1,362	19	73	184	221	186	190	231	79	119	54	7	2	297	885	181
1991	1,391	20	78	186	199	199	194	242	74	128	60	8	2	302	891	198
1996	1,401	17	74	195	179	203	187	269	72	128	64	10	3	306	890	206
2000	1,408	16	71	196	177	185	198	280	75	124	71	12	4	303	895	210
2001	1,409	16	69	196	179	178	200	283	75	124	73	12	4	301	895	212
2002[2]	1,414	16	68	195	184	172	202	285	77	125	74	12	5	299	900	215
2003[2]	1,423	16	66	194	190	168	204	287	79	127	75	11	5	296	908	218
2004[2]	1,432	16	65	192	196	166	205	288	82	128	76	12	5	294	917	221
2005[2]	1,439	17	65	189	200	166	205	290	84	129	77	13	5	291	924	224
2006	1,445	17	65	185	204	164	205	291	87	130	77	15	5	288	929	227
Females																
1981	1,448	18	66	199	213	190	165	246	85	154	91	16	6	305	791	352
1986	1,449	18	70	173	217	184	188	233	87	152	100	20	8	282	801	366
1991	1,482	19	75	177	194	203	195	244	80	156	104	24	10	288	820	375
1996	1,490	16	71	186	173	206	192	272	75	151	106	27	13	293	825	373
2000	1,499	15	67	186	175	192	206	285	77	142	109	28	15	288	840	371
2001	1,502	15	66	186	177	187	209	289	78	141	110	27	15	286	844	372
2002[2]	1,506	15	65	185	181	182	212	293	80	140	111	27	16	283	849	374
2003[2]	1,508	15	63	183	185	176	214	295	82	141	112	27	16	280	851	377
2004[2]	1,514	15	62	182	189	172	216	298	84	142	112	26	16	278	856	380
2005[2]	1,515	16	61	179	191	170	216	299	87	142	110	28	16	275	856	383
2006	1,521	16	62	176	195	168	216	301	90	143	108	30	16	273	861	387

See notes on first page of table.

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	16–64M/59F[1]	65M/60F[1] and over
Scotland																
Persons																
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
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
2005	5,095	54	211	600	659	629	794	1,042	273	457	286	59	32	929	3,191	975
2006	5,117	55	213	588	668	627	790	1,058	280	456	287	63	32	922	3,213	983
Males																
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
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
2005	2,456	28	107	307	335	309	382	511	131	208	112	18	7	476	1,635	345
2006	2,469	28	109	301	340	310	380	517	135	208	113	20	8	472	1,649	349
Females																
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
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
2005	2,639	26	103	293	324	320	411	531	142	249	174	41	25	453	1,556	630
2006	2,647	27	104	287	328	317	410	541	145	247	174	43	25	450	1,564	634
Northern Ireland																
Persons																
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
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
2005	1,724	23	88	245	253	228	257	310	84	128	83	17	8	381	1,064	280
2006	1,742	23	89	242	258	229	259	316	87	130	83	18	8	380	1,077	284
Males																
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
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	57	31	5	2	199	538	95
2004	836	11	45	127	128	113	125	151	39	58	32	5	2	197	542	97
2005	844	12	45	126	130	113	126	153	41	59	32	5	2	196	550	99
2006	853	12	46	124	132	113	127	156	42	60	33	6	2	195	558	101
Females																
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
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
2005	880	11	43	119	123	115	131	157	43	69	50	11	6	186	514	181
2006	888	11	43	118	126	115	132	160	45	69	51	12	6	185	520	183

See notes on first page of table.

Table 1.5 Population: age, sex and legal marital status

England and Wales — Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
Aged											
16 and over											
1971	36,818	4,173	12,522	187	682	17,563	3,583	12,566	296	2,810	19,255
1976	37,486	4,369	12,511	376	686	17,941	3,597	12,538	533	2,877	19,545
1981	38,724	5,013	12,238	611	698	18,559	4,114	12,284	828	2,939	20,165
1986	39,837	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
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[1]	42,135	7,086	11,008	1,534	730	20,358	5,957	11,075	2,036	2,710	21,777
2003[1]	42,409	7,272	10,929	1,589	727	20,517	6,126	11,000	2,096	2,669	21,892
2004[1]	42,731	7,483	10,851	1,642	724	20,700	6,311	10,935	2,156	2,629	22,031
2005[1]	43,141	7,708	10,801	1,696	722	20,927	6,529	10,882	2,215	2,589	22,214
2006	43,494	7,944	10,723	1,739	720	21,126	6,740	10,812	2,266	2,549	22,367
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
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[1]	2,630	1,352	4	1	1	1,357	1,259	13	1	1	1,273
2003[1]	2,703	1,392	4	1	1	1,397	1,293	12	0	1	1,306
2004[1]	2,771	1,424	3	0	0	1,428	1,332	11	0	0	1,343
2005[1]	2,801	1,434	2	0	0	1,436	1,355	9	0	0	1,365
2006	2,829	1,457	2	0	0	1,459	1,364	7	0	0	1,370
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
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[1]	3,212	1,533	69	3	1	1,606	1,430	167	8	1	1,606
2003[1]	3,281	1,573	68	3	1	1,645	1,465	161	8	1	1,636
2004[1]	3,376	1,639	69	3	1	1,712	1,497	157	8	2	1,664
2005[1]	3,477	1,700	66	3	1	1,771	1,547	150	8	2	1,706
2006	3,558	1,749	59	3	1	1,812	1,599	138	7	1	1,746
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
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[1]	3,365	1,286	375	26	1	1,688	1,054	568	52	3	1,676
2003[1]	3,284	1,281	340	25	1	1,647	1,060	527	49	2	1,638
2004[1]	3,280	1,297	319	24	1	1,641	1,089	501	47	2	1,639
2005[1]	3,354	1,344	307	23	1	1,675	1,143	488	46	2	1,679
2006	3,434	1,400	295	23	1	1,718	1,198	471	46	2	1,716

1 2002 to 2005 mid-year population estimates for England and Wales have been updated to include the latest revised estimates that take into account improved estimates of international migration.

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

England and Wales — Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
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
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[1]	3,992	959	918	105	2	1,984	742	1,093	167	6	2,009
2003[1]	3,919	979	864	102	2	1,947	766	1,041	159	6	1,972
2004[1]	3,810	988	810	97	2	1,897	777	982	149	5	1,913
2005[1]	3,724	1,002	761	92	2	1,856	791	933	139	5	1,868
2006	3,606	1,010	703	84	2	1,799	800	876	127	5	1,808
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
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[1]	7,964	1,031	2,490	424	12	3,957	751	2,650	572	35	4,007
2003[1]	8,058	1,089	2,471	435	12	4,007	804	2,631	583	34	4,051
2004[1]	8,133	1,141	2,441	443	11	4,036	858	2,613	593	32	4,097
2005[1]	8,194	1,195	2,417	450	11	4,073	910	2,583	597	31	4,121
2006	8,213	1,249	2,371	448	11	4,080	965	2,543	595	30	4,134
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
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[1]	12,573	670	4,642	779	120	6,211	413	4,597	960	391	6,362
2003[1]	12,710	702	4,643	814	119	6,278	437	4,612	1,002	381	6,432
2004[1]	12,852	736	4,643	850	117	6,347	465	4,625	1,045	371	6,505
2005[1]	13,021	774	4,652	888	117	6,431	497	4,642	1,090	362	6,590
2006	13,243	818	4,676	926	117	6,537	535	4,677	1,138	356	6,706
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
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[1]	8,398	255	2,508	196	594	3,554	309	1,987	276	2,272	4,844
2003[1]	8,454	257	2,538	210	593	3,597	301	2,017	295	2,245	4,857
2004[1]	8,510	258	2,566	224	592	3,640	293	2,046	314	2,216	4,870
2005[1]	8,571	260	2,596	239	590	3,685	286	2,077	335	2,187	4,885
2006	8,611	261	2,618	254	589	3,722	279	2,101	353	2,155	4,889

See notes on first page of table.

Table 2.1 Vital statistics summary

Constituent countries of the United Kingdom — Numbers (thousands) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Civil Partnerships		Divorces		Deaths		Infant mortality[6]		Neonatal mortality[7]		Perinatal mortality[8]	
	Number	Rate[1]	Number	Rate[2]	Number	Rate[3]	Number	Rate[4]	Number	Rate[5]	Number	Rate[1]	Number	Rate[2]	Number	Rate[2]	Number	Rate[9]
United Kingdom																		
1976	675.5	12.0	61.1	90	406.0	..	:	:	135.4	..	680.8	12.1	9.79	14.5	6.68	9.9	12.25	18.0
1981	730.7	13.0	91.3	125	397.8	49.4	:	:	156.4	11.3	658.0	11.7	8.16	11.2	4.93	6.7	8.79	12.0
1986	754.8	13.3	154.3	204	393.9	..	:	:	168.2	..	660.7	11.7	7.18	9.5	4.00	5.3	7.31	9.6
1991	792.3	13.8	236.1	298	349.7	..	:	:	173.5	..	646.2	11.2	5.82	7.4	3.46	4.4	6.45	8.1
1996	733.2	12.6	260.4	355	317.5	..	:	:	171.7	..	636.0	10.9	4.50	6.1	3.00	4.1	6.41	8.7
1999	700.0	11.9	271.6	388	301.1	..	:	:	158.7	..	632.1	10.8	4.05	5.8	2.73	3.9	5.79	8.2
2000	679.0	11.5	268.1	395	305.9	..	:	:	154.6	..	608.4	10.3	3.81	5.6	2.63	3.9	5.56	8.1
2001	669.1	11.3	268.0	401	286.1	..	:	:	156.8	..	602.3	10.2	3.66	5.5	2.44	3.7	5.39	8.0
2002	668.8	11.3	271.7	406	293.0	..	:	:	160.5	..	606.2	10.2	3.54	5.3	2.37	3.6	5.53	8.2
2003	695.6	11.7	288.5	415	308.6	..	:	:	166.7	..	612.0	10.3	3.69	5.3	2.54	3.7	5.92	8.5
2004	716.0	12.0	302.6	423	313.6	..	:	:	167.1	..	583.1	9.7	3.66	5.1	2.49	3.5	5.88	8.2
2005	722.5	12.0	310.2	429	286.8	..	1.95[10]	..	155.1	..	582.7	9.7	3.68	5.1	2.52	3.5	5.78	8.0
2006	748.6	12.4	326.8	437	275.1[P]	..	16.11	..	148.1	..	572.2	9.4	3.74	5.0	2.61	3.5	5.94	7.9
2007	772.2[P]	12.7[P]	343.2[P]	444[P]	..	..	8.73[P]	..	..	..	574.7[P]	9.4[P]	3.74[P]	4.8[P]	2.55[P]	3.3[P]	5.97[P]	7.7[P]
2005 March	173.2	11.7	74.5	430	35.2	..	:	:	39.4	..	165.1	11.1	0.91	5.3	0.63	3.6	1.39	8.0
June	179.0	11.9	75.0	419	79.0	..	:	:	40.0	..	141.1	9.5	0.94	5.3	0.63	3.5	1.53	8.5
Sept	190.3	12.5	82.5	434	121.1	..	:	:	38.9	..	130.9	8.7	0.92	4.8	0.66	3.5	1.49	7.8
Dec	180.1	11.9	78.2	434	51.5	..	1.95[10]	..	36.7	..	145.5	9.7	0.90	5.0	0.59	3.3	1.38	7.6
2006 March	178.9	12.0	77.5	433	30.2[P]	..	4.87	..	37.7	..	159.9	10.7	0.90	5.1	0.61	3.4	1.45	8.1
June	186.0	12.3	80.2	431	76.4[P]	..	4.36	..	36.7	..	141.4	9.4	0.94	5.0	0.65	3.5	1.50	8.0
Sept	195.2	12.8	85.8	439	120.7[P]	..	4.49	..	37.0	..	130.7	8.6	0.93	4.8	0.67	3.4	1.54	7.8
Dec	188.5	12.3	83.3	442	47.8[P]	..	2.38	..	36.7	..	140.2	9.2	0.97	5.2	0.68	3.6	1.45	7.7
2007 March	184.4[P]	12.3[P]	81.9[P]	444[P]	..	..	1.69[P]	..	..	..	159.3[P]	10.6[P]	0.91[P]	4.9[P]	0.64[P]	3.4[P]	1.47[P]	7.9[P]
June	189.8[P]	12.5[P]	82.6[P]	435[P]	..	..	2.37[P]	..	..	..	138.0[P]	9.1[P]	0.99[P]	5.2[P]	0.66[P]	3.5[P]	1.52[P]	8.0[P]
Sept	202.8[P]	13.3[P]	90.5[P]	446[P]	..	..	2.96[P]	..	..	..	129.9[P]	8.4[P]	0.87[P]	4.3[P]	0.59[P]	2.9[P]	1.50[P]	7.3[P]
Dec	195.3[P]	12.7[P]	88.1[P]	451[P]	..	..	1.71[P]	..	..	..	147.5[P]	9.6[P]	0.88[P]	4.5[P]	0.60[P]	3.1[P]	1.49[P]	7.6[P]
England and Wales																		
1976	584.3	11.8	53.8	92	358.6	57.7	:	:	126.7	10.1	598.5	12.1	8.34	14.3	5.66	9.7	10.45	17.7
1981	634.5	12.8	81.0	128	352.0	49.6	:	:	145.7	11.9	577.9	11.6	7.02	11.1	4.23	6.7	7.56	11.8
1986	661.0	13.2	141.3	214	347.9	43.6	:	:	153.9	12.9	581.2	11.6	6.31	9.6	3.49	5.3	6.37	9.6
1991	699.2	13.8	211.3	302	306.8	36.0	:	:	158.7	13.5	570.0	11.2	5.16	7.4	3.05	4.4	5.65	8.0
1996	649.5	12.6	232.7	358	279.0	30.9	:	:	157.1	13.8	560.1	10.9	3.99	6.1	2.68	4.1	5.62	8.6
1999	621.9	12.0	241.9	389	263.5	27.8	:	:	144.6	12.9	556.1	10.7	3.62	5.8	2.44	3.9	5.14	8.2
2000	604.4	11.6	238.6	395	268.0	27.8	:	:	141.1	12.7	535.7	10.3	3.38	5.6	2.34	3.9	4.96	8.2
2001	594.6	11.4	238.1	400	249.2	25.4	:	:	143.8	12.9	530.4	10.1	3.24	5.4	2.14	3.6	4.76	8.0
2002	596.1	11.3	242.0	406	255.6	25.6	:	:	147.7	13.4	533.5	10.1	3.13	5.2	2.13	3.6	4.99	8.3
2003	621.5	11.8	257.2	414	270.1	26.4	:	:	153.5	14.0	538.3	10.2	3.31	5.3	2.26	3.6	5.36	8.6
2004	639.7	12.1	269.7	422	273.1	26.1	:	:	153.4	14.1	512.5	9.7	3.22	5.0	2.21	3.5	5.39	8.4
2005	645.8	12.1	276.5	428	247.8	23.1	1.86[10]	5.7[10]	141.8	13.1	512.7	9.7	3.26	5.0	2.23	3.4	5.21	8.0
2006	669.6	12.5	291.4	435	237.0[P]	21.6[P]	14.94	1.4	132.6	12.2	502.6	9.4	3.37	5.0	2.35	3.5	5.36	8.0
2007	690.0	12.8[P]	305.6	443	..	..	7.93	0.7[P]	..	..	504.1	9.3[P]	3.35	4.8	2.28	3.3	5.35[P]	7.7[P]
2005 March	154.3	11.7	66.3	430	30.4	11.5	:	:	36.2	13.6	145.7	11.0	0.85	5.5	0.57	3.7	1.25	8.0
June	159.8	12.0	66.6	417	68.2	25.5	:	:	36.5	13.5	123.8	9.4	0.82	5.2	0.56	3.5	1.35	8.4
Sept	170.2	12.6	73.7	433	105.3	38.9	:	:	35.6	13.0	114.7	8.6	0.79	4.6	0.57	3.4	1.34	7.8
Dec	161.7	12.0	69.9	433	44.0	16.3	1.86[10]	5.7[10]	33.4	12.2	128.5	9.6	0.80	4.9	0.52	3.2	1.28	7.9
2006 March	159.5	12.0	68.7	431	25.8[P]	9.5[P]	4.58	1.7	34.3	12.8	141.0	10.6	0.82	5.2	0.56	3.5	1.32	8.2
June	166.2	12.4	71.4	430	65.9[P]	24.1[P]	4.01	1.5	33.0	12.2	123.9	9.2	0.84	5.1	0.58	3.5	1.37	8.2
Sept	174.9	12.9	76.8	439	105.5[P]	38.1[P]	4.18	1.5	32.9	12.0	114.6	8.5	0.85	4.8	0.60	3.4	1.38	7.9
Dec	169.0	12.5	74.5	441	40.4[P]	14.6[P]	2.18	0.8	32.4	11.8	123.1	9.1	0.86	5.1	0.60	3.6	1.30	7.6
2007 March	164.0	12.3[P]	72.5	442	..	..	1.55	0.6[P]	34.7[P]	13.1[P]	139.3	10.4[P]	0.80	4.9	0.56	3.4	1.30[P]	7.9[P]
June	169.5	12.6[P]	73.5	434	..	..	2.16	0.8[P]	33.1[P]	12.3[P]	121.0	9.0[P]	0.88	5.2	0.60	3.5	1.36[P]	8.0[P]
Sept	181.4	13.3[P]	80.8	445	..	..	2.68	1.0[P]	32.9[P]	12.2[P]	114.0	8.4[P]	0.84	4.6	0.57	3.1	1.35[P]	7.4[P]
Dec	175.0	12.8[P]	78.7	450	..	..	1.54	0.6[P]	..	..	129.7	9.5[P]	0.83	4.7	0.56	3.2	1.34[P]	7.6[P]
England																		
1976	550.4	11.8	50.8	92	339.0	..	:	:	..	..	560.3	12.0	7.83	14.2	5.32	9.7	9.81	17.6
1981	598.2	12.8	76.9	129	332.2	..	:	:	..	..	541.0	11.6	6.50	10.9	3.93	6.6	7.04	11.7
1986	623.6	13.2	133.5	214	328.4	..	:	:	146.0	..	544.5	11.6	5.92	9.5	3.27	5.2	5.98	9.5
1991	660.8	13.8	198.9	301	290.1	..	:	:	150.1	..	534.0	11.2	4.86	7.3	2.87	4.3	5.33	8.0
1996	614.2	12.7	218.2	355	264.2	..	:	:	148.7	..	524.0	10.8	3.74	6.1	2.53	4.1	5.36	8.7
1999	589.5	12.0	226.7	385	249.5	..	:	:	137.0	..	519.6	10.8	3.38	5.7	2.29	3.9	4.86	8.2
2000	572.8	11.7	223.8	391	253.8	..	:	:	133.9	..	501.0	10.2	3.18	5.6	2.21	3.9	4.69	8.2
2001	563.7	11.4	223.3	396	236.2	..	:	:	136.4	..	496.1	10.0	3.04	5.4	2.02	3.6	4.51	8.0
2002	565.7	11.4	227.0	401	242.1	..	:	:	140.2	..	499.1	10.1	2.97	5.2	2.02	3.6	4.75	8.3
2003	589.9	11.8	241.4	409	255.6	..	:	:	145.8	..	503.4	10.1	3.14	5.3	2.15	3.7	5.09	8.6
2004	607.2	12.1	253.1	417	258.2	..	:	:	145.5	..	479.2	9.6	3.03	5.0	2.09	3.4	5.10	8.4
2005	613.0	12.1	259.4	423	233.8	..	1.79[10]	..	134.6	..	479.4	9.6	3.10	5.0	2.12	3.5	4.92	8.0
2006	635.7	12.5	273.5	430	223.5[P]	..	14.38	..	125.6	..	470.3	9.3	3.19	5.0	2.24	3.5	5.11	8.0
2007	655.4	12.8[P]	287.0	438[P]	..	..	7.64	..	..	..	470.7	9.2[P]	3.13	4.8	2.15	3.3	5.08[P]	7.7[P]
2005 March	146.4	11.8	62.1	424	28.8	..	:	:	34.4	..	136.2	10.9	0.81	5.6	0.54	3.7	1.18	8.0
June	151.8	12.1	62.5	412	64.3	..	:	:	34.7	..	115.7	9.3	0.78	5.1	0.53	3.5	1.28	8.4
Sept	161.4	12.7	69.1	428	99.3	..	:	:	33.8	..	107.3	8.5	0.75	4.7	0.55	3.4	1.27	7.8
Dec	153.4	12.1	65.6	428	41.4	..	1.79[10]	..	31.7	..	120.3	9.6	0.75	4.9	0.50	3.3	1.18	7.7
2006 March	151.4	12.1	64.5	426	24.4[P]	..	4.42	..	32.5	..	132.0	10.5	0.79	5.2	0.54	3.6	1.26	8.3
June	157.8	12.5	67.0	425	62.1[P]	..	3.86	..	31.2	..	115.9	9.2	0.80	5.1	0.56	3.5	1.31	8.2
Sept	166.0	13.0	72.0	434	99.5[P]	..	4.02	..	31.2	..	107.1	8.4	0.80	4.8	0.57	3.4	1.31	7.8
Dec	160.5	12.5	70.0	436	38.2[P]	..	2.09	..	30.7	..	115.3	9.0	0.81	5.0	0.57	3.6	1.24	7.7
2007 March	155.9	12.4[P]	68.1	437	..	..	1.49	..	32.8[P]	..	130.3	10.3[P]	0.74	4.7	0.52	3.3	1.22[P]	7.8[P]
June	161.0	12.6[P]	69.0	429	..	..	2.06	..	31.4[P]	..	112.9	8.9[P]	0.84	5.2	0.57	3.5	1.30[P]	8.0[P]
Sept	172.2	13.4[P]	75.9	441	..	..	2.60	..	31.3[P]	..	106.4	8.3[P]	0.79	4.6	0.54	3.1	1.29[P]	7.4[P]
Dec	166.3	12.9[P]	74.0	445	..	..	1.48	..	..	..	121.2	9.4[P]	0.76	4.6	0.53	3.2	1.27[P]	7.8[P]

Note: Death 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 2005. Death figures for 2006 and provisional death figures for 2007 relate to registrations.
Birth and death figures for England and also for Wales each exclude events for persons usually resident outside England and Wales. These events are, however, included in the 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 for the United Kingdom.
Infant, neonatal and perinatal mortality rates for Northern Ireland have now been amended to take account of the non-resident livebirths.
Quarterly birth and death rates are calculated using seasonal adjustments which take into account the number of days in the month/year. Rates for 2007 and 2008 are based on 2006-based population projections for 2007. Marriage, civil partnership and divorce rates for 2007 and 2008 are based on 2006 marital status estimates.

Table 2.1 continued **Vital statistics summary**

Constituent countries of the United Kingdom — Numbers (thousands) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Civil Partnerships		Divorces		Deaths		Infant mortality[6]		Neonatal mortality[7]		Perinatal mortality[8]	
	Number	Rate[1]	Number	Rate[2]	Number	Rate[3]	Number	Rate[4]	Number	Rate[5]	Number	Rate[1]	Number	Rate[2]	Number	Rate[2]	Number	Rate[9]
Wales																		
1976	33.4	11.9	2.9	86	19.5	..	:	:	..	..	36.3	13.0	0.46	13.7	0.32	9.6	0.64	19.0
1981	35.8	12.7	4.0	112	19.8	..	:	:	..	..	35.0	12.4	0.45	12.6	0.29	8.1	0.51	14.1
1986	37.0	13.2	7.8	211	19.5	..	:	:	7.8	..	34.7	12.3	0.35	9.5	0.21	5.6	0.38	10.3
1991	38.1	13.3	12.3	323	16.6	..	:	:	8.4	..	34.1	11.9	0.25	6.6	0.16	4.1	0.30	7.9
1996	34.9	12.1	14.4	412	14.8	..	:	:	8.4	..	34.6	12.0	0.20	5.6	0.13	3.6	0.26	7.5
1999	32.1	11.1	14.8	461	14.0	..	:	:	7.5	..	35.0	12.1	0.20	6.1	0.13	4.0	0.25	7.7
2000	31.3	10.8	14.8	472	14.1	..	:	:	7.2	..	33.3	11.5	0.17	5.3	0.11	3.5	0.23	7.2
2001	30.6	10.5	14.8	483	13.0	..	:	:	7.4	..	33.0	11.3	0.16	5.4	0.11	3.5	0.23	7.5
2002	30.2	10.3	15.0	497	13.5	..	:	:	7.6	..	33.2	11.4	0.14	4.5	0.10	3.2	0.24	7.7
2003	31.4	10.7	15.8	503	14.5	..	:	:	7.7	..	33.7	11.5	0.13	4.3	0.10	3.1	0.24	7.6
2004	32.3	11.0	16.6	513	14.9	..	:	:	7.9	..	32.1	10.9	0.16	4.9	0.10	3.1	0.26	8.0
2005	32.6	11.0	17.1	524	14.0	..	0.07[10]	..	7.2	..	32.1	10.9	0.13	4.1	0.09	2.9	0.24	7.4
2006	33.6	11.3	17.8	530	13.5[P]	..	0.56	..	6.9	..	31.1	10.5	0.14	4.1	0.09	2.8	0.23	6.9
2007	34.4	11.6[P]	18.5	538	..	..	0.29	..	..	..	32.1	10.8	0.18	5.3	0.12	3.4[P]	0.25[P]	7.3[P]
2005 March	7.8	10.8	4.1	529	1.6	..	:	:	1.8	..	9.3	12.6	0.03	4.2	0.02	3.1	0.06	7.7
June	7.9	10.7	4.0	510	3.9	..	:	:	1.8	..	7.8	10.6	0.03	4.2	0.03	3.2	0.06	7.9
Sept	8.7	11.6	4.6	530	6.0	..	:	:	1.8	..	7.1	9.6	0.03	3.3	0.02	2.8	0.06	7.0
Dec	8.2	11.0	4.3	527	2.5	..	0.07[10]	..	1.8	..	7.9	10.7	0.04	4.6	0.02	2.6	0.06	6.8
2006 March	8.1	11.1	4.2	520	1.4[P]	..	0.16	..	1.8	..	8.7	11.9	0.03	3.1	0.02	2.0	0.06	7.0
June	8.3	11.2	4.3	523	3.8[P]	..	0.15	..	1.7	..	7.6	10.3	0.03	4.1	0.02	2.4	0.05	6.3
Sept	8.8	11.8	4.8	543	6.0[P]	..	0.16	..	1.7	..	7.2	9.7	0.04	4.0	0.03	3.1	0.07	7.7
Dec	8.4	11.2	4.5	535	2.2[P]	..	0.09	..	1.7	..	7.5	10.1	0.04	5.1	0.03	3.6	0.06	6.6
2007 March	8.1	11.0[P]	4.3	536	..	..	0.06	..	1.8[P]	..	8.8[P]	11.9[P]	0.05	6.3	0.03	3.7	0.07[P]	9.0[P]
June	8.5	11.4[P]	4.5	530	..	..	0.10	..	1.8[P]	..	7.9[P]	10.6[P]	0.04	4.5	0.02	2.8	0.06[P]	6.8[P]
Sept	9.1	12.2[P]	4.9	541	..	..	0.08	..	1.7[P]	..	7.3[P]	9.7[P]	0.04	4.4	0.03	2.8	0.05[P]	5.7[P]
Dec	8.7	11.6[P]	4.8	547	..	..	0.06	..	..	..	8.3[P]	11.0[P]	0.05	6.1	0.04	4.1	0.07[P]	7.9[P]
Scotland																		
1976	64.9	12.5	6.0	93	37.5	53.8	:	:	8.1	6.5	65.3	12.5	0.96	14.8	0.67	10.3	1.20	18.3
1981	69.1	13.4	8.5	122	36.2	47.5	:	:	9.9	8.0	63.8	12.3	0.78	11.3	0.47	6.9	0.81	11.6
1986	65.8	12.9	13.6	206	35.8	42.9	:	:	12.8	10.7	63.5	12.4	0.58	8.8	0.34	5.2	0.67	10.2
1991	67.0	13.2	19.5	291	33.8	39.0	:	:	12.4	10.6	61.0	12.0	0.47	7.1	0.29	4.6	0.58	8.6
1996	59.3	11.6	21.4	360	30.2	33.2	:	:	12.3	10.9	60.7	11.9	0.37	6.2	0.23	3.9	0.55	9.2
1999	55.1	10.9	22.7	412	29.9	31.5	:	:	11.9	10.9	60.3	11.9	0.28	5.0	0.18	3.3	0.42	7.6
2000	53.1	10.5	22.6	426	30.4	31.6	:	:	11.1	10.3	57.8	11.4	0.31	5.7	0.21	4.0	0.45	8.4
2001	52.5	10.4	22.8	433	29.6	31.0	:	:	10.6	9.7	57.4	11.3	0.29	5.5	0.20	3.8	0.45	8.5
2002	51.3	10.1	22.5	440	29.8	30.8	:	:	10.8	10.0	58.1	11.5	0.27	5.3	0.16	3.2	0.39	7.6
2003	52.4	10.4	23.9	455	30.8	31.3	:	:	10.1	10.2	58.5	11.6	0.27	5.1	0.18	3.4	0.42	8.0
2004	54.0	10.6	25.2	467	32.2	32.2	:	:	11.2	10.5	56.2	11.1	0.27	4.9	0.17	3.1	0.44	8.1
2005	54.4	10.7	25.6	471	30.9	30.3	0.08[10]	2.5[10]	10.9	10.3	55.7	11.0	0.28	5.2	0.19	3.5	0.42	7.7
2006	55.7	10.9	26.6	477	29.9	28.7	1.05	1.0	13.0	12.3	55.1	10.8	0.25	4.5	0.17	3.1	0.42	7.4
2007	57.8	11.2[P]	28.4	491	29.9	28.7[P]	0.69	0.7[P]	12.7	12.0[P]	56.0	10.9[P]	0.27	4.7	0.19	3.2	0.45[P]	7.8[P]
2005 March	13.4	10.6	6.2	464	3.8	15.3	:	:	2.6	10.0	15.6	12.4	0.07	5.0	0.04	3.3	0.09	7.0
June	13.6	10.7	6.4	472	8.6	34.0	:	:	2.8	10.7	13.7	10.8	0.07	5.1	0.05	3.4	0.13	9.2
Sept	14.2	11.1	6.7	471	12.3	48.0	:	:	2.7	10.1	12.8	10.0	0.08	5.6	0.06	3.9	0.11	7.6
Dec	13.2	10.3	6.3	477	6.1	23.7	0.08[10]	2.5[10]	2.8	10.3	13.6	10.7	0.07	5.2	0.05	3.4	0.10	7.1
2006 March	13.6	10.8	6.6	487	3.5	13.6	0.26	1.0	2.6	10.1	14.9[P]	11.8	0.05	3.7	0.03	2.4	0.09	6.7
June	14.0	11.0	6.7	475	8.3	32.1	0.32	1.2	3.1	11.7	13.9[P]	10.9	0.07	5.0	0.05	3.3	0.09	6.4
Sept	14.2	11.0	6.7	471	12.2	46.4	0.28	1.1	3.6	13.4	12.7[P]	9.8	0.05	3.8	0.04	2.9	0.11	7.8
Dec	13.9	10.8	6.6	477	5.9	22.4	0.19	0.7	3.7	14.1	13.6[P]	10.6	0.07	5.3	0.04	3.7	0.12	8.7
2007 March	14.2	11.2[P]	7.1	501	3.3	13.0[P]	0.11	0.4[P]	33.1	12.7[P]	15.8	12.5[P]	0.07	4.9	0.05	3.6	0.12[P]	8.1[P]
June	14.3	11.1[P]	6.9	482	8.1	31.4[P]	0.18	0.7[P]	33.3	12.6[P]	13.4	10.5[P]	0.08	5.3	0.05	3.4	0.12[P]	8.6[P]
Sept	14.9	11.7[P]	7.2	485	12.6	48.1[P]	0.25	0.9[P]	29.7	11.2[P]	12.6	9.7[P]	0.07	4.6	0.05	3.0	0.11[P]	7.1[P]
Dec	14.4	11.1[P]	7.1	497	5.8	22.0[P]	0.15	0.6[P]	30.9	11.6[P]	14.2	10.9[P]	0.06	3.9	0.04	2.9	0.11[P]	7.5[P]
2008 March	15.1[P]	11.9[P]	7.7[P]	507[P]	3.4[P]	13.4[P]	0.10[P]	0.4[P]	27.6[P]	10.6[P]	..	..	..	..	..	..	..	..
Northern Ireland																		
1976	26.4	17.3	1.3	50	9.9	..	:	:	0.6	..	17.0	11.2	0.48	18.3	0.35	13.3	0.59	22.3
1981	27.2	17.6	1.9	70	9.6	45.4	:	:	1.4	4.2	16.3	10.6	0.36	13.2	0.23	8.3	0.42	15.3
1986	28.0	17.8	3.6	128	10.2	..	:	:	1.5	..	16.1	10.3	0.36	13.2	0.23	8.3	0.42	15.3
1991	26.0	16.2	5.3	203	9.2	..	:	:	2.3	..	15.1	9.4	0.19	7.4	0.12	4.6	0.22	8.4
1996	24.4	14.7	6.3	260	8.3	..	:	:	2.3	..	15.2	9.2	0.14	5.8	0.09	3.7	0.23	9.4
1999	23.0	13.7	7.0	303	7.6	..	:	:	2.3	..	15.7	9.3	0.15	6.4	0.11	4.8	0.23	10.0
2000	21.5	12.8	6.8	318	7.6	..	:	:	2.4	..	14.9	8.9	0.11	5.0	0.08	3.8	0.16	7.2
2001	22.0	13.0	7.1	325	7.3	..	:	:	2.4	..	14.5	8.6	0.13	6.0	0.10	4.5	0.19	8.4
2002	21.4	12.6	7.2	335	7.6	..	:	:	2.2	..	14.6	8.6	0.10	4.6	0.07	3.5	0.19	8.7
2003	21.6	12.7	7.4	344	7.8	..	:	:	2.3	..	14.5	8.5	0.12	5.2	0.09	4.0	0.18	8.0
2004	22.3	13.0	7.7	345	8.3	..	:	:	2.5	..	14.4	8.4	0.12	5.5	0.08	3.7	0.19	8.0
2005	22.3	12.9	8.1	363	8.1	..	0.01[10]	..	2.4	..	14.2	8.3	0.14	6.1	0.11	4.9	0.19	8.1
2006	23.3	13.4	8.8	380	8.3	..	0.12	..	2.6	..	14.5	8.4	0.12	5.1	0.09	3.8	0.17	6.9
2007	24.5[P]	13.9[P]	9.3[P]	379[P]	8.7[P]	..	0.11[P]	..	2.9[P]	..	14.6[P]	8.3[P]	0.12[P]	4.9[P]	0.08[P]	3.2[P]	0.17[P]	6.9[P]
2005 March	5.5	13.0	2.0	363	0.9	..	:	:	0.6	..	3.8	8.9	0.03	5.1	0.02	4.0	0.05	8.4
June	5.7	13.3	2.0	359	2.2	..	:	:	0.7	..	3.7	8.6	0.04	7.0	0.03	5.5	0.05	8.6
Sept	5.9	13.7	2.0	358	3.5	..	:	:	0.5	..	3.4	7.8	0.04	6.5	0.03	5.3	0.05	7.4
Dec	5.2	11.9	1.9	373	1.4	..	0.01[10]	..	0.5	..	3.4	7.9	0.03	5.9	0.02	4.5	0.04	7.9
2006 March	5.8	13.6	2.2	370	0.9	..	0.03	..	0.7	..	4.0	9.4	0.03	5.2	0.02	3.2	0.04	6.7
June	5.8	13.3	2.2	381	2.3	..	0.04	..	0.7	..	3.6	8.4	0.03	4.6	0.02	3.6	0.04	7.3
Sept	6.1	13.9	2.3	358	3.5	..	0.03	..	0.5	..	3.4	7.8	0.03	4.8	0.02	3.5	0.05	7.4
Dec	5.6	12.8	2.2	393	1.5	..	0.02	..	0.6	..	3.5	7.9	0.03	5.8	0.03	4.9	0.04	6.3
2007 March	6.1[P]	14.2[P]	2.4[P]	383[P]	1.0[P]	..	0.02[P]	..	0.9[P]	..	4.2[P]	9.6[P]	0.04[P]	6.7[P]	0.03[P]	4.6[P]	0.05[P]	7.6[P]
June	6.0[P]	13.7[P]	2.2[P]	365[P]	2.4[P]	..	0.03[P]	..	0.7[P]	..	3.6[P]	8.2[P]	0.03[P]	5.1[P]	0.02[P]	2.9[P]	0.04[P]	6.7[P]
Sept	6.5[P]	14.7[P]	2.5[P]	386[P]	3.8[P]	..	0.04[P]	..	0.7[P]	..	3.3[P]	7.3[P]	0.03[P]	4.6[P]	0.02[P]	3.2[P]	0.05[P]	7.0[P]
Dec	5.9[P]	13.2[P]	2.2[P]	380[P]	1.6[P]	..	0.02[P]	..	0.6[P]	..	3.6[P]	8.1[P]	0.02[P]	3.3[P]	0.01[P]	2.2[P]	0.04[P]	6.5[P]
2008 March	6.5[P]	15.0[P]	2.4[P]	396[P]	1.1[P]	..	0.02 [P]	..	..	..	..	..	..	..	..	..	..	..

1 Per 1,000 population of all ages.
2 Per 1,000 live births.
3 Persons marrying per 1,000 unmarried population aged 16 and over.
4 Persons forming a civil partnership per 1,000 unmarried population aged 16 and over.
5 Persons divorcing per 1,000 married population.
6 Deaths under 1 year.
7 Deaths under 4 weeks.
8 Stillbirths and deaths under 1 week.
9 Per 1,000 live births and stillbirths.
10 The Civil Partnership Act 2004 came into force on 5 December 2005 in the UK - see Notes to tables.
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Table 2.2 Key demographic and health indicators

Constituent countries of the United Kingdom

Numbers (thousands), rates, percentages, mean age

				Dependency ratio		Live births					Period expectation of life (in years) at birth[7]		
	Population	Live births	Deaths	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	Infant mortality rate[8]
United Kingdom													
1976	56,216.1	675.5	680.8	42.1	29.5	1.74	26.7	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	*20.4*	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	58,164.4	733.2	636.0	33.9	30.0	1.73	28.2	28.6	*35.5*	7,584	74.2	79.4	6.1
2001	59,113.5	669.1	602.3	32.6	29.8	1.63	28.6	29.2	*40.1*	6,807	75.6	80.4	5.5
2002	59,323.5	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	59,557.3	695.6	612.0	31.8	29.9	1.71	28.8	29.4	*41.5*	6,758	76.2	80.7	5.3
2004	59,845.8	716.0	583.1	31.4	30.0	1.77	28.9	29.4	*42.3*	6,394	76.5	80.9	5.0
2005	60,238.4	722.5	582.7	31.0	30.0	1.78	29.1	29.5	*42.9*	6,268	76.9	81.3	5.1
2006	60,587.3	748.6	572.2	30.6	30.1	1.84	29.1	29.5	*43.7*	6,067	..	..	5.0
2007	..	772.2[p]	574.7	..	..	1.90[p]	29.3[p]	29.5[p]	*44.4*[p]	5,968[p]	..	..	4.8
England													
1976	46,659.9	550.4	560.3	41.4	29.7	1.70	26.5	26.4	*9.2*	10,271	..	..	14.2
1981	46,820.8	598.2	541.0	36.4	29.9	1.79	27.0	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	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
2001	49,449.7	563.7	496.1	32.5	29.7	1.63	28.6	29.3	*39.6*	6,650	75.9	80.6	5.4
2002	49,652.3	565.7	499.1	32.1	29.7	1.65	28.7	29.4	*40.1*	6,603	76.1	80.7	5.2
2003	49,866.2	589.9	503.4	31.8	29.8	1.73	28.9	29.4	*40.9*	6,602	76.5	80.9	5.3
2004	50,110.7	607.2	479.2	31.4	29.8	1.78	29.0	29.5	*41.7*	6,232	76.8	81.1	5.0
2005	50,465.6	613.0	479.4	30.9	29.9	1.79	29.1	29.5	*42.3*	6,110	77.2	81.5	5.0
2006	50,762.9	635.7	470.3	30.6	29.9	1.86	29.2	29.5	*43.0*	5,916	..	..	5.0
2007	..	655.4	470.7	..	..	1.91[p]	29.3[p]	29.5	*43.8*	5,796[p]	..	..	4.8
Wales													
1976	2,799.3	33.4	36.3	42.0	30.9	1.78	26.2	26.0	*8.6*	10,858	..	..	13.7
1981	2,813.5	35.8	35.0	37.6	31.6	1.87	26.7	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	2,891.3	34.9	34.6	34.9	33.7	1.81	27.5	27.8	*41.2*	7,758	73.8	79.1	5.6
2001	2,910.2	30.6	33.0	33.7	33.6	1.66	27.8	28.3	*48.3*	7,017	75.3	80.0	5.4
2002	2,919.8	30.2	33.2	33.3	33.7	1.64	28.0	28.4	*49.7*	6,953	75.5	80.1	4.5
2003	2,931.1	31.4	33.7	32.8	33.8	1.73	28.1	28.5	*50.3*	6,984	75.8	80.3	4.3
2004	2,946.4	32.3	32.1	32.3	33.9	1.78	28.2	28.5	*51.3*	6,588	76.1	80.6	4.9
2005	2,953.6	32.6	32.1	31.8	34.1	1.81	28.4	28.5	*52.4*	6,442	76.6	80.9	4.1
2006	2,965.9	33.6	31.1	31.4	34.3	1.86	28.5	28.6	*53.0*	6,190	..	..	4.1
2007	..	34.4	32.1	..	..	1.90[p]	28.6	28.6	*53.8*	6,302[p]	..	..	5.3
Scotland													
1976	5,233.4	64.9	65.3	44.7	28.4	1.79	26.4	26.0	*9.3*	11,675	..	..	14.8
1981	5,180.2	69.1	63.8	38.2	28.4	1.84	26.8	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
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*	7,921	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	74.2	79.3	4.9
2005	5,094.8	54.4	55.7	29.1	30.6	1.62	29.0	29.5	*47.1*	7,349	74.6	79.6	5.2
2006	5,116.9	55.7	55.1	28.7	30.6	1.67	29.1	29.5	*47.7*	7,161	..	..	4.5
2007	..	57.8	56.0	..	..	1.73[p]	29.2[p]	29.4	*49.1*	7,148[p]	..	..	4.7
Northern Ireland													
1976	1,523.5	26.4	17.0	56.1	25.3	2.68	27.8	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
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*	6,743	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	76.0	80.8	5.5
2005	1,724.4	22.3	14.2	35.8	26.3	1.87	29.5	29.7	*36.3*	6,418	76.1	81.0	6.3
2006	1,741.6	23.3	14.5	35.3	26.4	1.94	29.6	29.7	*38.0*	6,397	..	..	5.1
2007	..	24.5[p]	14.6[p]	..	..	2.01[p]	29.8[p]	29.8[p]	*37.9*[p]	6,306[p]	..	..	4.9[p]

Note: Death 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 2005. Death figures for 2006 onwards relate to registrations.
Birth and death figures for England and also for Wales each exclude events for persons usually resident outside England and Wales. These events are, however, included in the total for the United Kingdom. From 1981 births to non-resident mothers in Northern Ireland are excluded from the figures for Northern Ireland, and for the United Kingdom.
Period expectation of life data for the United Kingdom, England and for Wales for 2001 to 2005 is based on death registrations and revised population estimates for 2002 to 2005
Rates for 2007 are based on 2006-based population projections for 2007.

1 Percentage of children under 16 to working-age population (males 16–64 and females 16–59).
2 Percentage of males 65 and over and females 60 and over to working-age 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 TPFR (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 All countries: figures for all years based on registered deaths.
8 Deaths at age under one year per 1,000 live births.
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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: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean age[1] (years)	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean age[2] (years)	TFR[3]
	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	1.79
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	27.1	69.1	91.5	89.9	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	26.9	71.3	95.8	94.9	46.4	9.8	28.8	1.73
2004	639.7	45.1	121.1	160.0	190.6	102.2	20.8	29.4	58.2	26.9	72.8	97.6	99.6	48.8	10.4	28.9	1.78
2005	645.8	44.8	122.1	164.3	188.2	104.1	22.2	29.5	58.3	26.3	71.6	97.9	100.7	50.3	10.8	29.1	1.79
2006	669.6	45.5	127.8	172.6	189.4	110.5	23.7	29.5	60.2	26.6	73.2	100.6	104.8	53.8	11.4	29.1	1.86
2007	690.0	44.8	130.8	182.6	191.1	115.4	25.4	29.5	61.9[p]	26.0[p]	73.3[p]	103.5[p]	109.5[p]	57.0[p]	12.1[p]	29.3[p]	1.91[p]
2002 March	143.3	10.5	26.5	37.4	43.2	21.6	4.1	29.3	53.3	26.5	67.0	90.4	87.1	41.7	8.7	28.7	1.61
June	147.2	10.4	26.7	37.9	45.5	22.4	4.3	29.4	54.2	26.2	66.8	90.6	90.9	42.6	9.0	28.8	1.63
Sept	155.0	11.4	28.9	39.9	46.9	23.4	4.5	29.3	56.4	28.2	71.4	94.5	92.6	44.2	9.4	28.7	1.70
Dec	150.6	11.2	28.8	38.2	45.0	23.0	4.5	29.3	54.8	27.7	71.0	90.4	88.8	43.5	9.3	28.7	1.65
2003 March	147.4	10.9	27.9	37.5	44.0	22.6	4.6	29.3	54.7	26.8	69.1	92.8	90.5	43.7	9.6	28.8	1.66
June	155.1	10.7	28.5	39.3	47.4	24.5	4.7	29.5	56.9	26.0	70.0	96.4	96.4	46.9	9.6	28.9	1.73
Sept	162.8	11.5	30.5	41.0	49.3	25.6	5.0	29.4	59.1	27.7	74.0	99.4	99.2	48.3	10.1	28.9	1.79
Dec	156.0	11.2	29.7	39.1	46.5	24.6	4.8	29.4	56.6	27.1	72.1	94.6	93.6	46.5	9.8	28.8	1.72
2004 March	155.2	11.0	29.3	38.7	46.6	24.7	4.9	29.4	56.8	26.5	70.8	95.0	97.9	47.4	9.8	28.9	1.74
June	157.4	10.7	29.3	39.4	47.7	25.2	5.0	29.5	57.6	25.7	70.9	96.6	100.4	48.5	10.1	29.0	1.76
Sept	165.4	11.7	31.4	41.6	49.0	26.3	5.4	29.4	59.9	27.7	75.0	101.0	102.0	50.1	10.7	28.9	1.83
Dec	161.7	11.6	31.1	40.3	47.2	26.0	5.5	29.4	58.5	27.6	74.3	97.7	98.2	49.4	10.9	28.9	1.79
2005 March	154.3	10.9	29.3	38.9	45.0	24.7	5.4	29.4	56.5	26.0	69.6	94.0	97.6	48.5	10.7	29.0	1.74
June	159.8	10.7	29.6	40.3	47.5	26.2	5.4	29.5	57.8	25.3	69.7	96.2	101.9	50.8	10.6	29.1	1.78
Sept	170.2	11.9	32.5	43.7	49.4	26.9	5.7	29.4	60.9	27.6	75.7	103.2	104.9	51.6	11.1	29.0	1.88
Dec	161.7	11.3	30.7	41.4	46.3	26.3	5.7	29.4	57.9	26.3	71.3	97.9	98.3	50.4	11.0	29.0	1.78
2006 March	159.5	11.1	30.5	40.7	45.3	26.3	5.6	29.5	58.2	26.3	70.9	96.1	101.6	52.0	11.0	29.1	1.79
June	166.2	11.4	31.2	42.9	47.6	27.1	5.9	29.5	60.0	26.6	71.8	100.4	105.7	53.0	11.3	29.1	1.85
Sept	174.9	12.0	33.5	45.6	49.0	28.9	6.0	29.4	62.4	27.7	76.1	105.4	107.5	55.9	11.4	29.1	1.93
Dec	169.0	11.1	32.6	43.5	47.5	28.1	6.2	29.5	60.3	25.7	74.0	100.5	104.3	54.4	11.8	29.2	1.86
2007[5] March	164.0	10.9	31.1	42.7	45.7	27.4	6.2	29.5	59.7[p]	25.6[p]	70.8[p]	98.2[p]	106.2[p]	54.9[p]	12.0[p]	29.3[p]	1.84[p]
June	169.5	10.7	31.4	44.6	47.8	28.9	6.2	29.6	61.1[p]	25.0[p]	70.6[p]	101.5[p]	109.7[p]	57.1[p]	11.8[p]	29.4[p]	1.88[p]
Sept	181.4	11.9	34.6	48.6	50.0	29.9	6.4	29.5	64.6[p]	27.4[p]	76.9[p]	109.4[p]	113.7[p]	58.6[p]	12.0[p]	29.2[p]	1.99[p]
Dec	175.0	11.3	33.7	46.6	47.6	29.2	6.6	29.5	62.3[p]	26.1[p]	74.9[p]	104.9[p]	108.2[p]	57.2[p]	12.5[p]	29.3[p]	1.92[p]

Note: The rates for women of all ages, under 20, and 40 and over are based upon the populations of women aged 15–44, 15–19, and 40–44 respectively.

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).

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 Birth rates for 2007 are based on the 2006-based population projections for 2007.

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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: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean age[1] (years)	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Registration[2]: Joint: Same[3] address	Joint: Different[3] addresses	Sole
	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*
1976	53.8	19.8	16.6	9.7	4.7	2.3	0.7	23.3	*9.2*	*34.2*	*9.1*	*4.4*	*5.2*	*8.6*	*10.1*	*51.0*		*49.0*
1981	81.0	26.4	28.8	14.3	7.9	1.3	0.9	23.4	*12.8*	*46.7*	*14.8*	*6.6*	*6.2*	*3.9*	*12.5*	*58.2*		*41.8*
1986	141.3	39.6	54.1	27.7	13.1	5.7	1.1	23.8	*21.4*	*69.0*	*28.2*	*12.1*	*10.1*	*12.6*	*14.7*	*46.6*	*19.6*	*33.8*
1991	211.3	43.4	77.8	52.4	25.7	9.8	2.1	24.8	*30.2*	*82.9*	*44.9*	*21.1*	*16.0*	*18.3*	*21.3*	*54.6*	*19.8*	*25.6*
1992	215.2	40.1	77.1	55.9	28.9	10.9	2.3	25.2	*31.2*	*83.7*	*47.2*	*22.8*	*17.3*	*19.3*	*22.9*	*55.4*	*20.7*	*23.9*
1993	216.5	38.2	75.0	57.5	31.4	11.9	2.5	25.5	*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*
2005	276.5	41.2	82.1	64.4	50.8	30.3	7.7	27.0	*42.8*	*91.8*	*67.2*	*39.2*	*27.0*	*29.1*	*34.8*	*63.5*	*20.2*	*16.3*
2006	291.4	42.3	87.7	69.3	51.4	32.2	8.4	27.0	*43.5*	*93.0*	*68.6*	*40.1*	*27.1*	*29.2*	*35.5*	*63.7*	*20.8*	*15.6*
2007	305.6	41.7	91.9	76.0	53.0	34.0	9.0	27.1	*44.3*	*93.1*	*70.3*	*41.6*	*27.7*	*29.5*	*35.5*	*65.0*	*20.1*	*15.0*
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*
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*
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*
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*
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*
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*
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*
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*
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*
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	66.3	10.1	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*
June	66.6	9.8	19.7	15.4	12.5	7.4	1.8	27.0	*41.7*	*91.2*	*66.5*	*38.2*	*26.4*	*28.1*	*33.5*	*63.7*	*19.8*	*16.5*
Sept	73.7	10.9	22.1	17.3	13.4	7.9	2.1	26.9	*43.3*	*92.0*	*68.0*	*39.6*	*27.2*	*29.3*	*35.7*	*63.7*	*20.3*	*16.0*
Dec	69.9	10.4	20.7	16.5	12.6	7.7	2.0	27.0	*43.2*	*92.1*	*67.4*	*39.8*	*27.3*	*29.5*	*34.8*	*63.5*	*20.3*	*16.2*
2006 March	68.7	10.3	20.8	16.0	12.0	7.6	1.9	26.9	*43.1*	*93.1*	*68.1*	*39.4*	*26.5*	*28.9*	*34.4*	*63.1*	*20.9*	*16.0*
June	71.4	10.5	21.2	16.9	12.8	7.8	2.1	27.0	*43.0*	*92.6*	*68.0*	*39.4*	*26.9*	*28.8*	*35.0*	*63.7*	*20.6*	*15.6*
Sept	76.8	11.1	23.1	18.6	13.4	8.4	2.2	27.0	*43.9*	*92.8*	*69.0*	*40.7*	*27.3*	*29.2*	*36.9*	*64.1*	*20.5*	*15.4*
Dec	74.5	10.3	22.6	17.8	13.2	8.4	2.2	27.1	*44.1*	*93.3*	*69.2*	*40.9*	*27.8*	*29.8*	*35.7*	*63.6*	*21.0*	*15.4*
2007 March	72.5	10.2	21.7	17.6	12.6	8.2	2.2	27.1	*44.2*	*93.5*	*69.8*	*41.3*	*27.5*	*29.8*	*35.1*	*64.0*	*20.5*	*15.5*
June	73.5	9.9	21.8	18.3	13.0	8.3	2.2	27.1	*43.4*	*92.6*	*69.5*	*41.0*	*27.2*	*28.8*	*35.2*	*65.1*	*19.9*	*14.9*
Sept	80.8	11.1	24.4	20.4	13.9	8.8	2.2	27.0	*44.5*	*93.2*	*70.5*	*41.9*	*27.8*	*29.6*	*35.0*	*65.2*	*20.1*	*14.7*
Dec	78.7	10.6	24.0	19.7	13.5	8.7	2.4	27.1	*45.0*	*93.1*	*71.3*	*42.2*	*28.3*	*29.6*	*36.5*	*65.3*	*19.9*	*14.8*

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

England and Wales (residents) — Numbers (thousands) and rates; and percentage terminated by abortion

Year and quarter	Age of woman at conception								
	All ages	Under 16	Under 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	826.8	7.6	42.2	101.3	181.3	205.1	209.6	106.8	22.8
2005	841.8	7.9	42.3	102.3	185.5	211.3	209.2	110.0	23.6
2006	870.0	7.8	41.8	103.1	191.2	222.2	212.4	115.4	25.5
2004 March	207.9	2.0	10.9	26.2	45.9	51.1	52.6	26.6	5.6
June	200.1	1.9	10.6	25.0	43.7	49.3	50.4	25.9	5.7
Sept	203.6	1.8	10.0	24.0	44.1	50.7	52.7	26.6	5.6
Dec	215.2	1.9	10.8	26.1	47.7	54.0	54.0	27.6	5.8
2005 March	204.6	1.9	10.4	25.1	45.4	50.8	51.0	26.6	5.7
June	204.7	2.0	10.5	25.1	45.2	51.0	50.7	26.9	5.8
Sept	210.9	2.0	10.4	25.3	45.6	53.3	53.1	27.5	6.0
Dec	221.7	2.0	11.0	26.8	49.3	56.2	54.3	29.1	6.0
2006 March	214.0	1.8	10.2	25.4	47.5	54.2	52.4	28.3	6.2
June	212.6	2.1	10.6	25.7	46.9	53.8	51.4	28.3	6.5
Sept	215.1	2.0	10.0	24.7	46.3	55.3	53.6	28.9	6.4
Dec	228.2	2.0	11.0	27.3	50.6	58.9	55.1	29.9	6.5
2007 March[1,p]	220.6	2.0	10.7	26.4	48.8	56.3	52.0	28.9	6.4
June[1,p]	220.1	2.1	10.9	26.7	48.9	56.9	51.5	28.7	6.5
	(b) rates (conceptions per thousand women in age group)								
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	42.9	60.6	104.4	119.0	101.7	47.0	10.3
2003	73.7	7.9	42.4	60.0	107.2	122.0	106.0	49.1	10.7
2004	75.2	7.5	41.8	60.3	109.0	125.1	109.6	51.0	11.4
2005	76.0	7.8	41.4	60.1	108.7	125.8	112.0	53.2	11.5
2006	78.3	7.8	40.9	60.2	109.5	129.5	117.5	56.3	12.3
2004 March	76.2	7.8	43.5	63.2	111.5	125.4	109.3	51.1	11.4
June	73.2	7.7	42.2	60.1	105.9	121.1	105.5	49.7	11.5
Sept	73.6	7.1	39.2	56.8	105.0	122.6	109.9	50.6	11.1
Dec	77.7	7.4	42.4	61.5	112.9	129.9	113.2	52.8	11.4
2005 March	75.1	7.6	41.5	60.0	108.9	123.8	109.8	51.8	11.4
June	74.2	8.0	41.1	59.1	106.7	122.1	108.5	52.0	11.4
Sept	75.5	7.8	40.5	59.0	105.7	125.6	113.3	52.8	11.7
Dec	79.3	7.9	42.8	62.4	113.6	131.7	116.7	55.9	11.5
2006 March	78.2	7.1	40.4	60.3	111.2	129.2	116.2	55.7	12.2
June	76.7	8.2	41.4	60.3	108.1	126.1	113.6	55.3	12.5
Sept	76.8	7.7	38.8	57.2	104.8	127.4	118.1	56.0	12.1
Dec	81.4	8.1	42.8	63.0	114.1	134.9	122.4	58.2	12.3
2007 March[1,p]	80.4	8.0	42.6	62.4	111.9	130.7	119.1	57.6	12.5
June[1,p]	79.3	8.7	42.7	62.4	110.2	129.8	117.8	56.7	12.4
	(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	*22.4*	*57.2*	*45.6*	*40.1*	*28.9*	*18.2*	*13.2*	*18.3*	*33.0*
2005	*22.2*	*57.1*	*46.3*	*40.3*	*28.6*	*18.0*	*13.2*	*17.7*	*32.8*
2006	*22.3*	*59.8*	*48.4*	*41.9*	*28.7*	*18.0*	*13.1*	*17.1*	*31.8*
2004 March	*22.7*	*58.2*	*45.7*	*40.2*	*29.4*	*18.5*	*13.4*	*18.2*	*32.9*
June	*23.0*	*57.2*	*46.3*	*40.8*	*29.2*	*18.6*	*13.7*	*19.2*	*33.5*
Sept	*21.9*	*56.8*	*45.8*	*40.0*	*28.4*	*17.9*	*12.8*	*17.8*	*33.0*
Dec	*22.0*	*56.3*	*44.5*	*39.3*	*28.6*	*17.8*	*13.0*	*18.2*	*32.5*
2005 March	*22.5*	*57.5*	*47.3*	*41.1*	*29.2*	*18.1*	*13.1*	*18.0*	*32.6*
June	*22.7*	*57.0*	*45.8*	*40.3*	*28.9*	*18.6*	*13.9*	*17.8*	*33.8*
Sept	*21.4*	*56.2*	*45.3*	*39.0*	*27.5*	*17.5*	*12.6*	*17.2*	*32.1*
Dec	*22.2*	*57.5*	*46.9*	*40.6*	*28.7*	*17.8*	*13.1*	*17.7*	*32.7*
2006 March	*22.5*	*59.0*	*47.7*	*41.6*	*29.1*	*18.4*	*13.0*	*17.5*	*31.1*
June	*23.1*	*59.5*	*49.0*	*42.5*	*29.6*	*18.8*	*13.9*	*17.8*	*31.6*
Sept	*21.5*	*60.4*	*48.0*	*41.3*	*27.7*	*17.5*	*12.7*	*16.3*	*32.8*
Dec	*22.0*	*60.2*	*49.1*	*42.0*	*28.3*	*17.4*	*12.8*	*16.9*	*31.7*
2007 March[1,p]	*22.7*	*62.7*	*50.9*	*43.4*	*29.7*	*18.5*	*13.1*	*17.0*	*31.4*
June[1,p]	*22.6*	*62.1*	*50.5*	*43.4*	*28.8*	*18.2*	*12.9*	*17.1*	*31.9*

Note: Conception figures are estimates derived from birth registrations and abortion notifications.
Rates for women of all ages, under 16, under 18, under 20 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 to women under 18 for local authority areas see the National Statistics website, www.statistics.gov.uk

1 Figures for conceptions by age for the March and June quarters of 2007 exclude maternities where the mother's age was not recorded.

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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[1] women	Residents[1]	Non-[1] residents	All women (residents): Age group: Under 16	16–19	20–24	25–29	30–34	35–44	45 and over	Gestation weeks (percentages): Under 9	9–12	13–19	20 and over
	Numbers (thousands)										**Percentages**			
1971	126.8	94.6	32.2	2.3	18.2	24.5	17.3	14.2	15.9	0.5	*16.6*	*57.9*	*21.8*	*1.0*
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	194.5	185.7	8.8	3.8	35.5	52.8	37.8	28.1	27.3	0.5	*46.2*	*41.5*	*10.8*	*1.6*
2005	194.4	186.4	7.9	3.8	35.3	53.3	38.3	27.8	27.2	0.6	*53.6*	*35.7*	*9.3*	*1.4*
2006	201.2	193.7	7.4	4.0	37.3	55.3	40.4	28.2	27.9	0.7	*54.9*	*34.3*	*9.2*	*1.5*
2007	205.6	198.5	7.1	4.4	39.6	57.0	41.7	27.3	27.9	0.7	*57.9*	*31.9*	*8.8*	*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*
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*
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*
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	48.7	2.4	1.0	9.4	13.9	9.8	7.5	7.0	0.1	*41.7*	*44.5*	*12.1*	*1.7*
June	48.9	46.6	2.3	1.0	8.9	13.3	9.5	6.9	6.9	0.1	*43.6*	*43.3*	*11.2*	*1.8*
Sept	48.4	46.3	2.1	1.0	8.9	13.0	9.4	7.0	6.9	0.1	*47.8*	*40.5*	*10.3*	*1.4*
Dec	46.1	44.2	1.9	1.0	8.4	12.6	9.1	6.6	6.5	0.1	*52.0*	*37.2*	*9.5*	*1.3*
2005 March	50.1	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*
June	50.1	48.0	2.1	1.0	9.2	13.9	9.9	7.1	6.9	0.1	*53.8*	*35.6*	*9.2*	*1.4*
Sept	47.0	45.1	1.9	1.0	8.5	12.7	9.3	6.9	6.7	0.1	*56.5*	*33.6*	*8.5*	*1.3*
Dec	47.2	45.3	1.8	0.9	8.6	12.9	9.5	6.7	6.7	0.1	*57.2*	*32.9*	*8.3*	*1.5*
2006 March	52.4	50.4	2.0	1.0	9.8	14.6	10.4	7.2	7.3	0.2	*50.6*	*37.3*	*10.5*	*1.6*
June	51.3	49.3	2.0	1.0	9.4	14.2	10.3	7.2	7.1	0.2	*53.6*	*35.3*	*9.4*	*1.7*
Sept	49.8	47.9	1.8	1.0	9.2	13.6	10.0	7.0	6.9	0.2	*56.5*	*33.0*	*9.0*	*1.5*
Dec	47.7	46.0	1.6	1.0	8.8	13.0	9.6	6.7	6.7	0.1	*59.5*	*31.3*	*7.9*	*1.3*
2007 March	55.3	53.3	1.9	1.2	10.8	15.4	11.1	7.3	7.4	0.2	54.1	35.0	9.4	1.6
June	51.2	49.4	1.8	1.1	9.9	14.3	10.3	6.7	6.8	0.2	56.6	32.6	9.2	1.5
Sept	49.9	48.2	1.7	1.0	9.5	13.5	10.2	6.6	7.0	0.2	58.6	31.2	8.8	1.4
Dec	49.2	47.6	1.6	1.1	9.4	13.7	10.0	6.6	6.7	0.2	62.7	28.3	7.6	1.4
2008 March[p]	52.7	50.9	1.8	1.1	10.3	14.5	10.7	6.9	7.1	0.2	58.4	31.0	9.0	1.6
Rates (per thousand women residents)	ASR[2] (women 15–44)	Crude rate[3] (women 15–44)												
1971	9.9	10.1	:	2.3	13.9	13.1	10.7	10.0	5.6	0.3				
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	17.8	16.9	:	3.7	26.5	31.9	23.3	14.7	6.7	0.3				
2005	17.8	17.0	:	3.7	26.3	32.0	23.6	14.5	6.6	0.3				
2006	18.3	17.5	:	3.9	27.3	32.5	24.3	15.1	6.8	0.4				
2007	18.6	17.9	:	4.4	28.9	32.6	24.3	15.1	6.7	0.4				
2003 March	18.3	17.4	:	4.0	28.0	33.0	22.9	15.1	6.9	0.3				
June	17.4	16.6	:	4.0	26.1	31.1	22.3	14.5	6.6	0.3				
Sept	17.2	16.4	:	4.0	25.3	30.6	21.8	14.6	6.6	0.3				
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	28.3	33.8	24.1	15.4	6.9	0.3				
June	17.9	17.0	:	3.8	26.7	32.3	23.3	14.4	6.7	0.3				
Sept	17.8	16.9	:	3.7	26.6	31.5	23.0	14.8	6.8	0.3				
Dec	17.0	16.2	:	3.5	25.0	30.4	22.3	14.2	6.3	0.3				
2005 March	18.4	17.5	:	3.7	27.0	33.5	23.8	15.2	6.8	0.3				
June	18.4	17.5	:	3.8	27.2	33.3	24.1	15.3	6.7	0.3				
Sept	17.3	16.4	:	3.8	25.2	30.5	22.6	14.8	6.5	0.3				
Dec	17.4	16.5	:	3.6	25.4	30.9	23.0	14.4	6.5	0.3				
2006 March	19.3	18.4	:	3.9	29.0	34.8	25.0	15.9	7.0	0.3				
June	18.9	18.0	:	3.9	27.8	33.8	24.7	16.0	6.8	0.4				
Sept	18.3	17.5	:	4.0	27.0	32.2	23.9	15.9	6.7	0.4				
Dec	17.5	16.8	:	4.0	25.9	30.8	22.8	15.3	6.5	0.3				
2007 March	20.0	19.2	:	4.7	31.4	35.3	25.6	16.7	7.2	0.4				
June	18.5	17.8	:	4.4	28.8	32.7	23.7	15.5	6.6	0.4				
Sept	18.0	17.4	:	4.2	27.7	30.8	23.3	15.4	6.8	0.4				
Dec	17.8	17.2	:	4.4	27.2	31.1	22.7	15.3	6.5	0.4				
2008 March[p]	19.0	18.4	:	4.5	30.1	32.8	24.0	16.3	6.9	0.4				

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 Rates for all women residents age-standardised to the European population for ages 15–44.
3 Includes incomplete forms that have been returned to practitioners.
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Table 5.1 Period expectation of life at birth and selected age

Constituent countries of the United Kingdom — Years

Year	Males: At birth	Males: At age 5	20	30	50	60	70	80	Year	Females: At birth	Females: At age 5	20	30	50	60	70	80
United Kingdom																	
1981	70.8	66.9	52.3	42.7	24.1	16.3	10.1	5.8	1981	76.8	72.7	57.9	48.2	29.2	20.8	13.3	7.5
1986	71.9	67.8	53.2	43.6	24.9	16.8	10.5	6.0	1986	77.7	73.4	58.6	48.8	29.8	21.2	13.8	7.8
1991	73.2	68.9	54.2	44.7	26.0	17.7	11.1	6.4	1991	78.7	74.3	59.5	49.7	30.6	21.9	14.3	8.2
1996	74.2	69.8	55.1	45.6	26.9	18.5	11.6	6.6	1996	79.4	74.9	60.1	50.3	31.2	22.3	14.5	8.3
2000	75.3	70.9	56.1	46.6	28.0	19.5	12.3	7.0	2000	80.1	75.6	60.8	51.0	31.9	23.0	15.0	8.6
2001	75.6	71.2	56.4	46.9	28.2	19.7	12.5	7.1	2001	80.4	75.8	61.0	51.2	32.1	23.2	15.1	8.7
2002	75.9	71.4	56.6	47.1	28.5	19.9	12.6	7.1	2002	80.5	75.9	61.1	51.3	32.2	23.3	15.2	8.7
2003	76.2	71.7	56.9	47.4	28.7	20.2	12.8	7.3	2003	80.7	76.1	61.3	51.5	32.4	23.4	15.3	8.7
2004	76.5	72.0	57.3	47.7	29.0	20.5	13.1	7.4	2004	80.9	76.4	61.5	51.7	32.6	23.6	15.5	8.8
2005	76.9	72.4	57.6	48.0	29.4	20.8	13.4	7.6	2005	81.3	76.7	61.9	52.0	32.9	23.9	15.8	9.0
England and Wales																	
1981	71.0	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.1	48.3	29.4	20.9	13.4	7.5
1986	72.1	68.0	53.4	43.8	25.0	16.9	10.5	6.1	1986	77.9	73.6	58.8	49.0	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.4	44.8	26.1	17.8	11.2	6.4	1991	78.9	74.5	59.7	49.9	30.8	22.0	14.4	8.3
1996	74.5	70.1	55.3	45.8	27.1	18.6	11.6	6.6	1996	79.6	75.1	60.2	50.4	31.3	22.5	14.6	8.4
2000	75.6	71.1	56.4	46.8	28.1	19.6	12.3	7.0	2000	80.3	75.8	60.9	51.1	32.0	23.1	15.1	8.6
2001	75.9	71.4	56.7	47.1	28.4	19.9	12.5	7.1	2001	80.5	76.0	61.2	51.3	32.2	23.3	15.2	8.7
2002	76.1	71.6	56.9	47.3	28.6	20.1	12.7	7.2	2002	80.7	76.1	61.3	51.5	32.3	23.4	15.3	8.7
2003	76.4	71.9	57.2	47.6	28.9	20.3	12.9	7.3	2003	80.9	76.3	61.5	51.7	32.5	23.6	15.4	8.8
2004	76.8	72.3	57.5	47.9	29.2	20.6	13.2	7.4	2004	81.1	76.6	61.7	51.9	32.7	23.8	15.6	8.9
2005	77.2	72.7	57.9	48.3	29.6	21.0	13.5	7.6	2005	81.5	76.9	62.0	52.2	33.1	24.1	15.9	9.1
England																	
1981	71.1	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.2	48.4	29.4	20.9	13.4	7.5
1986	72.2	68.1	53.4	43.8	25.1	17.0	10.6	6.1	1986	77.9	73.6	58.8	49.0	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.4	44.9	26.2	17.8	11.2	6.4	1991	78.9	74.5	59.7	49.9	30.8	22.0	14.4	8.3
1996	74.5	70.1	55.4	45.8	27.1	18.7	11.7	6.6	1996	79.6	75.1	60.3	50.4	31.3	22.5	14.6	8.4
2000	75.6	71.2	56.4	46.9	28.2	19.6	12.4	7.0	2000	80.3	75.8	61.0	51.2	32.0	23.1	15.1	8.6
2001	75.9	71.4	56.7	47.1	28.5	19.9	12.6	7.1	2001	80.6	76.0	61.2	51.4	32.2	23.3	15.2	8.7
2002	76.1	71.7	56.9	47.4	28.7	20.1	12.7	7.2	2002	80.7	76.1	61.3	51.5	32.4	23.4	15.3	8.7
2003	76.5	72.0	57.2	47.6	28.9	20.4	12.9	7.3	2003	80.9	76.4	61.5	51.7	32.6	23.6	15.4	8.8
2004	76.8	72.3	57.6	48.0	29.2	20.7	13.2	7.4	2004	81.1	76.6	61.7	51.9	32.8	23.8	15.6	8.9
2005	77.2	72.7	57.9	48.3	29.6	21.0	13.5	7.6	2005	81.5	76.9	62.1	52.3	33.1	24.1	15.9	9.1
Wales																	
1981	70.4	66.5	51.9	42.2	23.6	15.8	9.7	5.6	1981	76.4	72.3	57.5	47.7	28.9	20.5	13.1	7.4
1986	71.6	67.5	52.8	43.2	24.6	16.6	10.3	6.0	1986	77.5	73.3	58.5	48.7	29.7	21.1	13.7	7.8
1991	73.1	68.8	54.1	44.6	25.8	17.6	11.0	6.4	1991	78.8	74.3	59.5	49.7	30.6	21.8	14.3	8.3
1996	73.8	69.4	54.7	45.3	26.6	18.2	11.3	6.4	1996	79.1	74.6	59.7	49.9	30.9	22.1	14.4	8.3
2000	74.8	70.4	55.7	46.2	27.6	19.1	12.0	6.8	2000	79.7	75.2	60.4	50.6	31.5	22.6	14.7	8.4
2001	75.3	70.8	56.0	46.6	28.0	19.5	12.3	7.0	2001	80.0	75.4	60.6	50.8	31.7	22.8	14.9	8.5
2002	75.5	70.9	56.2	46.8	28.2	19.7	12.4	7.1	2002	80.1	75.5	60.7	50.9	31.8	22.9	15.0	8.6
2003	75.8	71.2	56.5	47.0	28.4	19.9	12.6	7.2	2003	80.3	75.7	60.9	51.1	32.0	23.1	15.1	8.6
2004	76.1	71.6	56.8	47.3	28.7	20.2	12.8	7.3	2004	80.6	76.0	61.1	51.3	32.2	23.3	15.2	8.7
2005	76.6	72.0	57.3	47.7	29.2	20.6	13.2	7.6	2005	80.9	76.3	61.5	51.6	32.6	23.7	15.5	8.9
Scotland																	
1981	69.1	65.2	50.6	41.1	22.9	15.4	9.6	5.5	1981	75.3	71.2	56.4	46.7	27.9	19.7	12.7	7.2
1986	70.2	66.0	51.4	41.9	23.5	15.8	9.9	5.7	1986	76.2	71.9	57.1	47.3	28.4	20.1	13.0	7.5
1991	71.4	67.1	52.5	43.0	24.6	16.6	10.4	6.1	1991	77.1	72.7	57.9	48.1	29.2	20.7	13.5	7.9
1996	72.2	67.8	53.1	43.7	25.3	17.3	10.9	6.3	1996	77.9	73.3	58.5	48.8	29.8	21.2	13.8	8.0
2000	73.1	68.6	53.9	44.6	26.3	18.2	11.5	6.6	2000	78.6	74.0	59.2	49.4	30.5	21.8	14.1	8.1
2001	73.3	68.8	54.2	44.8	26.6	18.4	11.7	6.8	2001	78.8	74.2	59.4	49.6	30.7	22.0	14.3	8.2
2002	73.5	69.0	54.3	45.0	26.7	18.6	11.8	6.8	2002	78.9	74.3	59.5	49.7	30.8	22.1	14.4	8.2
2003	73.8	69.3	54.6	45.2	27.0	18.8	12.0	6.9	2003	79.1	74.5	59.7	49.9	30.9	22.2	14.5	8.3
2004	74.2	69.7	55.0	45.6	27.3	19.1	12.2	7.0	2004	79.3	74.7	59.9	50.1	31.1	22.4	14.7	8.4
2005	74.6	70.1	55.4	45.9	27.7	19.4	12.5	7.2	2005	79.6	75.0	60.2	50.4	31.4	22.7	14.9	8.5
Northern Ireland																	
1981	69.2	65.4	50.9	41.5	23.2	15.6	9.7	5.8	1981	75.5	71.6	56.8	47.1	28.3	20.0	12.8	7.3
1986	70.9	66.8	52.2	42.7	24.2	16.4	10.4	6.2	1986	77.1	72.9	58.1	48.3	29.3	20.8	13.4	7.8
1991	72.6	68.2	53.6	44.1	25.5	17.3	11.0	6.4	1991	78.4	74.0	59.2	49.4	30.3	21.6	14.2	8.3
1996	73.8	69.4	54.7	45.3	26.6	18.2	11.4	6.6	1996	79.2	74.7	59.9	50.0	30.9	22.1	14.4	8.4
2000	74.8	70.4	55.7	46.2	27.6	19.1	11.9	6.6	2000	79.8	75.2	60.4	50.6	31.5	22.6	14.6	8.2
2001	75.2	70.7	56.1	46.6	27.9	19.4	12.3	6.9	2001	80.1	75.6	60.7	50.9	31.8	22.9	14.9	8.4
2002	75.6	71.1	56.4	46.9	28.2	19.7	12.4	7.0	2002	80.4	75.9	61.0	51.2	32.0	23.1	15.1	8.5
2003	75.8	71.4	56.7	47.1	28.4	19.9	12.6	7.2	2003	80.6	76.0	61.1	51.3	32.2	23.3	15.2	8.6
2004	76.0	71.6	56.9	47.4	28.7	20.2	12.8	7.3	2004	80.8	76.3	61.4	51.6	32.5	23.5	15.4	8.7
2005	76.1	71.6	57.0	47.5	28.9	20.4	13.0	7.3	2005	81.0	76.4	61.6	51.8	32.7	23.7	15.6	8.8

Note: All figures are based on a three-year period, so that for instance 2003 represents 2002–2004. Unless otherwise stated, the population estimates used to calculate these life expectancies are the latest available at time of publication of the 2004–2006 interim life tables (28 November 2008). All figures are based on death registrations.

Table 6.1 Deaths: age and sex

England and Wales

Numbers (thousands) and rates

Year and quarter	All ages	Age group: Under 1[1]	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
Numbers (thousands)														
Males														
1976	300.1	4.88	0.88	0.68	0.64	1.66	1.66	3.24	5.93	20.4	52.0	98.7	80.3	29.0
1981	289.0	4.12	0.65	0.45	0.57	1.73	1.58	3.18	5.54	16.9	46.9	92.2	86.8	28.5
1986	287.9	3.72	0.57	0.33	0.38	1.43	1.75	3.10	5.77	14.4	43.6	84.4	96.2	32.2
1991	277.6	2.97	0.55	0.34	0.35	1.21	1.76	3.69	6.16	13.3	34.9	77.2	95.8	39.3
1996	268.7	2.27	0.44	0.24	0.29	0.93	1.41	4.06	5.84	13.6	30.1	71.0	90.7	47.8
1999	264.3	2.08	0.41	0.22	0.28	0.90	1.27	3.85	5.93	13.6	28.7	64.3	90.4	52.3
2000	255.5	1.89	0.34	0.22	0.28	0.87	1.22	3.76	6.05	13.4	27.9	60.6	87.1	51.9
2001	252.4	1.81	0.32	0.19	0.28	0.88	1.27	3.63	6.07	13.3	27.5	57.5	87.0	52.7
2002	253.1	1.81	0.32	0.20	0.28	0.83	1.24	3.47	6.20	12.9	27.7	56.3	88.3	53.6
2003	253.9	1.81	0.31	0.19	0.24	0.81	1.23	3.26	6.32	12.7	28.2	55.1	89.6	54.0
2004	244.1	1.79	0.29	0.17	0.26	0.78	1.15	3.10	6.19	12.2	27.0	52.5	87.3	51.3
2005	243.3	1.87	0.28	0.16	0.25	0.75	1.11	2.89	6.14	12.1	27.3	51.0	84.8	54.7
2006	240.9	1.86	0.29	0.19	0.26	0.84	1.21	3.13	6.32	12.3	27.6	48.9	81.9	56.2
2007	240.8	1.88	0.34	0.18	0.23	0.80	1.22	3.14	6.26	11.9	27.5	47.8	80.6	58.9
Females														
1976	298.5	3.46	0.59	0.45	0.42	0.62	0.67	1.94	4.04	12.8	29.6	67.1	104.7	72.1
1981	288.9	2.90	0.53	0.30	0.37	0.65	0.64	1.82	3.74	10.5	27.2	62.8	103.6	73.9
1986	293.3	2.59	0.49	0.25	0.27	0.56	0.67	1.65	3.83	8.8	25.8	58.4	106.5	83.6
1991	292.5	2.19	0.44	0.25	0.22	0.46	0.64	1.73	3.70	8.4	21.3	54.2	103.3	95.7
1996	291.5	1.69	0.32	0.18	0.20	0.43	0.51	1.85	3.66	8.9	18.2	50.2	96.7	108.7
1999	291.8	1.55	0.30	0.17	0.22	0.39	0.47	1.67	3.79	9.0	18.0	45.1	93.9	117.2
2000	280.1	1.49	0.25	0.16	0.18	0.38	0.47	1.69	3.87	9.1	17.6	42.2	89.3	113.4
2001	277.9	1.43	0.27	0.19	0.18	0.38	0.47	1.59	3.77	8.9	17.6	40.5	88.8	113.9
2002	280.4	1.31	0.24	0.16	0.19	0.38	0.43	1.61	3.77	8.7	17.7	39.6	90.0	116.3
2003	284.4	1.50	0.28	0.15	0.19	0.35	0.46	1.57	3.86	8.5	18.0	39.0	92.7	117.9
2004	268.4	1.43	0.23	0.13	0.16	0.38	0.46	1.49	3.80	8.1	17.6	36.9	88.3	109.4
2005	269.1	1.37	0.22	0.13	0.18	0.38	0.48	1.48	3.81	8.2	17.8	36.0	86.4	113.1
2006	261.7	1.51	0.27	0.14	0.17	0.38	0.44	1.38	3.80	8.1	17.9	34.5	81.2	111.9
2007	263.3	1.46	0.24	0.12	0.19	0.36	0.45	1.36	3.79	8.1	18.2	33.9	79.4	115.8
Rates (deaths per 1,000 population in each age group)														
Males														
1976	12.5	16.2	0.65	0.34	0.31	0.88	0.96	0.92	2.09	6.97	19.6	50.3	116.4	243.2
1981	12.0	12.6	0.53	0.27	0.29	0.82	0.83	0.89	1.83	6.11	17.7	45.6	105.2	226.5
1986	11.8	11.0	0.44	0.21	0.23	0.72	0.83	0.88	1.68	5.27	16.6	42.8	101.2	215.4
1991	11.2	8.3	0.40	0.21	0.23	0.72	0.89	0.94	1.76	4.56	13.9	38.1	93.1	205.6
1996	10.7	6.8	0.32	0.14	0.18	0.60	0.85	1.01	1.67	4.06	11.9	34.5	85.0	198.8
1999	10.4	6.5	0.31	0.12	0.16	0.56	0.83	0.99	1.60	3.99	10.9	31.6	79.9	194.4
2000	10.0	6.1	0.26	0.13	0.16	0.54	0.79	0.98	1.59	3.92	10.4	29.7	75.9	187.5
2001	9.9	5.9	0.25	0.11	0.16	0.53	0.80	0.97	1.56	3.89	10.0	28.0	74.0	186.4
2002	9.8	5.9	0.25	0.12	0.16	0.49	0.77	0.94	1.57	3.86	9.7	27.2	73.5	187.7
2003	9.8	5.7	0.25	0.11	0.14	0.46	0.75	0.91	1.58	3.81	9.6	26.4	72.9	191.0
2004	9.4	5.5	0.23	0.10	0.15	0.44	0.67	0.87	1.53	3.67	9.0	25.0	69.9	176.0
2005	9.3	5.7	0.24	0.10	0.16	0.48	0.69	0.89	1.56	3.61	8.9	24.1	67.4	172.1
2006[2]	9.1	5.4	0.23	0.12	0.15	0.46	0.67	0.89	1.55	3.58	8.8	23.2	64.7	163.4
2007[p]	9.1	5.3	0.26	0.12	0.13	0.44	0.65	0.89	1.54	3.42	8.7	22.5	62.9	162.0
2005 March	10.5	6.2	0.26	0.09	0.17	0.46	0.71	0.88	1.56	3.83	9.7	26.6	77.3	201.2
June	9.1	5.5	0.25	0.10	0.18	0.42	0.59	0.83	1.57	3.53	8.8	23.4	65.8	162.9
Sept	8.3	5.3	0.20	0.09	0.12	0.40	0.63	0.85	1.44	3.46	8.3	22.2	59.6	146.0
Dec	9.3	5.6	0.21	0.11	0.11	0.39	0.62	0.73	1.46	3.54	8.8	24.0	66.9	176.9
2006[2] March	10.2	5.3	0.29	0.14	0.16	0.46	0.72	0.95	1.59	3.82	9.5	25.4	73.7	189.6
June	9.0	5.5	0.24	0.10	0.15	0.45	0.69	0.89	1.57	3.60	8.8	23.3	63.7	158.5
Sept	8.4	5.4	0.14	0.11	0.15	0.51	0.58	0.83	1.49	3.43	8.3	21.5	58.7	143.8
Dec	8.9	5.6	0.26	0.13	0.15	0.43	0.69	0.90	1.54	3.50	8.7	22.5	62.7	162.1
2007[3] March[p]	9.9	5.3	0.28	0.12	0.14	0.47	0.65	0.91	1.54	3.64	9.1	24.2	69.4	183.9
June[p]	8.8	5.7	0.26	0.12	0.14	0.44	0.65	0.90	1.50	3.39	8.6	22.1	61.0	153.7
Sept[p]	8.3	5.1	0.22	0.09	0.13	0.40	0.61	0.89	1.50	3.18	8.2	20.8	57.3	141.8
Dec[p]	9.3	5.2	0.28	0.13	0.12	0.43	0.69	0.88	1.61	3.45	9.0	22.9	63.8	168.9
Females														
1976	11.8	12.2	0.46	0.24	0.21	0.35	0.40	0.56	1.46	4.30	10.1	26.0	74.6	196.6
1981	11.3	9.4	0.46	0.19	0.19	0.32	0.35	0.52	1.26	3.80	9.5	24.1	66.2	178.2
1986	11.4	8.0	0.40	0.17	0.17	0.29	0.33	0.47	1.12	3.24	9.2	23.4	62.5	169.4
1991	11.2	6.4	0.33	0.16	0.15	0.29	0.33	0.44	1.05	2.87	8.2	21.8	58.7	161.6
1996	11.0	5.3	0.25	0.10	0.12	0.29	0.31	0.46	1.04	2.63	7.1	20.6	55.8	158.9
1999	11.0	5.1	0.24	0.10	0.13	0.25	0.31	0.43	1.01	2.61	6.7	19.2	53.4	162.6
2000	10.5	5.1	0.20	0.10	0.11	0.25	0.30	0.44	1.00	2.62	6.4	18.1	50.8	155.2
2001	10.4	4.9	0.22	0.12	0.11	0.24	0.30	0.42	0.96	2.57	6.3	17.4	50.1	155.0
2002	10.4	4.5	0.20	0.10	0.11	0.24	0.27	0.44	0.94	2.54	6.0	17.0	50.4	159.4
2003	10.6	4.9	0.24	0.10	0.12	0.21	0.28	0.43	0.95	2.51	5.9	16.7	51.3	165.6
2004	9.9	4.6	0.20	0.09	0.10	0.22	0.27	0.42	0.93	2.39	5.7	15.8	48.6	154.3
2005	9.9	4.4	0.19	0.09	0.11	0.22	0.27	0.40	0.90	2.38	5.6	15.4	48.1	152.7
2006[2]	9.6	4.6	0.22	0.09	0.10	0.22	0.26	0.39	0.92	2.33	5.6	14.8	45.7	143.8
2007[p]	9.6	4.3	0.19	0.08	0.12	0.21	0.25	0.39	0.92	2.27	5.6	14.5	44.9	144.3
2005 March	11.6	4.8	0.22	0.09	0.13	0.20	0.32	0.46	0.95	2.57	6.0	17.3	57.0	184.7
June	9.5	4.7	0.20	0.10	0.10	0.25	0.27	0.37	0.97	2.31	5.5	15.0	46.6	144.2
Sept	8.7	3.9	0.14	0.06	0.09	0.20	0.24	0.36	0.86	2.32	5.4	13.8	42.0	129.7
Dec	9.8	4.2	0.19	0.08	0.11	0.22	0.24	0.41	0.84	2.31	5.6	15.3	46.8	152.7
2006[2] March	11.0	5.0	0.25	0.07	0.08	0.24	0.30	0.39	1.01	2.42	6.1	16.4	52.5	172.0
June	9.4	4.6	0.22	0.10	0.14	0.19	0.24	0.42	0.88	2.35	5.5	14.7	45.4	140.9
Sept	8.6	4.3	0.19	0.10	0.08	0.23	0.22	0.36	0.91	2.27	5.3	13.7	41.1	124.3
Dec	9.2	4.5	0.24	0.09	0.12	0.23	0.25	0.41	0.89	2.27	5.5	14.3	43.7	138.7
2007[3] March[p]	10.8	4.5	0.24	0.07	0.12	0.27	0.26	0.38	0.96	2.29	5.9	16.2	51.2	166.4
June[p]	9.2	4.6	0.22	0.10	0.13	0.18	0.22	0.44	0.87	2.32	5.5	14.1	42.9	136.7
Sept[p]	8.5	4.1	0.15	0.06	0.11	0.18	0.28	0.35	0.87	2.22	5.2	12.9	40.0	125.3
Dec[p]	9.8	4.2	0.16	0.10	0.12	0.20	0.25	0.38	0.97	2.26	5.7	14.7	45.5	149.1

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 2005. 2006 figures and provisional 2007 figures relate to registrations.
Death rates from 2002 to 2005 have been updated to include the latest revised mid-year population estimates that take into account improved estimates of international migration.

1 Rates per 1,000 live births.
2 Death rates for 2006 have been calculated using the mid 2006 population estimates published on 22 August 2007.
3 Death rates for 2007 are based on the 2006-based population projections for 2007.
p provisional.

Table 6.2 Deaths: subnational

Government Office Regions of England — 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	10.3	10.0	7.8	10.0	11.1
2003		11.3	11.0	10.5	10.3	10.5	9.9	7.9	9.9	11.2
2004		11.0	10.5	10.1	9.7	9.9	9.5	7.3	9.4	10.4
2005		10.8	10.4	9.9	9.7	9.9	9.4	7.1	9.4	10.4
2006[1]		10.5	10.2	9.6	9.6	9.7	9.2	6.8	9.2	10.1
2007[p]		10.5	10.3	9.8	9.5	9.7	9.2	6.7	9.1	10.3
2006[1]	March	11.6	11.4	10.7	10.8	11.1	10.6	7.8	10.8	11.6
	June	10.6	10.2	9.5	9.5	9.6	9.2	6.7	8.9	9.9
	Sept	9.4	9.3	8.8	8.7	8.8	8.3	6.2	8.1	9.1
	Dec	10.6	9.9	9.5	9.5	9.4	9.0	6.5	8.8	9.9
2007[1]	March[p]	11.9	11.7	11.0	10.7	11.0	10.3	7.4	10.1	11.6
	June[p]	9.9	9.9	9.5	9.1	9.4	8.8	6.5	8.8	9.8
	Sept[p]	9.4	9.2	8.8	8.5	8.5	8.3	6.1	8.2	9.2
	Dec[p]	10.7	10.4	10.0	9.7	9.8	9.4	6.8	9.5	10.5
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		4.7	5.6	6.0	4.8	6.6	4.0	5.2	3.9	4.5
2006		5.4	5.6	5.7	5.4	6.4	4.1	4.9	4.1	4.0
2007		4.7	5.0	5.7	5.3	5.9	4.3	4.5	3.9	4.2
2006	March	5.4	6.0	5.4	5.9	6.6	3.8	5.5	4.3	4.2
	June	6.4	5.5	6.1	5.0	7.0	4.3	4.6	4.2	3.7
	Sept	5.4	5.2	4.8	5.3	6.7	3.6	4.8	4.2	3.6
	Dec	4.5	5.7	6.6	5.5	5.3	4.6	4.7	3.9	4.7
2007	March	5.1	5.1	4.5	5.3	6.4	4.2	4.5	3.9	4.4
	June	4.5	5.5	7.2	6.5	6.1	3.9	5.1	4.3	3.9
	Sept	4.0	4.3	5.2	5.1	5.5	4.7	4.7	3.9	4.1
	Dec	5.3	5.2	5.7	4.3	5.7	4.4	4.0	3.5	4.2
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		2.9	3.8	4.0	3.5	4.9	2.6	3.4	2.7	3.2
2006		3.8	3.8	4.0	4.0	4.6	2.9	3.4	2.8	2.9
2007		3.0	3.3	4.0	3.6	4.5	3.0	3.1	2.6	2.8
2006	March	4.1	3.8	4.0	4.2	4.6	2.7	3.4	2.9	3.2
	June	4.0	3.8	4.2	3.9	5.1	3.2	3.3	2.7	2.4
	Sept	3.4	3.5	3.3	3.9	5.4	2.5	3.5	2.9	2.6
	Dec	3.7	4.1	4.7	4.0	3.2	3.1	3.6	2.5	3.6
2007	March	4.0	3.8	3.3	3.4	4.8	2.9	3.0	2.6	3.0
	June	1.8	3.7	5.2	4.5	4.6	2.6	3.5	3.0	2.5
	Sept	2.6	2.7	3.5	3.5	4.2	3.1	3.1	2.5	3.1
	Dec	3.7	2.9	3.8	2.8	4.6	3.6	2.7	2.4	2.7
Perinatal mortality (stillbirths and deaths under 1 week per 1,000 total births)										
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	9.1	9.5	10.2	7.3	9.6	7.0	7.0
2004		7.9	8.4	9.4	8.1	9.6	7.6	9.3	7.0	7.2
2005		7.8	8.2	9.4	7.6	9.9	6.4	8.5	6.8	6.8
2006		8.0	8.3	8.5	8.4	9.2	6.7	8.8	7.0	6.6
2007[p]		7.3	7.9	8.8	7.3	9.1	7.0	8.4	6.6	6.4
2006	March	8.2	9.0	7.6	8.7	9.6	7.4	9.1	7.6	6.5
	June	8.7	8.3	9.2	9.1	10.1	7.0	8.7	6.8	6.8
	Sept	7.5	8.0	8.4	8.4	9.6	6.6	8.7	6.6	6.2
	Dec	7.8	7.8	8.7	7.6	7.4	6.0	8.9	7.0	7.0
2007	March[p]	7.8	8.5	7.8	6.8	9.5	7.6	8.3	6.6	6.8
	June[p]	6.8	7.4	9.2	8.6	9.8	6.7	9.1	7.1	6.5
	Sept[p]	7.4	7.2	8.9	7.1	7.7	7.0	8.6	6.1	6.5
	Dec[p]	7.1	8.5	9.0	6.7	9.5	6.8	7.6	6.6	6.0

Note: Figures represent the numbers of deaths occurring in each year with the exception of 2006 figures and provisional 2007 figures which relate to registrations.
Death rates from 2002 to 2005 have been updated to include the latest revised mid-year population estimates that take into account improved estimates of international migration.

1 Total deaths rates for 2006 and 2007 have been calculated using the mid-2006 population estimates published on 22 August 2007. In editions 36, 37 and 38 of *Health Statistics Quarterly*, 2006 total death rates were calculated using mid-2005 population estimates.

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 rates per million population for selected causes

Year and quarter	All deaths		All causes (age - standardised rates per million population[2])	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
			A00–R99 V01–Y89	(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	:	:
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	8,081	131	110	151	90	559	27	8	3	:	:
2003	253.9	982	8,000	135	102	145	90	539	28	8	2	:	:
2004	244.1	939	7,554	129	95	143	92	521	30	9	2	:	:
2005	243.3	929	7,356	132	93	137	92	515	28	8	2	:	:
2006	240.9	913	7,123	131	83	132	90	509	31	7	2	:	:
2007	240.8	912	7,118	131	84	131	90	508	32	8	3	:	:
2005 March	67.8	1,050	8,273	134	92	139	91	529	29	7	3	:	:
June	59.1	905	7,077	135	95	131	94	490	27	7	2	:	:
Sept	55.1	834	6,641	130	95	134	89	500	27	8	3	:	:
Dec	61.3	928	7,353	130	88	145	94	540	29	9	2	:	:
2006 March	66.5	1,023	7,931	131	82	134	98	522	32	7	2	:	:
June	59.4	904	7,058	132	82	128	87	504	30	7	2	:	:
Sept	55.5	835	6,536	128	81	133	85	497	29	7	1	:	:
Dec	59.5	894	6,985	131	86	133	91	515	31	8	3	:	:
2007[3] March	65.4	1,005	7,804	128	90	135	87	533	34	7	2	:	:
June	58.2	885	6,918	132	86	124	88	502	32	8	3	:	:
Sept	55.2	829	6,491	131	81	129	89	479	30	7	3	:	:
Dec	62.0	932	7,272	131	80	135	96	519	32	9	3	:	:
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
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	1,043	5,524	51	44	103	44	284	19	3	302	29	112
2003	284.4	1,055	5,575	50	42	98	46	285	20	3	293	27	108
2004	268.4	1,075	5,206	48	41	96	46	283	19	3	278	26	100
2005	269.4	990	5,188	48	39	96	46	290	21	3	284	26	102
2006	261.7	956	4,989	48	35	93	46	300	19	4	277	24	99
2007	263.3	962	4,991	48	35	93	48	304	22	4	271	24	97
2005 March	77.9	1,162	5,974	50	41	92	47	290	20	4	292	26	101
June	64.7	953	5,033	45	36	96	47	288	22	4	281	27	105
Sept	59.6	868	4,629	50	40	102	43	283	20	3	281	26	99
Dec	67.2	979	5,133	47	39	95	45	300	20	3	281	24	104
2006 March	74.5	1,104	5,658	48	40	90	45	309	16	4	296	26	105
June	64.4	945	4,940	46	34	89	46	294	18	4	266	22	101
Sept	59.1	856	4,540	47	33	99	44	289	19	3	272	23	96
Dec	63.7	923	4,832	51	34	95	49	307	21	4	273	23	93
2007[3] March	74.0	1,096	5,602	50	36	93	49	318	22	4	287	26	96
June	62.8	921	4,824	49	32	89	46	299	22	4	270	22	98
Sept	58.8	852	4,470	40	37	92	48	289	21	3	254	22	98
Dec	67.7	981	5,079	51	37	97	49	309	21	4	272	26	95

Note: Figures represent the number of deaths registered in each year up to 1992 and the number of deaths occurring in each year from 1993 to 2005. 2006 figures and provisional 2007 figures relate to registrations.
The rates by cause of death in this table 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.

Death rates from 2002 to 2005 have been updated to include the latest revised mid-year population estimates that take into account improved estimates of international migration.

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 Directly age-standardised to the European Standard Population. See Notes to Tables.
3 Death rates for 2007 are provisional and based on the 2006-based population projections for 2007.

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

England and Wales

Age-standardised rates[2] per million population for selected causes

Malignant neoplasms													
Prostate	Bladder	Leukaemia	Diabetes mellitus	Ischaemic heart disease	Cerebro vascular 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
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	1,784	690	388	396	15	56	144	83	131	2002
273	87	71	91	1,703	662	408	411	14	53	157	84	129	2003
267	85	67	83	1,566	595	360	364	15	50	151	77	125	2004
256	80	67	79	1,470	555	353	368	12	46	156	75	118	2005
250	81	68	74	1,353	520	320	343	10	45	161	83	123	2006[3]
254	83	67	72	1,311	496	314	345	11	40	164	80	120	2007
265	85	67	93	1,678	647	500	491	14	55	167	74	132	2005 March
251	80	65	75	1,446	536	327	358	13	45	149	77	122	June
249	77	65	67	1,292	485	247	271	9	42	145	82	115	Sept
260	79	70	81	1,467	554	340	357	12	43	163	66	104	Dec
256	79	73	86	1,543	611	434	440	11	52	158	83	128	2006 March
249	81	63	75	1,351	506	318	351	10	48	164	90	117	June
241	83	67	66	1,210	454	242	271	11	41	158	77	112	Sept
252	80	69	71	1,312	509	287	312	8	41	164	82	134	Dec
259	85	67	79	1,477	559	410	445	12	45	180	85	116	2007[3] March
253	82	70	67	1,279	479	297	319	11	37	155	78	122	June
240	80	62	67	1,173	442	234	272	9	36	153	74	117	Sept
265	84	70	77	1,319	505	318	347	11	41	169	83	126	Dec
													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
:	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	843	616	316	224	20	37	79	24	41	2002
:	30	39	66	811	606	337	244	20	36	81	24	41	2003
:	28	39	60	736	548	296	214	17	35	78	20	38	2004
:	28	39	57	686	519	298	224	17	32	81	22	38	2005
:	29	36	54	629	478	261	213	16	29	87	24	39	2006[3]
:	27	38	54	600	462	257	221	15	26	88	23	35	2007
:	30	43	65	806	605	453	320	24	36	88	26	40	2005 March
:	29	40	54	674	496	261	207	17	32	74	20	43	June
:	27	35	50	600	462	199	157	12	28	75	21	38	Sept
:	25	40	58	665	514	281	213	16	31	85	21	33	Dec
:	29	42	60	733	551	371	283	19	37	87	25	40	2006 March
:	27	34	56	637	477	259	214	16	27	85	27	37	June
:	29	35	51	562	427	186	163	13	27	86	21	41	Sept
:	29	35	51	585	459	231	193	16	25	89	23	38	Dec
:	30	40	59	699	526	360	302	19	28	97	23	33	2007[3] March
:	29	36	49	578	446	232	206	14	28	87	27	32	June
:	25	34	51	528	406	182	158	12	24	81	22	35	Sept
:	26	42	56	600	472	255	219	14	26	87	20	39	Dec

See notes opposite.

Report:

Deaths involving MRSA: England and Wales, 2003–07

Introduction

This report presents the latest figures from the Office for National Statistics (ONS) database of deaths where meticillin-resistant *Staphylococcus aureus* (MRSA) was mentioned as a contributory factor. It contains new data for deaths registered in 2007, and data for 2003 to 2006 are provided for comparison purposes. Mortality rates for 2007 have been calculated using the population projections for 2007,[1] as population estimates are not yet available. These rates are therefore provisional until updated in the next annual report.

Changes in this report

Data on deaths involving MRSA by individual communal establishment are included in this report for the first time. This follows the first release of data on deaths involving MRSA by communal establishment earlier this year.[2]

Background

This report examines trends from 2003 to 2007 in deaths that involved MRSA as a contributory factor. *Staphylococcus aureus* (*S. aureus*) is a type of common bacteria that may be resistant to meticillin and other antibiotics usually used to treat *S. aureus*. Box One explains the terms used in this report.

MRSA was first isolated in 1961, the same year that the antibiotic meticillin was first used. MRSA remained at low levels in the UK until 1992.[3] Since then, the number of invasive infections caused by MRSA increased each year until 2003,[4] with deaths increasing until 2005.[5] Those who die with MRSA are often already very ill and vulnerable to infection. A 2003 Department of Health report addressed actions that should be taken to reduce levels of healthcare associated infections.[6] Updated guidance on death certification, with specific reference to healthcare associated infections, was issued to doctors in May 2005.[7] This was followed by a message from the Chief Medical Officer to all doctors reminding them of their responsibilities with respect to death certification and drawing their attention to the guidance.[8]

The number of deaths due to MRSA 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). However MRSA, and other healthcare associated infections, are not often the underlying cause of death. Those who die with MRSA are usually patients who were already very ill and it is their existing illness, rather than MRSA, which is often designated as the underlying cause of death. There is therefore an interest in the number of deaths where MRSA contributed to the death – only conditions which contribute directly to the death should be recorded on the death certificate. Results presented in this report identify deaths where the underlying cause was MRSA and also where MRSA was not the underlying cause but was a contributory factor in the death.

Box one

Glossary of Terms

Staphylococcus aureus (*S. aureus*): This is a common germ that lives completely harmlessly on the skin and in the nose of about one third of people. It is more common on skin that is broken, for example, by a cut or sore. People who have *S. aureus* on, or in, their bodies but who are unharmed by it are described as **colonised**. *S. aureus* can cause problems when it gets the opportunity to enter the body. This is more likely to happen in people who are already unwell.

Meticillin-resistant *Staphylococcus aureus* (MRSA): This is a variety of *S. aureus* that is resistant to meticillin, and some of the other antibiotics that are usually used to treat *S. aureus*. This sometimes makes it more difficult to treat MRSA infections.

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 for each sex, and between males and females.

Communal establishments: These are locations where people live for a period of time in shared accommodation (for example, hospitals, nursing homes, hospices, prisons, boarding schools). Each has a unique code, used when registering any death that occurred there.

Source: Health Protection Agency; Office for National Statistics

Methods

All deaths are coded by the Office for National Statistics (ONS) according to the Tenth Revision of the International Classification of Diseases (ICD–10) supplied by the World Health Organization. Since 1993, ONS has stored the text of death certificates on a database, along with all the ICD coding relating to causes identified on the death certificate. ONS uses a combination of ICD–10 codes and this text to identify death certificates on which MRSA infection was mentioned.

Identification of deaths involving *Staphylococcus aureus* and MRSA

The ICD–10 codes used to select deaths to search manually were as used in previous analyses and are identified in Boxes Two and Three.[5] Initially all deaths which had a code which specifically related to *Staphylococcus* or *Staphylococcus aureus* mentioned on the death certificate were extracted from the database. The text of their death certificates was then searched manually to identify *S. aureus* and MRSA. The codes used to identify these deaths are given in Box Two.

Box two

ICD–10 codes specifically relating to *Staphylococcus* infection

Code	Text
A05.0	Food-borne staphylococcal intoxication
A41.0 – A41.2	Septicaemia due to *staphylococcus aureus*/other specified staphylococcus/unspecified staphylococcus
A49.0	Staphylococcal infection, unspecified
B95.6 – B95.8	*Staphylococcus aureus*/other staphylococcus/unspecified staphylococcus as the cause of diseases classified to other chapters
G00.3	Staphylococcal meningitis
J15.2	Pneumonia due to staphylococcus
L00	Staphylococcal scalded skin syndrome
M00.0	Staphylococcal arthritis and polyarthritis
P23.2	Congenital pneumonia due to staphylococcus
P36.2	Sepsis of newborn due to staphylococcus aureus

In addition, all deaths which had non-specific codes (that is, one which could include a *Staphylococcal* or an *S. aureus* infection but could also include other infections) mentioned anywhere on the death certificate were extracted. They were then searched manually to identify both *S. aureus* and MRSA. The codes used to identify these deaths are given in Box Three.

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.[9] However, as the data were based on all mentions of *S. aureus* and MRSA, 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 *S. aureus* were identified by selecting those deaths with a mention of *S. aureus* that also had one of the causes of death listed in Box Two or Box Three as the underlying cause. The same procedure was followed for the identification of those deaths with MRSA as the underlying cause. As in previous MRSA reports,[5] the code A41.9 (septicaemia, unspecified) was also used to indicate that MRSA was the underlying cause of death, where MRSA was mentioned on the death certificate. This is because this code is sometimes selected as the underlying cause of death when MRSA septicaemia is mentioned on the death certificate.

Box three

ICD–10 codes specifically relating to *Staphylococcus* infection

Code	Text
A04.8	Other specified bacterial intestinal infections
A38	Scarlet fever
A48.3	Toxic shock syndrome
G06.1	Intraspinal abscess and granuloma
G04.2	Bacterial meningoencephalitis and meningomyelitis, not elsewhere classified
I30.1	Infective pericarditis
I38	Endocarditis, valve unspecified
J03.8	Acute tonsillitis due to other specified organisms
J86	Pyothorax
K12.2	Cellulitis and abscess of mouth
K14.0	Glossitis
L03	Cellulitis
L08.9	Local infection of skin and subcutaneous tissue, unspecified
M60.0	Infective myositis
M86	Osteomyelitis
M46.2	Osteomyelitis of vertebra
M71.1	Other infective bursitis
N39.0	Urinary tract infection, site not specified
T80.2	Infections following infusion, transfusion and therapeutic injection
T81.4	Infection following a procedure, not elsewhere classified
T82.6	Infection and inflammatory reaction due to cardiac valve prosthesis
T82.7	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts
T83.5	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system
T83.6	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract
T84.5	Infection and inflammatory reaction due to internal joint prosthesis
T84.6	Infection and inflammatory reaction due to internal fixation device [any site]
T84.7	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts
T85.7	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts
T87.4	Infection of amputation stump
T88.0	Infection following immunization

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 (Box Four). 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 (for example, hospital, hospice, local authority residential home). Lastly, the NHS indicator code shows whether the establishment was NHS or non-NHS funded.

Box four

Derivation of Place of Death Classification

Place of death classification	Communal Establishment	Establishment type	NHS Indicator
Own home	Home	:	:
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)	non-NHS
Private residential home		Residential home (private)	non-NHS
Local Authority residential home		Residential home (local authority)	NHS
Other places	Elsewhere	All other codes	:

Deaths involving MRSA by individual communal establishment

Table 5 of this report uses information on the original cause of death. The original cause of death is that which is recorded in the public register and thus is considered to be discoverable information. The ONS guidance on disclosure control for vital statistics allows for information which is in the public domain or is discoverable information to be published in full in tabular form.[10] Other figures in this annual report use the final cause of death. Final cause of death means that the information in the public record may have been amended on receipt of later information sent in confidence by the doctor. This could be the results of a laboratory test, which may, for example, identify MRSA as the organism involved. This information cannot be published for small areas or communal establishments as it may identify individuals and the information was provided to ONS in confidence. This means that some of the records included in the national figures may not be included in Table 5, and totals may not sum to those in other tables in the report. The correct national figures remain those found in the rest of the report.

Linking deaths to the individual place where they occurred was done using the communal establishment code, which was then linked to the ONS Geography Communal Establishment file from May 2008. In Table 5, data on the number of deaths involving MRSA between 2003 and 2007 are grouped together. This table also presents the total number of deaths in each communal establishment and the percentage of all deaths in each of these establishments involving MRSA for the same period.

Data are presented in this report for each individual communal establishment that had 2,500 or more deaths from all causes between 2003 and 2007. Of these 216 establishments, 215 were hospitals and one was a hospice. Totals for all communal establishments included in the report, other establishments, own home and elsewhere are also included. Data in the accompanying unabridged tables (published online) are presented for each communal establishment that had at least one death involving MRSA.[11] These web tables present deaths involving MRSA, and the number of deaths from all causes, for individual establishments by single year.

Results

Number of deaths where *Staphylococcus aureus* or MRSA contributed to the death or was the underlying cause of death

The number of death certificates in England and Wales mentioning *Staphylococcus aureus* infection increased each year from 2003 to 2006 from 1,416 to 2,150 (Table 1). However in 2007 the number of certificates mentioning *Staphylococcus aureus* decreased slightly to 2,052. In 2003, 68 per cent of deaths mentioning *S. aureus* specified meticillin resistance. By 2007 this had risen to 78 per cent. The number of certificates mentioning MRSA increased from 968 in 2003 to 1,652 in 2006, and fell to 1,593 in 2007. Figure 1 shows that the number of death certificates mentioning *Staphylococcus aureus* which were not specified as meticillin-resistant has stayed fairly stable between 2003 and 2007.

The proportion of mentions of *S. aureus* or MRSA that were also selected as the underlying cause of death has stayed stable, at around one in three, between 2003 and 2007 (Table 1). Increases in the numbers of deaths where *S. aureus* or MRSA were selected as the underlying cause therefore reflects the increase in deaths where *S. aureus* or MRSA was mentioned as a contributing factor in the death.

Figure 1 Number of death certificates mentioning *Staphylococcus aureus* by meticillin resistance, 2003–07

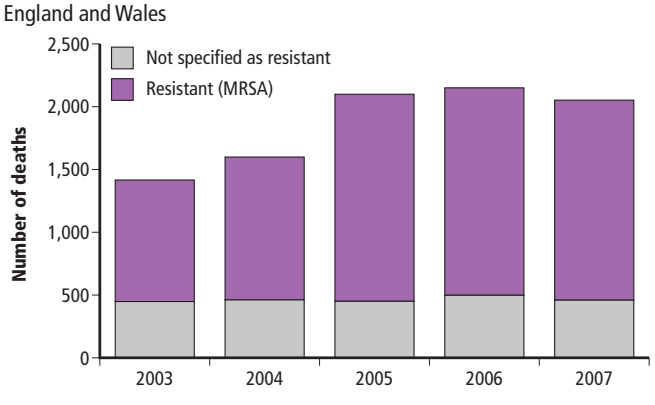


Table 1 Number of death certificates with *Staphylococcus aureus* and MRSA mentioned and as the underlying cause, 2003–07

England and Wales

	2003	2004	2005	2006	2007
England and Wales[1]					
Mentions					
All *Staphylococcus aureus*	1,416	1,599	2,099	2,150	2,052
MRSA	968	1,138	1,649	1,652	1,593
Percentage of *S.aureus* mentions that were MRSA	*68*	*71*	*79*	*77*	*78*
Underlying cause[2]					
All *Staphylococcus aureus*	491	547	642	707	630
MRSA	322	357	465	519	460
Percentage of mentions selected as underlying cause					
All *Staphylococcus aureus*	*35*	*34*	*31*	*33*	*31*
MRSA	*33*	*31*	*28*	*31*	*29*
England					
Mentions					
All *Staphylococcus aureus*	1,323	1,514	1,960	2,025	1,941
MRSA	902	1,069	1,536	1,556	1,517
Percentage of *S.aureus* mentions that were MRSA	*68*	*71*	*78*	*77*	*78*
Underlying cause[2]					
All *Staphylococcus aureus*	459	516	596	653	596
MRSA	300	334	432	480	439
Percentage of mentions selected as underlying cause					
All Staphylococcus aureus	*35*	*34*	*30*	*32*	*31*
MRSA	*33*	*31*	*28*	*31*	*29*
Wales					
Mentions					
All *Staphylococcus aureus*	91	84	134	119	103
MRSA	65	68	109	95	73
Percentage of *S.aureus* mentions that were MRSA	*71*	*81*	*81*	*80*	*71*
Underlying cause[2]					
All *Staphylococcus aureus*	31	31	46	52	30
MRSA	22	23	33	39	20
Percentage of mentions selected as underlying cause					
All *Staphylococcus aureus*	*34*	*37*	*34*	*44*	*29*
MRSA	*34*	*34*	*30*	*41*	*27*

1 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.
2 Excludes neonatal deaths.

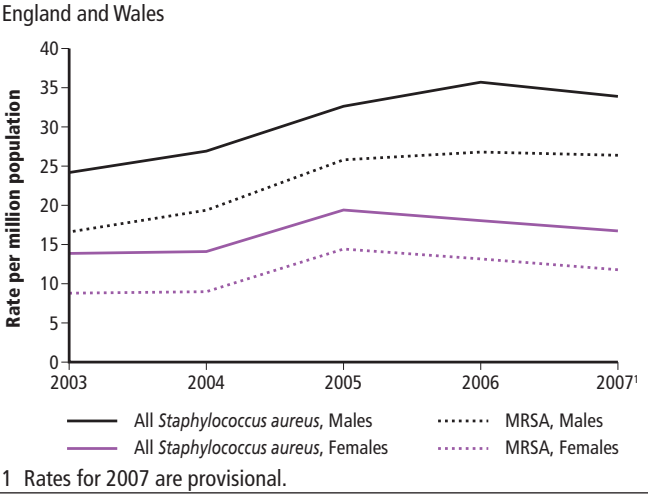
Mortality rates for all deaths mentioning *Staphylococcus aureus* or MRSA

Age-standardised rates for deaths involving *S. aureus* and MRSA were highest in males throughout the period 2003 to 2007 (Figure 2).

Rates for *S. aureus* among both males and females increased over this period, by 1.4 and 1.2 times respectively, to 33.9 deaths per million population in males and 16.7 per million in females in 2007 (Table 2).

The rates for deaths involving MRSA in males increased 1.6 times, from 16.6 per million population in 2003 to 26.4 in 2007. In females the rate increased 1.3 times from 8.8 to 11.8 per million population, over the same period. Between 2006 and 2007, the death rate for MRSA among males decreased by 1.5 per cent, with the rate among females decreasing by 10.5 per cent. This represents the first fall among males in England and Wales as a whole since reporting began, and the second consecutive year that the rate for females has fallen.

Figure 2 Age-standardised mortality rates for *Staphylococcus aureus* and MRSA, 2003–07[1]



1 Rates for 2007 are provisional.

Table 2 Age-standardised mortality rates for *Staphylococcus aureus* and MRSA by sex, 2003–07[1]

England and Wales — Rate per million population

	2003	2004	2005	2006	2007[1]
England and Wales[2]					
All *Staphylococcus aureus*, Males	24.2	26.9	32.6	35.7	33.9
All *Staphylococcus aureus*, Females	13.9	14.1	19.4	18.0	16.7
MRSA, Males	16.6	19.4	25.8	26.8	26.4
MRSA, Females	8.8	9.0	14.4	13.2	11.8
England					
All *Staphylococcus aureus*, Males	24.1	27.1	32.4	35.6	34.0
All *Staphylococcus aureus*, Females	13.8	14.2	19.3	18.1	16.9
MRSA, Males	16.5	19.4	25.6	26.8	26.7
MRSA, Females	8.7	8.9	14.3	13.2	11.9
Wales					
All *Staphylococcus aureus*, Males	25.4	23.7	34.6	33.8	30.5
All *Staphylococcus aureus*, Females	14.1	11.6	19.0	16.0	12.6
MRSA, Males	17.8	19.4	28.2	25.9	21.4
MRSA, Females	10.2	9.1	15.4	12.4	8.0

1 Rates for 2007 are provisional.
2 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

Table 3 Age-specific mortality rates for *Staphylococcus aureus* and MRSA by sex, 2003–07[1]

England and Wales — Rate per million population

Age group	Males		Females	
	All *S. aureus*	MRSA	All *S. aureus*	MRSA
England and Wales[2]				
Under 45	2.7	1.0	2.1	0.8
45–54	12.3	8.3	7.3	4.9
55–64	32.1	21.8	17.7	11.2
65–74	95.8	71.7	53.9	37.8
75–84	325.2	258.7	159.2	120.8
85 and over	783.0	656.0	390.3	311.0
England				
Under 45	2.7	1.1	2.1	0.8
45–54	12.6	8.6	7.4	4.8
55–64	31.4	21.1	17.8	11.1
65–74	95.1	71.2	54.0	37.8
75–84	325.0	258.0	157.9	119.7
85 and over	793.1	665.6	394.3	315.0
Wales				
Under 45	2.4	0.5	1.4	0.7
45–54	6.4	4.2	5.1	5.1
55–64	40.9	31.2	15.7	12.6
65–74	102.2	80.5	49.2	35.1
75–84	329.1	269.0	171.2	134.8
85 and over	608.3	490.9	325.5	245.2

1 Rates for 2007 are provisional.
2 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

Most of the deaths involving *S. aureus* or MRSA were in the older age groups. For the combined period 2003 to 2007, age-specific mortality rates for deaths involving MRSA in the 85 and over age group were 656 and 311 deaths per million population, for males and females respectively. In the under 45 age group there were 1.0 and 0.8 deaths per million population, for males and females respectively (Table 3).

Place of death

Death certificates rarely specify the place where an infection was acquired. However, the place of death is recorded. Between 2003 and 2007, deaths involving *S.aureus* and MRSA made up 0.36 per cent and 0.27 per cent respectively of all deaths in England and Wales (Table 4). Among deaths that occurred in NHS general hospitals and NHS nursing homes, deaths involving *S.aureus* made up 0.58 per cent and 0.65 per cent of the totals in these institutions respectively. Deaths involving MRSA made up 0.43 and 0.42 per cent of all deaths in NHS general hospitals and NHS nursing homes respectively.

The majority of deaths occur in hospital (56 per cent of all deaths between 2003 and 2007 occurred in NHS general hospitals). We would therefore expect the majority of *S. aureus* and MRSA deaths to also occur in hospital. Many of these deaths in hospital will have been to patients who were admitted because they were already seriously ill with another condition. In England and Wales over the period 2003 to 2007, 89.7 per cent of deaths that mentioned *S. aureus* and 88.0 per cent of deaths that mentioned MRSA occurred in NHS general hospitals.

Deaths involving MRSA by individual communal establishment

Table 5 presents data on the number of deaths between 2003 and 2007 in individual communal establishments.

The figures in this table should be interpreted with caution for a number of reasons:

1. Death certificates only tell us where a person died, not where any infection was acquired, or where any treatment that led to the disease was given. For this reason, we cannot be sure that an individual who dies in a particular establishment acquired an infection at the same site, or in any other hospital or place. Conversely, we cannot identify patients who acquired their infection in a given establishment, but died elsewhere after discharge or transfer. Variations in local patterns of care, including average length of stay and the use of community or intermediate care hospitals or nursing homes for convalescence after treatment in acute hospitals, may distort comparisons between communal establishments.

2. Death certification practices may differ between doctors and establishments. This means that some establishments may be more likely to record MRSA than others, and that data from different communal establishments may not be entirely comparable.

3. Some establishments may undertake more comprehensive screening or testing for MRSA, and may do this more often than others, and this may make it more likely that the infections are reported on death certificates for patients who died at those sites.

4. Different communal establishments provide care for different types of people. We would expect to see higher numbers of MRSA deaths in places treating more seriously ill or very old patients.

5. The registrar of deaths is required to record the address where the death occurred. This information is taken from the family member or other informant who registers the death. The name, street address and postcode of the building or other place are recorded in the register. These addresses are mapped to a list of communal establishments built up from the local knowledge of registrars which indicates the type of establishment, for example nursing homes, residential homes, prisons, and hospitals. The communal establishments from this list cannot easily be matched to lists of NHS trusts or hospitals produced by the Department of Health and others. It is, by its nature, a historical and changing list that relies on local updating.

Table 4 **Number of deaths mentioning *Staphylococcus aureus* and MRSA by place of death, compared to all causes of death, 2003–07**

England and Wales

		S. aureus			MRSA		
	All cause number of deaths	Number of *S. aureus* deaths	Percentage of all *S. aureus* deaths	*S.aureus* as a percentage of all deaths in the establishment	Number of MRSA deaths	Percentage of all MRSA deaths	MRSA as a percentage of all deaths in the establishment
England and Wales[1]							
Own home	479,370	143	*1.5*	*0.03*	112	*1.6*	*0.02*
NHS general hospital	1,448,346	8,352	*89.7*	*0.58*	6,162	*88.0*	*0.43*
Non-NHS general hospital	11,819	28	*0.3*	*0.24*	22	*0.3*	*0.19*
Hospice	119,842	46	*0.5*	*0.04*	42	*0.6*	*0.04*
NHS nursing home	12,635	82	*0.9*	*0.65*	53	*0.8*	*0.42*
Non-NHS nursing home	231,483	345	*3.7*	*0.15*	332	*4.7*	*0.14*
Private residential home	137,426	139	*1.5*	*0.10*	129	*1.8*	*0.09*
Local Authority residential home	34,112	30	*0.3*	*0.09*	30	*0.4*	*0.09*
Other places	98,012	151	*1.6*	*0.15*	118	*1.7*	*0.12*
Total	2,573,045	9,316	*100.0*	*0.36*	7,000	*100.0*	*0.27*
England							
Own home	447,844	131	*1.5*	*0.03*	101	*1.5*	*0.02*
NHS general hospital	1,348,059	7,847	*89.5*	*0.58*	5,787	*87.9*	*0.43*
Non-NHS general hospital	11,038	28	*0.3*	*0.25*	22	*0.3*	*0.20*
Hospice	115,664	46	*0.5*	*0.04*	42	*0.6*	*0.04*
NHS nursing home	12,517	81	*0.9*	*0.65*	52	*0.8*	*0.42*
Non-NHS nursing home	218,562	331	*3.8*	*0.15*	318	*4.8*	*0.15*
Private residential home	131,165	136	*1.6*	*0.10*	126	*1.9*	*0.10*
Local Authority residential home	32,228	30	*0.3*	*0.09*	30	*0.5*	*0.09*
Other places	88,492	133	*1.5*	*0.15*	102	*1.6*	*0.12*
Total	2,405,569	8,763	*100.0*	*0.36*	6,580	*100.0*	*0.27*
Wales							
Own home	31,436	12	*2.3*	*0.04*	11	*2.7*	*0.03*
NHS general hospital	96,561	483	*91.0*	*0.50*	365	*89.0*	*0.38*
Non-NHS general hospital	282	0	*0.0*	*0.00*	0	*0.0*	*0.00*
Hospice	4,031	0	*0.0*	*0.00*	0	*0.0*	*0.00*
NHS nursing home	113	1	*0.2*	*0.88*	1	*0.2*	*0.88*
Non-NHS nursing home	12,728	14	*2.6*	*0.11*	14	*3.4*	*0.11*
Private residential home	6,228	3	*0.6*	*0.05*	3	*0.7*	*0.05*
Local Authority residential home	1,882	0	*0.0*	*0.00*	0	*0.0*	*0.00*
Other places	8,259	18	*3.4*	*0.22*	16	*3.9*	*0.19*
Total	161,520	531	100.0	*0.33*	410	*100.0*	*0.25*

1 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

ONS does not have any direct measure of the numbers of patients at risk, for example, data on the numbers of patients treated, or the total number of in-patient days, in each communal establishment. We have reported the numbers of death certificates mentioning MRSA as a proportion of the total number of registered deaths that occurred in each establishment because this is the only available denominator. Higher numbers of deaths would be expected in larger establishments. For a given size of establishment, larger numbers of total deaths may be because the establishment treats more seriously ill and/ or elderly patients, the result of standards of care, or a combination of factors. This makes it difficult to interpret variations in the proportion of deaths with MRSA mentioned. To aid interpretation, we present both all deaths, deaths involving MRSA, and the proportion of all deaths involving MRSA.

The 216 communal establishments which had 2,500 or more deaths from all causes between 2003 and 2007 are listed in Table 5. In these establishments, there were a total of 5,756 deaths involving MRSA. This represents 82 per cent of all deaths involving MRSA over this period. For the selected establishments included in this report, deaths involving MRSA accounted for 0.44 per cent of all deaths in 2003 to 2007.

Key findings

- Deaths involving MRSA increased from 968 in 2003 to 1,652 in 2006, falling to 1,593 in 2007
- Between 2006 and 2007, age-standardised rates for deaths involving MRSA decreased by 1.5 per cent among males (the first fall since reporting began), and by 10.5 per cent among females
- Rates of deaths involving MRSA were highest in older age groups
- Between 2003 and 2007, MRSA was involved in 4 per 1,000 deaths in NHS general hospitals

References

1. Government Actuary's Department Population Projections, accessed 8 July 2008, available at: www.gad.gov.uk/Demography_Data/Population/
2. Office for National Statistics (2008), 'Report: Deaths involving MRSA and *Clostridium difficile* by communal establishment, England and Wales, 2001–06', *Health Statistics Quarterly* **38**, 74–84. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
3. Livermore D (2000) 'Antibiotic resistance in staphylococci', *International Journal of Antimicrobial Agents* **16** Suppl 1, S3-S10.

4. Health Protection Agency (2007) *Mandatory Surveillance of Healthcare Associated Infection Report 2007*, accessed 16 July 2008, available at: www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1196942166935?p=1158945066450
5. Office for National Statistics (2008), 'Report: Deaths involving MRSA: England and Wales, 2002–2006', *Health Statistics Quarterly* **37**, 57–62. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
6. Department of Health (2003), *Winning Ways: Working together to reduce Healthcare Associated Infection in England. Report from the Chief Medical Officer,* Department of Health: London.
7. Office for National Statistics, Guidance for doctors certifying cause of death in England and Wales from the Office for National Statistics Death Certification Advisory Group. Published on the General Register Office website, April 2005, accessed on 6 August: www.gro.gov.uk/medcert
8. Department of Health (2005), Chief Medical Officer update, Issue 42, Summer 2005, Department of Health: London.
9. Office for National Statistics (2005), *Mortality Statistics: Childhood Infant and Perinatal*, Series DH3 No.36. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305
10. Office for National Statistics (2008*) Briefing Note: ONS policy on protecting confidentiality within birth and death statistics (Revised 2008).* Available on the National Statistics website at: www.statistics.gov.uk/downloads/theme_health/ConfidentialityBirth&Death.pdf.
11. Office for National Statistics (2008) Deaths involving MRSA by communal establishment. Available on the National Statistics website at: www.statistics.gov.uk/downloads/theme_health/MRSA_establishments_2001_06.xls

Table 5 **Deaths involving MRSA by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003–07	MRSA deaths 2003–07	% total deaths involving MRSA
Addenbrookes Hospital, Cambridge	CB2 0QQ	7,992	69	*0.86*
Airedale General Hospital, Steeton Keighley	BD206TD	4,034	13	*0.32*
Alexandra Hospital, Redditch	B98 7UB	4,237	24	*0.57*
Arrowe Park Hospital, Birkenhead	CH495PE	9,940	40	*0.40*
Barnet General Hospital, Barnet	EN5 3DJ	6,674	25	*0.37*
Barnsley District General Hospital	S75 2EP	5,913	13	*0.22*
Basildon Hospital	SS165NL	9,242	11	*0.12*
Bassetlaw District General Hospital, Worksop	S81 0BD	3,325	7	*0.21*
Bedford Hospital (South Wing)	MK429DJ	5,315	29	*0.55*
Birmingham Heartlands Hospital, Bordesley Green East	B9 5SS	10,070	65	*0.65*
Bristol Royal Infirmary	BS2 8HW	6,238	51	*0.82*
Broomfield Hospital	CM1 7ET	7,061	21	*0.30*
Burnley General Hospital	BB102PQ	5,917	10	*0.17*
Castle Hill Hospital, Cottingham	HU165JQ	4,060	31	*0.76*
Central Middlesex Hospital Park Royal, London	NW107NS	2,642	8	*0.30*
Charing Cross Hospital, Fulham	W6 8RF	4,350	23	*0.53*
Chase Farm Hospital, Enfield	EN2 8JL	5,903	54	*0.91*
Chelsea & Westminster Hospital, London	SW109NH	3,045	13	*0.43*
Chorley and South Ribble District Hospital, Chorley	PR7 1PP	3,517	12	*0.34*
City General Hospital, Stoke on Trent	ST4 6QG	10,733	65	*0.61*
City Hospital, Nottingham	NG5 1PB	9,126	43	*0.47*
City Hospital, Winson Green	B18 7QH	5,972	29	*0.49*
Colchester General Hospital	CO4 5JL	8,980	25	*0.28*
Conquest Hospital, St Leonards-on-Sea	TN377RD	5,781	39	*0.67*
Countess of Chester Hospital, Chester	CH2 1UL	6,124	27	*0.44*
County Hospital, Hereford	HR1 2ER	3,847	23	*0.60*
County Hospital, Lincoln	LN2 5QY	7,139	30	*0.42*
Cumberland Infirmary, Carlisle	CA2 7HY	4,469	21	*0.47*
Darent Valley Hospital, Dartford	DA2 8AA	5,899	17	*0.29*
Derby City General Hospital	DE223NE	3,522	15	*0.43*
Derbyshire Royal Infirmary, Derby	DE1 2QY	8,453	18	*0.21*
Derriford Hospital, Plymouth	PL6 8DH	9,666	89	*0.92*
Dewsbury Health Care NHS Trust Dewsbury & Dis. Hosp.	WF134HS	4,465	21	*0.47*
Diana Princess Of Wales Hospital, Grimsby	DN332BA	5,081	12	*0.24*
District General Hospital, Southport	PR8 6PN	4,850	16	*0.33*
District Hospital, Peterborough	PE3 6DA	5,427	7	*0.13*
Dorset County Hospital, Dorchester	DT1 1TP	4,479	11	*0.25*
Ealing Hospital, Southall	UB1 3HW	4,183	30	*0.72*
East Surrey Hospital, Redhill	RH1 5RH	6,593	38	*0.58*
Eastbourne District General Hospital, Eastbourne	BN212UD	6,669	37	*0.55*
Epsom General Hospital	KT187EG	4,397	15	*0.34*
Fairfield General Hospital, Bury	BL9 7TD	5,084	15	*0.30*
Freeman Hospital, Newcastle	NE7 7DN	4,445	46	*1.03*
Frenchay Hospital	BS161LE	6,862	32	*0.47*
Frimley Park Hospital, Frimley	GU167UJ	6,594	25	*0.38*
Furness General Hospital, Barrow-in-Furness	LA144LF	3,331	24	*0.72*
General Hospital, Bishop Auckland	DL146AD	2,919	6	*0.21*
General Hospital, Eaglestone Milton Keynes	MK6 5LD	4,708	11	*0.23*
General Hospital, Kettering	NN168UZ	6,956	27	*0.39*
General Hospital, Northampton	NN1 5BD	6,789	36	*0.53*
General Hospital, Southampton	SO166YD	10,836	69	*0.64*
General Hospital, Uphill Weston super Mare	BS234TQ	4,327	29	*0.67*
General Infirmary, Leeds	LS1 3EX	8,691	79	*0.91*
George Eliot Hospital, Nuneaton	CV107DJ	6,473	19	*0.29*
Glenfield Hospital Trust, Leicester	LE3 9QP	4,154	19	*0.46*
Gloucestershire Royal Hospital	GL1 3NN	6,882	13	*0.19*
Good Hope Hospital, Sutton Coldfield	B75 7RR	7,925	40	*0.50*
Hammersmith Hospital	W12 0HS	2,812	5	*0.18*
Harrogate District Hospital	HG2 7SX	3,855	26	*0.67*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving MRSA by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003–07	MRSA deaths 2003–07	% total deaths involving MRSA
Hemel Hempstead General Hospital, Allandale	HP2 4AD	4,819	26	*0.54*
Hillingdon Hospital, Hillingdon	UB8 3NN	5,218	21	*0.40*
Hinchingbrooke Hospital, Huntingdon	PE296NT	3,435	29	*0.84*
Homerton University Hospital, Hackney	E9 6SR	3,295	7	*0.21*
Horton General Hospital, Banbury	OX169AL	2,754	8	*0.29*
Hull Royal Infirmary	HU3 2JZ	9,540	43	*0.45*
Ipswich Hospital NHS Trust	IP4 5PD	8,344	52	*0.62*
James Cook University Hospital, Middlesbrough	TS4 3BW	8,870	11	*0.12*
James Paget Hospital, Gorleston	NR316LA	6,176	26	*0.42*
John Radcliffe Oxford Radcliffe Hospital, Oxford	OX3 9DU	7,730	33	*0.43*
Kent & Canterbury Hospital, Canterbury	CT1 3NG	5,388	12	*0.22*
Kent & Sussex Hospital, Tunbridge Wells	TN4 8AT	3,769	16	*0.42*
King George Hospital, Goodmayes Ilford	IG3 8YB	5,904	17	*0.29*
King's College Hospital, Denmark Hill	SE5 9RS	6,990	47	*0.67*
Kings Mill Hospital, Sutton-in-Ashfield	NG174JL	6,970	29	*0.42*
Kingston Hospital, Kingston	KT2 7QB	7,171	34	*0.47*
Leicester General Hospital	LE5 4PW	5,309	18	*0.34*
Leicester Royal Infirmary	LE1 5WW	11,567	31	*0.27*
Leighton Hospital, Crewe	CW1 4QJ	6,511	38	*0.58*
Lister Hospital, Stevenage	SG1 4AB	5,958	49	*0.82*
Llandough Hospital, Penarth	CF642XX	3,718	5	*0.13*
Luton and Dunstable Hospital, Luton	LU4 0DZ	7,248	16	*0.22*
Macclesfield District General Hospital	SK103BL	4,071	13	*0.32*
Maelor Hospital, Wrexham	LL137TD	5,767	78	*1.35*
Maidstone Hospital	ME169QQ	4,995	27	*0.54*
Manor Hospital, Walsall	WS2 9PS	7,345	41	*0.56*
Mayday Hospital, Croydon	CR7 7YE	7,155	28	*0.39*
Medway Maritime Hospital, Gillingham	ME7 5NY	7,994	27	*0.34*
Memorial Hospital, Darlington	DL3 6HX	3,952	9	*0.23*
Morriston Hospital, Swansea	SA6 6NL	6,030	40	*0.66*
Musgrove Park Hospital, Taunton	TA1 5DA	6,241	82	*1.31*
Nevill Hall Hospital, Abergavenny	NP7 7EG	4,269	9	*0.21*
New Cross Hospital, Wolverhampton	WV100QP	10,133	38	*0.38*
Newcastle General Hospital, Newcastle upon Tyne	NE4 6BE	3,155	9	*0.29*
Newham University Hospital, Plaistow	E13 8SL	3,742	12	*0.32*
Norfolk and Norwich University Hospital, Colney	NR4 7UZ	12,124	81	*0.67*
North Cheshire Hospitals NHS Trust, Warrington	WA5 1QG	6,316	7	*0.11*
North Devon District Hospital, Barnstaple	EX314JB	3,452	26	*0.75*
North Manchester General Hospital, Crumpsall Manchester	M8 5RB	6,845	39	*0.57*
North Middlesex Hospital, Edmonton	N18 1QX	5,317	35	*0.66*
North Stafford Royal Infirmary, Hartshill	ST4 7LN	4,055	24	*0.59*
North Tyneside General Hospital, North Shields	NE298NH	5,557	55	*0.99*
Northern General Hospital, Sheffield	S5 7AU	11,219	21	*0.19*
Northwick Park Hospital, Harrow	HA1 3UJ	6,852	31	*0.45*
Oldchurch Hospital, Romford	RM7 0BE	7,365	7	*0.10*
Pilgrim Hospital (District Hospital), Boston	PE219QS	6,324	27	*0.43*
Pinderfields Hospital, Wakefield	WF1 4DG	5,530	34	*0.61*
Poole Hospital	BH152JB	6,674	48	*0.72*
Prince Charles Hospital, Merthyr Tydfil	CF479DT	4,560	9	*0.20*
Prince Philip Hospital, Dafen Llanelli	SA148QF	2,775	3	*0.11*
Princess Alexandra Hospital, Harlow	CM201QX	5,892	27	*0.46*
Princess of Wales Hospital, Bridgend	CF311RQ	4,926	24	*0.49*
Princess Royal Hospital, Telford	TF1 6TF	4,668	10	*0.21*
Princess Royal University Hospital, Farnborough	BR6 8ND	5,788	8	*0.14*
Queen Alexandra Hospital, Cosham Portsmouth	PO6 3LY	10,095	83	*0.82*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving MRSA by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003–07	MRSA deaths 2003–07	% total deaths involving MRSA
Queen Elizabeth Hospital, Edgbaston	B15 2TH	3,729	28	*0.75*
Queen Elizabeth Hospital, Gateshead	NE9 6SX	5,983	22	*0.37*
Queen Elizabeth Hospital, King's Lynn	PE304ET	6,688	24	*0.36*
Queen Elizabeth Hospital, Woolwich	SE184QH	6,197	11	*0.18*
Queen Elizabeth II Hospital, Welwyn Garden City	AL7 4HQ	4,208	35	*0.83*
Queen Elizabeth The Queen Mother Hospital, Margate	CT9 4AN	6,358	1	*0.02*
Queen Mary's Hospital, Sidcup	DA146LT	5,466	12	*0.22*
Queens Hospital, Burton upon Trent	DE130RB	5,814	47	*0.81*
Queen's Medical Centre, Nottingham	NG7 2UH	11,439	44	*0.38*
Rotherham District General Hospital, Rotherham	S60 2UD	7,065	10	*0.14*
Royal Albert Edward Infirmary, Wigan	WN1 2NN	7,293	11	*0.15*
Royal Berkshire Hospital, Reading	RG1 5AN	7,336	32	*0.44*
Royal Blackburn Hospital	BB2 3HH	4,077	5	*0.12*
Royal Bournemouth Hospital	BH7 7DW	8,169	22	*0.27*
Royal Cornwall Hospital, Truro	TR1 3LJ	7,814	36	*0.46*
Royal Devon and Exeter Hospital Wonford, Exeter	EX2 5DW	6,818	26	*0.38*
Royal Free Hospital, Camden	NW3 2QG	5,606	36	*0.64*
Royal Glamorgan Hospital, Llantrisant	CF728XR	4,566	18	*0.39*
Royal Gwent Hospital, Newport	NP202UB	8,051	20	*0.25*
Royal Hallamshire Hospital, Sheffield	S10 2JF	4,716	14	*0.30*
Royal Hampshire County Hospital, Winchester	SO225DG	4,621	24	*0.52*
Royal Hospital, Calow Chesterfield	S44 5BL	7,498	31	*0.41*
Royal Infirmary, Bradford	BD9 6RJ	6,201	29	*0.47*
Royal Infirmary, Lancaster	LA1 4RP	4,688	9	*0.19*
Royal Infirmary, Lindley Huddersfield	HD3 3EA	5,438	5	*0.09*
Royal Infirmary, Manchester	M13 9WL	6,665	37	*0.56*
Royal Infirmary, Doncaster	DN2 5LT	7,711	16	*0.21*
Royal Liverpool University Hospital	L7 8XP	8,573	29	*0.34*
Royal London Hospital, Whitechapel	E1 1BB	4,642	26	*0.56*
Royal Preston Hospital	PR2 9HT	6,788	19	*0.28*
Royal Shrewsbury Hospital	SY3 8XQ	5,544	13	*0.23*
Royal Surrey County Hospital, Guildford	GU2 7XX	5,539	19	*0.34*
Royal Sussex County Hospital, Brighton	BN2 5BE	7,227	83	*1.15*
Royal United Hospital, Bath	BA1 3QE	8,524	56	*0.66*
Royal Victoria Infirmary, Newcastle upon Tyne	NE1 4LP	4,925	21	*0.43*
Russells Hall Hospital, Dudley	DY1 2HQ	9,056	28	*0.31*
Salford Royal University Teaching Hospital	M6 8HD	7,482	31	*0.41*
Salisbury District Hospital	SP2 8BJ	5,044	30	*0.59*
Sandwell General Hospital, Lyndon West Bromwich	B71 4HJ	6,863	20	*0.29*
Scarborough Hospital	YO126QJ	4,011	9	*0.22*
Scunthorpe General Hospital	DN157BH	4,707	14	*0.30*
Selly Oak Hospital	B29 6JD	7,296	41	*0.56*
Singleton Hospital, Sketty Swansea	SA2 8QA	4,501	17	*0.38*
Solihull Hospital	B91 2JL	3,361	22	*0.65*
South Tyneside District Hospital, South Shields	NE340PL	4,580	17	*0.37*
Southend Hospital, Southend-on-Sea	SS0 0RY	10,457	13	*0.12*
Southmead Hospital, Bristol	BS105NB	4,549	52	*1.14*
St Christophers Hospice, Sydenham	SE266DZ	2,851	2	*0.07*
St Georges Hospital, Tooting	SW170QT	7,210	31	*0.43*
St Helier Hospital, Carshalton	SM5 1AA	6,028	16	*0.27*
St James University Hospital, Burmantofts Leeds	LS9 7TF	7,945	59	*0.74*
St Marys Hospital, Newport	PO305TG	4,099	7	*0.17*
St Marys Hospital, Portsmouth	PO3 6AD	3,367	37	*1.10*
St Marys Hospital, Westminster	W2 1NY	3,918	26	*0.66*
St Peters Hospital, Ottershaw Chertsey	KT160PZ	6,055	54	*0.89*
St Richards Hospital, Chichester	PO196SE	5,527	12	*0.22*
St Thomas's Hospital, Lambeth	SE1 7EH	5,522	46	*0.83*
Stafford Hospital	ST163SA	5,387	32	*0.59*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving MRSA by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003–07	MRSA deaths 2003–07	% total deaths involving MRSA
Stepping Hill Hospital, Stockport	SK2 7JE	7,332	27	*0.37*
Stoke Mandeville Hospital, Aylesbury	HP218AL	3,661	15	*0.41*
Sunderland Royal Hospital	SR4 7TP	9,826	63	*0.64*
Tameside General Hospital, Ashton under Lyne	OL6 9RW	7,341	23	*0.31*
The Calderdale Royal Hospital, Salterhebble Halifax	HX3 0PW	4,823	12	*0.25*
The General Hospital, Cheltenham	GL537AN	5,192	7	*0.13*
The General Infirmary, Pontefract	WF8 1PL	4,181	22	*0.53*
The Great Western Hospital, Swindon	SN3 1LU	6,543	31	*0.47*
The Infirmary, Rochdale	OL120NB	3,756	23	*0.61*
The North Hampshire Hospital, Basingstoke	RG249NA	3,737	11	*0.29*
The Princess Royal Hospital, Haywards Heath	RH164EX	2,854	21	*0.74*
The Royal Bolton Hospital, Farnworth	BL4 0JR	10,165	17	*0.17*
The Royal Oldham Hospital, Oldham	OL1 2JH	6,991	41	*0.59*
Torbay Hospital, Torquay	TQ2 7AA	6,402	26	*0.41*
Trafford General Hospital, Davyhulme Manchester	M41 5SL	3,432	21	*0.61*
University Hospital Aintree, Liverpool	L9 7AL	9,797	36	*0.37*
University Hospital Lewisham	SE136LH	6,115	18	*0.29*
University Hospital of Hartlepool, Cleveland	TS249AH	3,684	5	*0.14*
University Hospital of North Durham, Durham City	DH1 5TW	5,710	19	*0.33*
University Hospital of North Tees, Stockton on Tees	TS198PE	5,256	9	*0.17*
University Hospital of Wales, Cardiff	CF144XW	8,685	41	*0.47*
University Hospital, Walsgrave, Coventry (including Walsgrave Hospital)	CV2 2DX	11,296	33	*0.29*
Victoria Hospital, Blackpool	FY3 8NR	9,898	37	*0.37*
Wansbeck General Hospital, Ashington Northumberland	NE639JJ	5,429	31	*0.57*
Warwick Hospital	CV345BW	5,081	21	*0.41*
Watford General Hospital, Watford	WD180HB	4,967	18	*0.36*
West Cumberland Hospital, Hensingham Whitehaven	CA288JG	3,218	3	*0.09*
West Middlesex Hospital, Isleworth	TW7 6AF	4,765	43	*0.90*
West Suffolk Hospital, Bury St Edmunds	IP332QZ	5,596	38	*0.68*
West Wales General Hospital, Carmarthen	SA312AF	3,413	14	*0.41*
Wexham Park Hospital, Wexham Slough	SL2 4HL	5,694	14	*0.25*
Whipps Cross University Hospital, Leytonstone	E11 1NR	8,656	22	*0.25*
Whiston Hospital, Whiston	L35 5DR	8,502	26	*0.31*
Whittington Hospital, Islington	N19 3UA	3,691	27	*0.73*
William Harvey Hospital, Ashford	TN240LZ	6,120	22	*0.36*
Withybush General Hospital, Haverfordwest	SA612PZ	3,195	3	*0.09*
Worcestershire Royal Hospital, Worcester	WR5 1DD	7,995	40	*0.50*
Worthing Hospital	BN112DH	6,961	25	*0.36*
Wycombe General Hospital, High Wycombe	HP112TT	4,198	29	*0.69*
Wythenshawe Hospital, Manchester	M23 9LT	7,693	18	*0.23*
Yeovil District Hospital, Higher Kingston Yeovil	BA214AT	3,848	25	*0.65*
York Hospital	YO318HE	7,003	16	*0.23*
Ysbyty Glan Clwyd, Bodelwyddan	LL185UJ	5,966	8	*0.13*
Ysbyty Gwynedd, Penrhosgarnedd Bangor	LL572PW	4,817	20	*0.42*
Listed establishments		1,302,096	5,756	*0.44*
Other establishments		738,808	1,115	*0.15*
Own home		479,370	112	*0.02*
Elsewhere		52,771	17	*0.03*
Totals		2,573,045	7,000	*0.27*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Report:

Deaths involving *Clostridium difficile*: England and Wales, 2003–07

Introduction

This report presents the latest figures from the Office for National Statistics (ONS) database of deaths where *Clostridium difficile (C. difficile)* was mentioned as a contributory factor. It contains new data for deaths registered in 2007, and data for 2003 to 2006 are provided for comparison purposes. Mortality rates for 2007 have been calculated using the population projections for 2007,[1] as population estimates are not yet available. These rates are therefore provisional until updated in the next annual report.

Changes in this report

Data on deaths involving *C. difficile* by individual communal establishment are included in this report for the first time. This follows the first release of data on deaths involving *C. difficile* by communal establishment earlier this year.[2]

Background

This report examines trends in deaths that involved *C. difficile* as a contributory factor for 2003 to 2007. *C. difficile* is a spore-forming bacterium found naturally in the gut of a small proportion (around 3 per cent)[3] 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.[4] *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.

Box one

Glossary of Terms

Clostridium difficile *(C. difficile):* This 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): This 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.

Communal establishments: These are locations where people live for a period of time in shared accommodation (for example, hospitals, nursing homes, hospices, prisons, boarding schools). Each has a unique code, used when registering any death that occurred there.

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

C. difficile was first described in the 1930s,[5] but it was not identified as the cause of pseudomembranous colitis following antibiotic therapy until the late 1970s.[6,7,8,9] 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* associated disease. 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.[10,11] Patients are also at risk of developing *C. difficile* disease when there are outbreaks in hospitals. Poor infection control is also an important risk factor.

A 2003 Department of Health report addresses actions that should be taken to reduce levels of healthcare associated infections.[12] A report on *C. difficile* and actions to reduce the chances of outbreaks was released by the Health Protection Agency in February 2003.[13] In January 2004, the Health Protection Agency (HPA) commenced a mandatory reporting scheme for all cases of *C. difficile* in people aged 65 years and over. In April 2007, the scheme was expanded to all patients aged two years and over.[14] Results from the surveillance scheme are published annually, on the HPA website.[15] Updated guidance on death certification, with specific reference to healthcare associated infections, was issued to doctors in May 2005.[16] This was followed by a message from the Chief Medical Officer to all doctors reminding them of their responsibilities with respect to death certification and drawing their attention to the guidance.[17]

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 infections that are often hospital-acquired, 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. The ICD–10 codes used to select deaths from 2001 onwards to search manually are shown in Box Two.

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.[18] 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 *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 Box Two.

Box two

Specific and non-specific ICD–10 codes related to *Clostridium difficile*

Specific Codes[1]	Non-specific codes[1]
A04.7 (Enterocolitis due to *Clostridium difficile*)	A05.8 (Other specified bacterial food borne intoxications)
	A41.4 (Septicaemia due to anaerobes (Excludes: gas gangrene)
	A48.0 (Gas gangrene: Clostridial; cellulites, myoncrosis)
	A49.8 (Other bacterial infections of unspecified site)
	P36.5 (Sepsis of newborn due to anaerobes)

1 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.

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 (Box Three). 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 (for example, hospital, hospice, local authority residential home). Lastly, the NHS indicator code shows whether the establishment was NHS or non-NHS funded.

Deaths involving *C. difficile* by individual communal establishment

Table 5 of this report uses information on the original cause of death. The original cause of death is that which is recorded in the public register and thus is considered to be discoverable information. The ONS guidance on disclosure control for vital statistics allows for information which is in the public domain or is discoverable information to be published in full in tabular form.[19] Other figures in this annual report use the final cause of death. Final cause of death means that the information in the public record may have been amended on receipt of later information sent in confidence by the doctor. This could be the results of a laboratory test, which may, for example, identify *C. difficile* as the organism involved. This information cannot be published for small areas or communal establishments as it may identify individuals and the information was provided to ONS in confidence. This means that some of the records included in the national figures may not be included in Table 5, and totals do not sum to those in other tables in the report. The correct national figures remain those found in the rest of the report. It should be noted that differences are extremely slight.

Linking deaths to the individual place where they occurred was done using their communal establishment codes, which were then linked to the ONS Geography Communal Establishment file from May 2008. In Table 5, data on the number of deaths involving *C. difficile* between 2003 and 2007 are grouped together. This table also presents the total number of deaths in each communal establishment and the percentage of all deaths in each of these establishments involving *C. difficile* for the same period.

Box three

Derivation of Place of Death Classification

Place of death classification	Communal Establishment	Establishment type	NHS Indicator
Own home	Home	:	:
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)	non-NHS
Private residential home		Residential home (private)	non-NHS
Local Authority residential home		Residential home (local authority)	NHS
Other places	Elsewhere	All other codes	:

Data are presented in Table 5 for each individual communal establishment that had 2,500 or more deaths from all causes between 2003 and 2007. Of these 216 establishments, 215 were hospitals and one was a hospice. Totals for all communal establishments included in the report, other establishments, own home and elsewhere are also included. Data in the accompanying unabridged tables (published online) [20] are presented for each communal establishment that had at least one death involving *C. difficile*. These web tables present deaths involving *C. difficile*, and the number of deaths from all causes, for individual establishments by single year.

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 2003 and 2007 (Table 1 and Figure 1). Mentions of *C. difficile* on death certificates increased from 1,804 in 2003

Figure 1 Number of death certificates mentioning *Clostridium difficile*, by whether it was the underlying cause of death, 2003–07

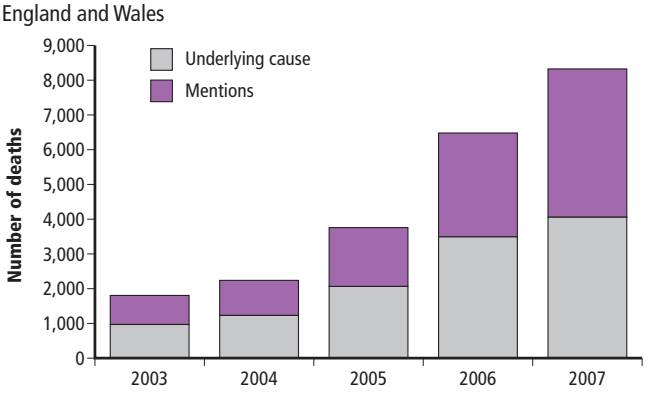


Table 1 Number of death certificates with *Clostridium difficile* mentioned and as the underlying cause, 2003–07

England and Wales

	2003	2004	2005	2006	2007
England and Wales[1]					
Certificates mentioning *C. difficile*	1,804	2,238	3,757	6,480	8,324
Certificates where *C. difficile* was the underlying cause of death	968	1,229	2,063	3,490	4,056
Percentage of mentions selected as underlying cause	*54*	*55*	*55*	*54*	*49*
England					
Certificates mentioning *C. difficile*	1,720	2,146	3,648	6,301	7,916
Certificates where *C. difficile* was the underlying cause of death	922	1,172	1,998	3,393	3,875
Percentage of mentions selected as underlying cause	*54*	*55*	*55*	*54*	*49*
Wales					
Certificates mentioning *C. difficile*	83	88	104	170	399
Certificates where *C. difficile* was the underlying cause of death	46	54	61	93	177
Percentage of mentions selected as underlying cause	*55*	*61*	*59*	*55*	*44*

1 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

to 8,324 in 2007. Overall the number of deaths with a mention of *C. difficile* was 4.6 times higher in 2007 than it was in 2003. The number of certificates recording *C. difficile* increased by 28 per cent between 2006 and 2007. 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 until 2007, where it fell to 49 per cent (Table 1).

Mortality rates for all deaths mentioning *Clostridium difficile*

Age-standardised rates for deaths involving *C. difficile* increased by 4.5 times among males, and by 4.2 times among females between 2003 and 2007. Rates increased from 18.8 to 84.9 per million population among males, and from 19.0 to 80.5 per million population among females (Table 2). Between 2006 and 2007, rates increased by 29.8 and 25.4 per cent respectively for males and females. Overall, male and females rates for deaths involving *C. difficile* were very similar in each year, with the biggest difference in rates being in 2007 (Figure 2).

Most of the deaths involving *C. difficile* occurred among older people. Mortality rates in specific age groups for England and Wales are shown in Table 3. In the 85 and over age group, there were 2,055 and 2,031 deaths per million population, for males and females respectively, in the period 2003 to 2007. This compares with 0.2 and 0.6 deaths per million population, for males and females respectively, in the under 45 age group.

Table 2 Age-standardised mortality rates for *Clostridium difficile* by sex, 2003–2007[1]

England and Wales — Rate per million population

	2003	2004	2005	2006	2007[1]
England and Wales[2]					
Males	18.8	23.7	37.0	65.5	84.9
Females	19.0	23.1	38.6	64.2	80.5
England					
Males	19.1	24.1	38.3	68.0	86.2
Females	19.2	23.5	39.8	66.2	81.2
Wales					
Males	13.8	16.2	16.2	23.3	63.3
Females	15.8	15.7	19.8	31.7	68.7

1 Rates for 2007 are provisional.
2 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

Figure 2 Age-standardised mortality rates for *Clostridium difficile* by sex, 2003–07[1]

1 Rates for 2007 are provisional.

Table 3 Age-specific mortality rates for *Clostridium difficile* by sex, 2003–07[1]

England and Wales — Rates per million population

	England and Wales[2]		England		Wales	
Age group	Males	Females	Males	Females	Males	Females
Under 45	0.2	0.6	0.2	0.6	0.2	0.7
45-54	4.5	4.8	4.5	4.9	3.2	3.1
55-64	21.8	19.8	21.9	20.0	18.3	16.8
65-74	108.1	101.1	111.8	102.8	49.5	70.2
75-84	563.8	555.9	581.1	567.5	289.9	366.1
85 and over	2,055.0	2,030.6	2,099.0	2,077.8	1,312.7	1,266.2

1 Rates for 2007 are provisional.
2 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

Place of death

Death certificates rarely specify the place where an infection was acquired. However, the place of death is recorded. Between 2003 and 2007, deaths involving *C. difficile* made up 0.88 per cent of all deaths in England and Wales (Table 4). Deaths involving *C. difficile* made up 1.43 per cent and 1.33 per cent of all deaths in NHS general hospitals and NHS nursing homes respectively.

The majority of deaths in England and Wales occur in hospital (56 per cent of all deaths between 2003 and 2007 occurred in NHS general hospitals). We would therefore expect the majority of *C. difficile* deaths to also occur in hospital. Many deaths in hospital will have been to patients who were admitted because they were already seriously ill with another condition. In England and Wales, over the period 2003 to 2007, 91.8 per cent of deaths that mentioned *C. difficile* occurred in NHS general hospitals.

Deaths involving *C. difficile* by individual communal establishment

Table 5 presents data on the number of deaths between 2003 and 2007 in individual communal establishments.

The figures in this table should be interpreted with caution for a number of reasons:

1. Death certificates only tell us where a person died, not where any infection was acquired, or where any treatment that led to the disease was given. For this reason, we cannot be sure that an individual who dies in a particular establishment acquired an infection at the same site, or in any other hospital or place. Conversely, we cannot identify patients who acquired their infection in a given establishment, but died elsewhere after discharge or transfer. Variations in local patterns of care, including average length of stay and the use of community or intermediate care hospitals or nursing homes for convalescence after treatment in acute hospitals, may distort comparisons between communal establishments.

2. Death certification practices may differ between doctors and establishments. This means that some establishments may be more likely to record *C. difficile* than others, and that data from different communal establishments may not be entirely comparable.

3. Some establishments may undertake more comprehensive screening or testing for *C. difficile,* and may do this more often than others, and this may make it more likely that the infections are reported on death certificates for patients who died at those sites.

4. Different communal establishments provide care for different types of people. We would expect to see higher numbers of *C. difficile* deaths in places treating more seriously ill or very old patients.

Table 4 **Number of deaths mentioning *Clostridium difficile* by place of death, compared to all causes of death, 2003–07**

England and Wales

	All cause number of deaths	Number of *C. difficile* deaths	Percentage of all *C. difficile deaths*	*C. difficile* as a percentage of all deaths in the establishment
England and Wales[1]				
Own home	479,370	212	*0.9*	*0.04*
NHS general hospital	1,448,345	20,758	*91.8*	*1.43*
Non-NHS general hospital	11,819	33	*0.1*	*0.28*
Hospice	119,842	99	*0.4*	*0.08*
NHS nursing home	12,635	168	*0.7*	*1.33*
Non-NHS nursing home	231,483	543	*2.4*	*0.23*
Private residential home	137,426	244	*1.1*	*0.18*
Local Authority residential home	34,112	67	*0.3*	*0.20*
Other places	98,013	479	*2.1*	*0.49*
Total	2,573,045	22,603	*100.0*	*0.88*
England				
Own home	447,844	206	*0.9*	*0.05*
NHS general hospital	1,348,058	19,954	*91.8*	*1.48*
Non-NHS general hospital	11,038	31	*0.1*	*0.28*
Hospice	115,664	97	*0.4*	*0.08*
NHS nursing home	12,517	167	*0.8*	*1.33*
Non-NHS nursing home	218,562	529	*2.4*	*0.24*
Private residential home	131,165	239	*1.1*	*0.18*
Local Authority residential home	32,228	66	*0.3*	*0.20*
Other places	88,493	442	*2.0*	*0.50*
Total	2,405,569	21,731	*100.0*	*0.90*
Wales				
Own home	31,436	6	*0.7*	*0.02*
NHS general hospital	96,561	779	*92.3*	*0.81*
Non-NHS general hospital	282	0	*0.0*	*0.00*
Hospice	4,031	2	*0.2*	*0.05*
NHS nursing home	113	1	*0.1*	*0.88*
Non-NHS nursing home	12,728	14	*1.7*	*0.11*
Private residential home	6,228	5	*0.6*	*0.08*
Local Authority residential home	1,882	1	*0.1*	*0.05*
Other places	8,259	36	*4.3*	*0.44*
Total	161,520	844	*100.0*	*0.52*

1 England and Wales data include non-residents who died in England and Wales. Data for England and Wales separately exclude deaths of non-residents.

5. The registrar of deaths is required to record the address where the death occurred. This information is taken from the family member or other informant who registers the death. The name, street address and postcode of the building or other place are recorded in the register. These addresses are mapped to a list of communal establishments built up from the local knowledge of registrars which indicates the type of establishment, for example nursing homes, residential homes, prisons, and hospitals. The communal establishments from this list cannot easily be matched to lists of NHS trusts or hospitals produced by the Department of Health and others. It is, by its nature, a historical and changing list that relies on local updating.

6. ONS does not have any direct measure of the numbers of patients at risk, for example, data on the numbers of patients treated, or the total number of in-patient days, in each communal establishment. We have reported the numbers of death certificates mentioning *C. difficile* as a proportion of the total number of registered deaths that occurred in each establishment because this is the only available denominator. Higher numbers of deaths would be expected in larger establishments. For a given size of establishment, larger numbers of total deaths may be because the establishment treats more seriously ill and/or elderly patients, the result of standards of care, or a combination of factors. This makes it difficult to interpret variations in the proportion of deaths with *C. difficile* mentioned. To aid interpretation, we present both all deaths, deaths involving *C. difficile*, and the proportion of all deaths involving *C. difficile*.

The 216 communal establishments which had 2,500 or more deaths from all causes between 2003 and 2007 are listed in Table 5. In these establishments, there were a total of 19,123 deaths involving *C. difficile* in 2003 to 2007. This represents 84 per cent of all deaths involving *C. difficile* over this period. For the selected establishments included in this report, deaths involving *C. difficile* accounted for 1.47 per cent of all deaths in 2003 to 2007.

Key findings

- Deaths involving *C. difficile* increased from 1,804 in 2003 to 8,324 in 2007
- The number of deaths involving *C. difficile* increased by 28.5 per cent between 2006 and 2007
- Age-standardised rates for deaths involving *C. difficile* increased by 4.5 times among males, and by 4.2 times among females between 2003 and 2007. Between 2006 and 2007, rates increased by 29.8 and 25.4 per cent respectively for males and females
- Death rates involving *C. difficile* were higher in older age groups
- Between 2003 and 2007, *C. difficile* was involved in 14.3 per 1,000 deaths in NHS general hospitals

References

1. Government Actuary's Department Population Projections, accessed 8 July 2008, available at: www.gad.gov.uk/Demography_Data/Population/
2. Office for National Statistics (2008) 'Report: Deaths involving MRSA and *Clostridium difficile* by communal establishment, England and Wales, 2001–06', *Health Statistics Quarterly* **38**, 74–84. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
3. Knoop F C, Owens M and Crocker I C (1993) '*Clostridium difficile*: clinical disease and diagnosis', *Clinical Microbiology Reviews* **6**, 251.
4. Bartlett J G (1990) '*Clostridium difficile*: clinical considerations', *Reviews in Infectious Diseases* **12** Suppl 2, S243–51.
5. Hall I C and O'Toole E (1935) 'Intestinal flora in new-born infants: with a description of a new pathogenic anaerobe, *Bacillus difficilus*', *American Journal of Diseases in Childhood* **49**, 390–402.
6. Bartlett J G, Chang T W, Gurwith M *et al* (1978) 'Antibiotic-associated *Pseudomembranous colitis* due to toxin producing clostridia', *New England Journal of Medicine* **298**, 531–34.
7. George R H, Symonds J M, Dimock F *et al* (1978) 'Identification of *Clostridium difficile* as a cause of *Pseudomembranous colitis*', *British Medical Journal* **1**, 695.

8. George W L, Sutter V L, Goldstein E C J *et al* (1978) 'Aetiology of antimicrobial-agent-associated colitis', *Lancet* **1**, 802–03.
9. Larson H E, Price A B, Honour P *et al* (1978) '*Clostridium difficile* and the aetiology of *pseudomembranous colitis*', Lancet **1**, 1063–66.
10. Health Protection Agency, *Clostridium difficile*, accessed 16 July 2008, available at: www.hpa.org.uk/infections/topics_az/clostridium_difficile/default.htm
11. Department of Health, *A simple guide to Clostridium difficile*, accessed 16 July 2008, available at: www.dh.gov.uk/assetRoot/04/11/58/84/04115884.pdf
12. Department of Health (2003) *Winning Ways: Working together to reduce Healthcare Associated Infection in England. Report from the Chief Medical Officer*, Department of Health: London.
13. Health Protection Agency (2003) *National Clostridium difficile Standards Group Report to the Department of Health*, accessed 16 July 2008, available at: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4067649
14. Health Protection Agency, *Mandatory C. difficile associated disease (CDAD) surveillance scheme*, accessed 16 July 2008, available at: www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733750761?p=1179745282408
15. Health Protection Agency (2007) *Mandatory Surveillance of Healthcare Associated Infection Report 2007*, accessed 16 July 2008, available at: www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1196942166935?p=1158945066450
16. Office for National Statistics, *Guidance for doctors certifying cause of death in England and Wales from the Office for National Statistics Death Certification Advisory Group*. Published on the General Register Office website, April 2005, accessed on 6 August: www.gro.gov.uk/medcert
17. Department of Health (2005), Chief Medical Officer update, Issue 42, Summer 2005, Department of Health: London.
18. Office for National Statistics (2005), *Mortality Statistics: Childhood Infant and Perinatal*, Series DH3 No. 36. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305
19. Office for National Statistics (2008*) Briefing Note: ONS policy on protecting confidentiality within birth and death statistics (Revised 2008).* Available on the National Statistics website at: www.statistics.gov.uk/downloads/theme_health/ConfidentialityBirth&Death.pdf
20. Office for National Statistics (2008), Deaths involving *Clostridium difficile* by communal establishment. Available on the National Statistics website at: www.statistics.gov.uk/downloads/theme_health/C_Diff_establishments_2001_06.xls

Table 5 **Deaths involving *Clostridium difficile* by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003-07	*C. difficile* deaths 2003-07	% total deaths involving *C. difficile*
Addenbrookes Hospital, Cambridge	CB2 0QQ	7,992	135	*1.69*
Airedale General Hospital, Steeton Keighley	BD206TD	4,034	55	*1.36*
Alexandra Hospital, Redditch	B98 7UB	4,237	73	*1.72*
Arrowe Park Hospital, Birkenhead	CH495PE	9,940	115	*1.16*
Barnet General Hospital, Barnet	EN5 3DJ	6,674	121	*1.81*
Barnsley District General Hospital	S75 2EP	5,913	44	*0.74*
Basildon Hospital	SS165NL	9,242	134	*1.45*
Bassetlaw District General Hospital, Worksop	S81 0BD	3,325	8	*0.24*
Bedford Hospital (South Wing)	MK429DJ	5,315	149	*2.80*
Birmingham Heartlands Hospital, Bordesley Green East	B9 5SS	10,070	227	*2.25*
Bristol Royal Infirmary	BS2 8HW	6,238	203	*3.25*
Broomfield Hospital	CM1 7ET	7,061	65	*0.92*
Burnley General Hospital	BB102PQ	5,917	45	*0.76*
Castle Hill Hospital, Cottingham	HU165JQ	4,060	38	*0.94*
Central Middlesex Hospital Park Royal, London	NW107NS	2,642	19	*0.72*
Charing Cross Hospital, Fulham	W6 8RF	4,350	66	*1.52*
Chase Farm Hospital, Enfield	EN2 8JL	5,903	59	*1.00*
Chelsea & Westminster Hospital, London	SW109NH	3,045	41	*1.35*
Chorley and South Ribble District Hospital, Chorley	PR7 1PP	3,517	15	*0.43*
City General Hospital, Stoke on Trent	ST4 6QG	10,733	193	*1.80*
City Hospital, Nottingham	NG5 1PB	9,126	127	*1.39*
City Hospital, Winson Green	B18 7QH	5,972	106	*1.77*
Colchester General Hospital	CO4 5JL	8,980	126	*1.40*
Conquest Hospital, St Leonards-on-Sea	TN377RD	5,781	98	*1.70*
Countess of Chester Hospital, Chester	CH2 1UL	6,124	76	*1.24*
County Hospital, Hereford	HR1 2ER	3,847	117	*3.04*
County Hospital, Lincoln	LN2 5QY	7,139	64	*0.90*
Cumberland Infirmary, Carlisle	CA2 7HY	4,469	52	*1.16*
Darent Valley Hospital, Dartford	DA2 8AA	5,899	42	*0.71*
Derby City General Hospital	DE223NE	3,522	89	*2.53*
Derbyshire Royal Infirmary, Derby	DE1 2QY	8,453	138	*1.63*
Derriford Hospital, Plymouth	PL6 8DH	9,666	38	*0.39*
Dewsbury Health Care NHS Trust Dewsbury & Dis. Hosp.	WF134HS	4,465	38	*0.85*
Diana Princess Of Wales Hospital, Grimsby	DN332BA	5,081	17	*0.33*
District General Hospital, Southport	PR8 6PN	4,850	24	*0.49*
District Hospital, Peterborough	PE3 6DA	5,427	82	*1.51*
Dorset County Hospital, Dorchester	DT1 1TP	4,479	41	*0.92*
Ealing Hospital, Southall	UB1 3HW	4,183	61	*1.46*
East Surrey Hospital, Redhill	RH1 5RH	6,593	57	*0.86*
Eastbourne District General Hospital, Eastbourne	BN212UD	6,669	43	*0.64*
Epsom General Hospital	KT187EG	4,397	48	*1.09*
Fairfield General Hospital, Bury	BL9 7TD	5,084	31	*0.61*
Freeman Hospital, Newcastle	NE7 7DN	4,445	56	*1.26*
Frenchay Hospital	BS161LE	6,862	156	*2.27*
Frimley Park Hospital, Frimley	GU167UJ	6,594	185	*2.81*
Furness General Hospital, Barrow-in-Furness	LA144LF	3,331	49	*1.47*
General Hospital, Bishop Auckland	DL146AD	2,919	31	*1.06*
General Hospital, Eaglestone Milton Keynes	MK6 5LD	4,708	139	*2.95*
General Hospital, Kettering	NN168UZ	6,956	273	*3.92*
General Hospital, Northampton	NN1 5BD	6,789	180	*2.65*
General Hospital, Southampton	SO166YD	10,836	213	*1.97*
General Hospital, Uphill Weston super Mare	BS234TQ	4,327	124	*2.87*
General Infirmary, Leeds	LS1 3EX	8,691	140	*1.61*
George Eliot Hospital, Nuneaton	CV107DJ	6,473	299	*4.62*
Glenfield Hospital Trust, Leicester	LE3 9QP	4,154	62	*1.49*
Gloucestershire Royal Hospital	GL1 3NN	6,882	145	*2.11*
Good Hope Hospital, Sutton Coldfield	B75 7RR	7,925	158	*1.99*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving *Clostridium difficile* by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003-07	*C. difficile* deaths 2003-07	% total deaths involving *C. difficile*
Hammersmith Hospital	W12 0HS	2,812	28	*1.00*
Harrogate District Hospital	HG2 7SX	3,855	22	*0.57*
Hemel Hempstead General Hospital, Allandale	HP2 4AD	4,819	119	*2.47*
Hillingdon Hospital, Hillingdon	UB8 3NN	5,218	99	*1.90*
Hinchingbrooke Hospital, Huntingdon	PE296NT	3,435	57	*1.66*
Homerton University Hospital, Hackney	E9 6SR	3,295	68	*2.06*
Horton General Hospital, Banbury	OX169AL	2,754	35	*1.27*
Hull Royal Infirmary	HU3 2JZ	9,540	56	*0.59*
Ipswich Hospital NHS Trust	IP4 5PD	8,344	173	*2.07*
James Cook University Hospital, Middlesbrough	TS4 3BW	8,870	31	*0.35*
James Paget Hospital, Gorleston	NR316LA	6,176	74	*1.20*
John Radcliffe Oxford Radcliffe Hospital, Oxford	OX3 9DU	7,730	156	*2.02*
Kent & Canterbury Hospital, Canterbury	CT1 3NG	5,388	39	*0.72*
Kent & Sussex Hospital, Tunbridge Wells	TN4 8AT	3,769	60	*1.59*
King George Hospital, Goodmayes Ilford	IG3 8YB	5,904	118	*2.00*
King's College Hospital, Denmark Hill	SE5 9RS	6,990	68	*0.97*
Kings Mill Hospital, Sutton-in-Ashfield	NG174JL	6,970	69	*0.99*
Kingston Hospital, Kingston	KT2 7QB	7,171	115	*1.60*
Leicester General Hospital	LE5 4PW	5,309	194	*3.65*
Leicester Royal Infirmary	LE1 5WW	11,567	268	*2.32*
Leighton Hospital, Crewe	CW1 4QJ	6,511	84	*1.29*
Lister Hospital, Stevenage	SG1 4AB	5,958	137	*2.30*
Llandough Hospital, Penarth	CF642XX	3,718	42	*1.13*
Luton and Dunstable Hospital, Luton	LU4 0DZ	7,248	136	*1.88*
Macclesfield District General Hospital	SK103BL	4,071	75	*1.84*
Maelor Hospital, Wrexham	LL137TD	5,767	47	*0.81*
Maidstone Hospital	ME169QQ	4,995	142	*2.84*
Manor Hospital, Walsall	WS2 9PS	7,345	147	*2.00*
Mayday Hospital, Croydon	CR7 7YE	7,155	91	*1.27*
Medway Maritime Hospital, Gillingham	ME7 5NY	7,994	63	*0.79*
Memorial Hospital, Darlington	DL3 6HX	3,952	21	*0.53*
Morriston Hospital, Swansea	SA6 6NL	6,030	55	*0.91*
Musgrove Park Hospital, Taunton	TA1 5DA	6,241	156	*2.50*
Nevill Hall Hospital, Abergavenny	NP7 7EG	4,269	27	*0.63*
New Cross Hospital, Wolverhampton	WV100QP	10,133	170	*1.68*
Newcastle General Hospital, Newcastle upon Tyne	NE4 6BE	3,155	20	*0.63*
Newham University Hospital, Plaistow	E13 8SL	3,742	83	*2.22*
Norfolk and Norwich University Hospital, Colney	NR4 7UZ	12,124	182	*1.50*
North Cheshire Hospitals NHS Trust, Warrington	WA5 1QG	6,316	134	*2.12*
North Devon District Hospital, Barnstaple	EX314JB	3,452	66	*1.91*
North Manchester General Hospital, Crumpsall Manchester	M8 5RB	6,845	23	*0.34*
North Middlesex Hospital, Edmonton	N18 1QX	5,317	95	*1.79*
North Stafford Royal Infirmary, Hartshill	ST4 7LN	4,055	30	*0.74*
North Tyneside General Hospital, North Shields	NE298NH	5,557	153	*2.75*
Northern General Hospital, Sheffield	S5 7AU	11,219	142	*1.27*
Northwick Park Hospital, Harrow	HA1 3UJ	6,852	91	*1.33*
Oldchurch Hospital, Romford	RM7 0BE	7,365	117	*1.59*
Pilgrim Hospital (District Hospital), Boston	PE219QS	6,324	43	*0.68*
Pinderfields Hospital, Wakefield	WF1 4DG	5,530	65	*1.18*
Poole Hospital	BH152JB	6,674	67	*1.00*
Prince Charles Hospital, Merthyr Tydfil	CF479DT	4,560	26	*0.57*
Prince Philip Hospital, Dafen Llanelli	SA148QF	2,775	12	*0.43*
Princess Alexandra Hospital, Harlow	CM201QX	5,892	84	*1.43*
Princess of Wales Hospital, Bridgend	CF311RQ	4,926	87	*1.77*
Princess Royal Hospital, Telford	TF1 6TF	4,668	45	*0.96*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving *Clostridium difficile* by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003-07	*C. difficile* deaths 2003-07	% total deaths involving *C. difficile*
Princess Royal University Hospital, Farnborough	BR6 8ND	5,788	79	*1.36*
Queen Alexandra Hospital, Cosham Portsmouth	PO6 3LY	10,095	89	*0.88*
Queen Elizabeth Hospital, Edgbaston	B15 2TH	3,729	57	*1.53*
Queen Elizabeth Hospital, Gateshead	NE9 6SX	5,983	46	*0.77*
Queen Elizabeth Hospital, King's Lynn	PE304ET	6,688	149	*2.23*
Queen Elizabeth Hospital, Woolwich	SE184QH	6,197	102	*1.65*
Queen Elizabeth II Hospital, Welwyn Garden City	AL7 4HQ	4,208	104	*2.47*
Queen Elizabeth The Queen Mother Hospital, Margate	CT9 4AN	6,358	81	*1.27*
Queen Mary's Hospital, Sidcup	DA146LT	5,466	68	*1.24*
Queens Hospital, Burton upon Trent	DE130RB	5,814	186	*3.20*
Queen's Medical Centre, Nottingham	NG7 2UH	11,439	173	*1.51*
Rotherham District General Hospital, Rotherham	S60 2UD	7,065	28	*0.40*
Royal Albert Edward Infirmary, Wigan	WN1 2NN	7,293	73	*1.00*
Royal Berkshire Hospital, Reading	RG1 5AN	7,336	83	*1.13*
Royal Blackburn Hospital	BB2 3HH	4,077	36	*0.88*
Royal Bournemouth Hospital	BH7 7DW	8,169	39	*0.48*
Royal Cornwall Hospital, Truro	TR1 3LJ	7,814	59	*0.76*
Royal Devon and Exeter Hospital Wonford, Exeter	EX2 5DW	6,818	101	*1.48*
Royal Free Hospital, Camden	NW3 2QG	5,606	52	*0.93*
Royal Glamorgan Hospital, Llantrisant	CF728XR	4,566	54	*1.18*
Royal Gwent Hospital, Newport	NP202UB	8,051	76	*0.94*
Royal Hallamshire Hospital, Sheffield	S10 2JF	4,716	54	*1.15*
Royal Hampshire County Hospital, Winchester	SO225DG	4,621	71	*1.54*
Royal Hospital, Calow Chesterfield	S44 5BL	7,498	149	*1.99*
Royal Infirmary, Bradford	BD9 6RJ	6,201	29	*0.47*
Royal Infirmary, Lancaster	LA1 4RP	4,688	34	*0.73*
Royal Infirmary, Lindley Huddersfield	HD3 3EA	5,438	31	*0.57*
Royal Infirmary, Manchester	M13 9WL	6,665	68	*1.02*
Royal Infirmary, Doncaster	DN2 5LT	7,711	28	*0.36*
Royal Liverpool University Hospital	L7 8XP	8,573	88	*1.03*
Royal London Hospital, Whitechapel	E1 1BB	4,642	73	*1.57*
Royal Preston Hospital	PR2 9HT	6,788	85	*1.25*
Royal Shrewsbury Hospital	SY3 8XQ	5,544	32	*0.58*
Royal Surrey County Hospital, Guildford	GU2 7XX	5,539	100	*1.81*
Royal Sussex County Hospital, Brighton	BN2 5BE	7,227	143	*1.98*
Royal United Hospital, Bath	BA1 3QE	8,524	323	*3.79*
Royal Victoria Infirmary, Newcastle upon Tyne	NE1 4LP	4,925	67	*1.36*
Russells Hall Hospital, Dudley	DY1 2HQ	9,056	185	*2.04*
Salford Royal University Teaching Hospital	M6 8HD	7,482	72	*0.96*
Salisbury District Hospital	SP2 8BJ	5,044	59	*1.17*
Sandwell General Hospital, Lyndon West Bromwich	B71 4HJ	6,863	92	*1.34*
Scarborough Hospital	YO126QJ	4,011	6	*0.15*
Scunthorpe General Hospital	DN157BH	4,707	58	*1.23*
Selly Oak Hospital	B29 6JD	7,296	184	*2.52*
Singleton Hospital, Sketty Swansea	SA2 8QA	4,501	28	*0.62*
Solihull Hospital	B91 2JL	3,361	62	*1.84*
South Tyneside District Hospital, South Shields	NE340PL	4,580	78	*1.70*
Southend Hospital, Southend-on-Sea	SS0 0RY	10,457	109	*1.04*
Southmead Hospital, Bristol	BS105NB	4,549	180	*3.96*
St Christophers Hospice, Sydenham	SE266DZ	2,851	4	*0.14*
St Georges Hospital, Tooting	SW170QT	7,210	148	*2.05*
St Helier Hospital, Carshalton	SM5 1AA	6,028	108	*1.79*
St James University Hospital, Burmantofts Leeds	LS9 7TF	7,945	78	*0.98*
St Marys Hospital, Newport	PO305TG	4,099	41	*1.00*
St Marys Hospital, Portsmouth	PO3 6AD	3,367	48	*1.43*
St Marys Hospital, Westminster	W2 1NY	3,918	79	*2.02*
St Peters Hospital, Ottershaw Chertsey	KT160PZ	6,055	159	*2.63*
St Richards Hospital, Chichester	PO196SE	5,527	101	*1.83*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Table 5 cont. **Deaths involving *Clostridium difficile* by individual communal establishment, 2003–07[1]**

England and Wales

Name	Postcode	Total deaths 2003-07	*C. difficile* deaths 2003-07	% total deaths involving *C. difficile*
St Thomas's Hospital, Lambeth	SE1 7EH	5,522	47	*0.85*
Stafford Hospital	ST163SA	5,387	118	*2.19*
Stepping Hill Hospital, Stockport	SK2 7JE	7,332	121	*1.65*
Stoke Mandeville Hospital, Aylesbury	HP218AL	3,661	125	*3.41*
Sunderland Royal Hospital	SR4 7TP	9,826	187	*1.90*
Tameside General Hospital, Ashton under Lyne	OL6 9RW	7,341	38	*0.52*
The Calderdale Royal Hospital, Salterhebble Halifax	HX3 0PW	4,823	22	*0.46*
The General Hospital, Cheltenham	GL537AN	5,192	134	*2.58*
The General Infirmary, Pontefract	WF8 1PL	4,181	30	*0.72*
The Great Western Hospital, Swindon	SN3 1LU	6,543	138	*2.11*
The Infirmary, Rochdale	OL120NB	3,756	16	*0.43*
The North Hampshire Hospital, Basingstoke	RG249NA	3,737	47	*1.26*
The Princess Royal Hospital, Haywards Heath	RH164EX	2,854	37	*1.30*
The Royal Bolton Hospital, Farnworth	BL4 0JR	10,165	85	*0.84*
The Royal Oldham Hospital, Oldham	OL1 2JH	6,991	37	*0.53*
Torbay Hospital, Torquay	TQ2 7AA	6,402	63	*0.98*
Trafford General Hospital, Davyhulme Manchester	M41 5SL	3,432	50	*1.46*
University Hospital Aintree, Liverpool	L9 7AL	9,797	93	*0.95*
University Hospital Lewisham	SE136LH	6,115	51	*0.83*
University Hospital of Hartlepool, Cleveland	TS249AH	3,684	27	*0.73*
University Hospital of North Durham, Durham City	DH1 5TW	5,710	51	*0.89*
University Hospital of North Tees, Stockton on Tees	TS198PE	5,256	38	*0.72*
University Hospital of Wales, Cardiff	CF144XW	8,685	81	*0.93*
University Hospital, Walsgrave, Coventry (including Walsgrave Hospital)	CV2 2DX	11,296	321	*2.84*
Victoria Hospital, Blackpool	FY3 8NR	9,898	108	*1.09*
Wansbeck General Hospital, Ashington Northumberland	NE639JJ	5,429	59	*1.09*
Warwick Hospital	CV345BW	5,081	163	*3.21*
Watford General Hospital, Watford	WD180HB	4,967	142	*2.86*
West Cumberland Hospital, Hensingham Whitehaven	CA288JG	3,218	14	*0.44*
West Middlesex Hospital, Isleworth	TW7 6AF	4,765	151	*3.17*
West Suffolk Hospital, Bury St Edmunds	IP332QZ	5,596	87	*1.55*
West Wales General Hospital, Carmarthen	SA312AF	3,413	23	*0.67*
Wexham Park Hospital, Wexham Slough	SL2 4HL	5,694	79	*1.39*
Whipps Cross University Hospital, Leytonstone	E11 1NR	8,656	180	*2.08*
Whiston Hospital, Whiston	L35 5DR	8,502	148	*1.74*
Whittington Hospital, Islington	N19 3UA	3,691	53	*1.44*
William Harvey Hospital, Ashford	TN240LZ	6,120	66	*1.08*
Withybush General Hospital, Haverfordwest	SA612PZ	3,195	22	*0.69*
Worcestershire Royal Hospital, Worcester	WR5 1DD	7,995	153	*1.91*
Worthing Hospital	BN112DH	6,961	96	*1.38*
Wycombe General Hospital, High Wycombe	HP112TT	4,198	48	*1.14*
Wythenshawe Hospital, Manchester	M23 9LT	7,693	71	*0.92*
Yeovil District Hospital, Higher Kingston Yeovil	BA214AT	3,848	115	*2.99*
York Hospital	YO318HE	7,003	38	*0.54*
Ysbyty Glan Clwyd, Bodelwyddan	LL185UJ	5,966	10	*0.17*
Ysbyty Gwynedd, Penrhosgarnedd Bangor	LL572PW	4,817	14	*0.29*
Listed establishments		1,302,118	19,123	*1.47*
Other establishments		738,786	3,225	*0.44*
Own home		479,370	211	*0.04*
Elsewhere		52,771	28	*0.05*
Totals		2,573,045	22,587	*0.88*

1 Institutions with at least 2,500 deaths from all causes in 2003–07.

Report:

Unexplained deaths in infancy, 2006

This report on unexplained infant deaths in England and Wales includes both sudden infant deaths and deaths for which the cause remained unknown or unascertained after a full investigation. The report includes analysis of all unexplained deaths and those certified as sudden infant deaths from 2002 to 2006. Figures for 2006 are provisional.

There is some evidence to suggest that the terms sudden infant deaths and deaths for which the cause remained unknown or unascertained are used interchangeably by coroners certifying these deaths.[1] Research has also shown that the characteristics of babies dying of these two causes are very similar.[2] Based on this evidence it is appropriate to include both groups in any analysis of unexplained infant deaths.

There were 281 unexplained infant deaths in England and Wales in 2006, a 14 per cent decrease from the 325 deaths recorded in 2005. The rate however fell by 16 per cent during this period from 0.50 to 0.42 deaths per 1,000 live births. Between 2002 and 2005 the unexplained infant death rate was fairly constant.

Of the 281 unexplained infant deaths in 2006, 184 were sudden infant deaths and 97 were deaths of unknown cause. Based on these provisional figures for 2006, the rates for both sudden infant deaths and unascertained deaths have decreased compared to 2005. The rate for sudden infant deaths has decreased by 23 per cent from 0.35 per 1,000 live births to 0.27 per 1,000 live births and the rate for deaths of unknown or unascertained cause decreased by 13 per cent from 0.16 to 0.14 per 1,000 live births. The downward trend in unascertained deaths since 2003 is in line with the recommendation made by Baroness Kennedy to stop using the term 'unascertained'.[3]

The majority of unexplained deaths are certified by a coroner either with or without an inquest and it takes much longer for these deaths to be registered. In order to publish meaningful, provisional figures for 2006, the number of unexplained deaths registered each month was monitored and we are confident that most deaths have now been registered.

Other key findings

2002 to 2006

- During the period 2002 to 2006, the unexplained infant death rate for boys was over 1.3 times higher than the rate for girls
- Over the same period, 20 per cent of all unexplained infant deaths occurred in the first 27 days of life and 27 per cent of deaths occurred in babies aged between 28 days and less than two months. Overall 65 per cent of all unexplained infant deaths occurred in babies aged less than 3 months
- Between 2002 and 2006, 28 per cent of unexplained infant deaths occurred over the winter period (December–February), whereas 22 per cent occurred over the summer (June–August). January had the highest number of unexplained infant deaths over the whole period with 157 deaths (10 per cent of the total) and August had the lowest with 85 deaths (6 per cent)
- Over the period 2002 to 2006, Wales had the highest unexplained infant death rate (0.67 per 1,000 live births) and the East region the lowest (0.34 per 1,000 live births)

2006

- Seventy-four per cent of all unexplained infant deaths occurred among babies born with a normal birthweight (2,500 grams and over)
- The unexplained infant death rate was highest for babies of mothers aged under 20 at the time of the child's birth (1.27 per 1,000 live births). The rate fell with increasing age of mother although there was a slight increase in rates between the 30–34 and 35 and over age groups
- For babies of mothers born in England and Wales the unexplained infant death rate was 0.48 per 1,000 live births compared to 0.42 per 1,000 live births for all babies. The rate for babies of mothers born outside England and Wales was 0.24 per 1,000 live births
- The unexplained infant death rate was highest for babies born outside marriage where only the mother registered the birth (1.3 per 1,000 live births); this rate was six times the rate for babies born inside marriage (0.21 per 1,000 live births) and nearly three times the rate for babies born outside marriage jointly registered by both parents giving the same address (0.46 per 1,000 live births)
- For babies born within marriage the unexplained infant death rate for babies of mothers with two or more previous births (0.37 per 1,000 live births) was twice the rate of babies of mothers with no previous births (0.17 per 1,000 live births)

- For babies born inside marriage and outside marriage jointly registered by both parents, the unexplained infant death rate in the routine and manual group was over twice that in the managerial and professional group (0.37 per 1,000 live births and 0.15 per 1,000 live births respectively)

Definitions

Sudden infant deaths are coded to ICD–10 code R95 and include those deaths for which there was any mention of 'sudden infant death', 'cot death', 'SIDS', 'crib death', or another similar term anywhere on the death certificate.

Deaths of unascertained cause are coded to ICD–10 code R99 and only cases where there is no mention of any other cause on the death certificate are included in the analysis.

The data

All of the deaths included in this report occurred in 2002 to 2006 and have been linked to their corresponding birth records. Information about parents, which was collected at birth registration, can then be used to enable analysis of the data according to certain risk factors. Data for 2006 have been analysed by these risk factors, and include birthweight (Table 5), mother's age at birth of child (Table 6), mother's country of birth (Table 7), marital status and parity (Table 8), and father's socio-economic status based on his occupation (Table 9).

The statistics given in this report relate to our database as at 20 June 2008. Figures for 2006 are provisional.

References

1. Limerick S R and Bacon C J (2004) 'Terminology used by pathologists in reporting on SIDS', *Journal of Clinical Pathology*, **57**, 309–11.
2. Corbin T (2005) 'Investigation into sudden infant deaths and unascertained deaths in England and Wales 1995–2003', *Health Statistics Quarterly* **27**, 17–25. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
3. The report of a working group convened by The Royal College of Pathologists and The Royal College of Paediatrics and Child Health (2004) *Sudden unexpected deaths in infancy. A multi-agency protocol for care and investigation*. Chair: The Baroness Helena Kennedy QC. Accessed 18 July 2008, available at: www.rcpath.org/resources/pdf/SUDI%20report%20for%20web.pdf

Table 1 **Sudden infant deaths, unascertained deaths and all unexplained infant deaths by sex and age at death, 2002–06**

England and Wales — Numbers and rates

Year	Numbers									Rates[1]								
	Boys			Girls			All babies			Boys			Girls			All babies		
	Neonatal deaths	Post-neonatal deaths	Infant deaths	Neonatal deaths	Post-neonatal deaths	Infant deaths	Neonatal deaths	Post-neonatal deaths	Infant deaths	Neonatal deaths	Post-neonatal deaths	Infant deaths	Neonatal deaths	Post-neonatal deaths	Infant deaths	Neonatal deaths	Post-neonatal deaths	Infant deaths
Sudden infant deaths																		
2002	21	101	122	12	56	68	33	157	190	0.07	0.33	0.40	0.04	0.19	0.23	0.06	0.26	0.32
2003	15	89	104	14	67	81	29	156	185	0.05	0.28	0.33	0.05	0.22	0.27	0.05	0.25	0.30
2004	24	101	125	18	64	82	42	165	207	0.07	0.31	0.38	0.06	0.21	0.26	0.07	0.26	0.32
2005	15	119	134	22	67	89	37	186	223	0.05	0.36	0.41	0.07	0.21	0.28	0.06	0.29	0.35
2006	18	98	116	11	57	68	29	155	184	0.05	0.29	0.34	0.03	0.17	0.21	0.04	0.23	0.27
Unascertained deaths																		
2002	15	50	65	12	31	43	27	81	108	0.05	0.16	0.21	0.04	0.11	0.15	0.05	0.14	0.18
2003	13	54	67	21	42	63	34	96	130	0.04	0.17	0.21	0.07	0.14	0.21	0.05	0.15	0.21
2004	17	47	64	12	34	46	29	81	110	0.05	0.14	0.19	0.04	0.11	0.15	0.05	0.13	0.17
2005	9	43	52	12	38	50	21	81	102	0.03	0.13	0.16	0.04	0.12	0.16	0.03	0.13	0.16
2006	13	42	55	14	28	42	27	70	97	0.04	0.12	0.16	0.04	0.09	0.13	0.04	0.10	0.14
Unexplained infant deaths																		
2002	36	151	187	24	87	111	60	238	298	0.12	0.49	0.61	0.08	0.30	0.38	0.10	0.40	0.50
2003	28	143	171	35	109	144	63	252	315	0.09	0.45	0.54	0.12	0.36	0.48	0.10	0.41	0.51
2004	41	148	189	30	98	128	71	246	317	0.12	0.45	0.58	0.10	0.31	0.41	0.11	0.38	0.50
2005	24	162	186	34	105	139	58	267	325	0.07	0.49	0.56	0.11	0.33	0.44	0.09	0.41	0.50
2006	31	140	171	25	85	110	56	225	281	0.09	0.41	0.50	0.08	0.26	0.34	0.08	0.34	0.42

1 Rates per 1,000 live births.

Table 2 **Sudden infant deaths, unascertained deaths and all unexplained deaths by age at death, 2002–06**

England and Wales — Numbers and percentages

Year	Numbers								Percentages							
	Age at death								Age at death							
	Under 28 days	28 days and over but less than 2 months	2 completed months	3 completed months	4 completed months	5 completed months	Between 6 and 11 completed months	All babies	Under 28 days	28 days and over but less than 2 months	2 completed months	3 completed months	4 completed months	5 completed months	Between 6 and 11 completed months	All babies
Sudden infant deaths																
2002	33	63	28	23	19	10	14	190	17.4	33.2	14.7	12.1	10.0	5.3	7.4	100.0
2003	29	57	30	20	12	10	27	185	15.7	30.8	16.2	10.8	6.5	5.4	14.6	100.0
2004	42	53	38	30	19	10	15	207	20.3	25.6	18.4	14.5	9.2	4.8	7.2	100.0
2005	37	58	47	29	17	11	24	223	16.6	26.0	21.1	13.0	7.6	4.9	10.8	100.0
2006	29	48	36	32	14	9	16	184	15.8	26.1	19.6	17.4	7.6	4.9	8.7	100.0
Unascertained deaths																
2002	27	29	19	10	4	5	14	108	25.0	26.9	17.6	9.3	3.7	4.6	13.0	100.0
2003	34	26	32	16	6	3	13	130	26.2	20.0	24.6	12.3	4.6	2.3	10.0	100.0
2004	29	27	18	10	9	4	13	110	26.4	24.5	16.4	9.1	8.2	3.6	11.8	100.0
2005	21	18	24	13	7	5	14	102	20.6	17.6	23.5	12.7	6.9	4.9	13.7	100.0
2006	27	32	14	8	2	6	8	97	27.8	33.0	14.4	8.2	2.1	6.2	8.2	100.0
Unexplained infant deaths																
2002	60	92	47	33	23	15	28	298	20.1	30.9	15.8	11.1	7.7	5.0	9.4	100.0
2003	63	83	62	36	18	13	40	315	20.0	26.3	19.7	11.4	5.7	4.1	12.7	100.0
2004	71	80	56	40	28	14	28	317	22.4	25.2	17.7	12.6	8.8	4.4	8.8	100.0
2005	58	76	71	42	24	16	38	325	17.8	23.4	21.8	12.9	7.4	4.9	11.7	100.0
2006	56	80	50	40	16	15	24	281	19.9	28.5	17.8	14.2	5.7	5.3	8.5	100.0

Table 3 **Sudden infant deaths, unascertained deaths and all unexplained infant deaths by month of occurrence, 2002–06**

England and Wales — Numbers

Year	Month												
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Sudden infant deaths													
2002	20	16	16	13	12	20	13	15	15	13	21	16	190
2003	30	15	16	14	15	14	10	12	12	16	14	17	185
2004	15	19	23	15	16	15	19	12	19	13	24	17	207
2005	20	19	20	16	27	8	17	12	14	25	25	20	223
2006	12	13	10	12	14	19	19	9	25	16	13	22	184
Unascertained deaths													
2002	12	12	12	2	5	6	13	5	10	9	8	14	108
2003	10	8	11	16	9	12	16	7	9	10	7	15	130
2004	15	12	7	12	10	7	10	3	5	9	7	13	110
2005	11	7	13	9	6	4	11	4	11	10	9	7	102
2006	12	10	5	9	5	9	8	6	10	9	6	8	97
Unexplained infant deaths													
2002	32	28	28	15	17	26	26	20	25	22	29	30	298
2003	40	23	27	30	24	26	26	19	21	26	21	32	315
2004	30	31	30	27	26	22	29	15	24	22	31	30	317
2005	31	26	33	25	33	12	28	16	25	35	34	27	325
2006	24	23	15	21	19	28	27	15	35	25	19	30	281

Table 4 All unexplained infant deaths by Government Office Region, 2002–06

England and Wales — Numbers and rates

Year	Government Office Region										
	England and Wales	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West	Wales
Numbers											
2002	298	9	39	29	19	29	26	45	53	29	20
2003	315	17	55	34	26	46	22	45	32	21	17
2004	317	20	64	28	20	28	20	42	46	20	29
2005	325	20	62	23	23	40	22	57	35	28	15
2006	281	18	44	30	23	21	18	43	31	27	26
Rates[1]											
2002	0.50	0.34	0.52	0.52	0.42	0.48	0.43	0.43	0.60	0.59	0.66
2003	0.51	0.63	0.71	0.59	0.55	0.72	0.35	0.41	0.35	0.41	0.54
2004	0.50	0.72	0.79	0.47	0.41	0.42	0.31	0.37	0.49	0.38	0.90
2005	0.50	0.71	0.76	0.38	0.47	0.61	0.34	0.49	0.37	0.53	0.46
2006	0.42	0.62	0.52	0.48	0.45	0.31	0.27	0.36	0.31	0.49	0.77

1 Rates per 1,000 live births.

Table 5 Live births and all unexplained infant deaths by birthweight, 2006

England and Wales — Numbers and percentages

Birthweight (grams)	Numbers				Percentages		
	Births	Deaths					
	Live births	Neonatal	Postneonatal	Infants	Neonatal	Postneonatal	Infant
All	669,526	56	225	281	*19.9*	*80.1*	*100.0*
Under 1,500	8,238	4	11	15	*26.7*	*73.3*	*100.0*
1,500–1,999	10,233	3	12	15	*20.0*	*80.0*	*100.0*
2,000–2,499	31,664	6	35	41	*14.6*	*85.4*	*100.0*
2,500–2,999	112,725	16	67	83	*19.3*	*80.7*	*100.0*
3,000–3,499	37,412	23	59	82	*28.0*	*72.0*	*100.0*
3,500 and over	263,380	3	38	41	*7.3*	*92.7*	*100.0*
Not stated	5,874	1	3	4	*25.0*	*75.0*	*100.0*

Table 6 Live births and all unexplained infant deaths by mother's age, 2006

England and Wales — Numbers and rates

Mother's age	Numbers				Rates[1]		
	Births	Deaths					
	Live births	Neonatal	Postneonatal	Infants	Neonatal	Postneonatal	Infant
All	669,526	56	225	281	0.08	0.34	0.42
Under 20	45,507	9	49	58	0.20	1.08	1.27
20–24	127,830	13	79	92	0.10	0.62	0.72
25–29	172,637	15	47	62	0.09	0.27	0.36
30–34	189,385	8	30	38	0.04	0.16	0.20
35 and over	134,167	11	20	31	0.08	0.15	0.23

1 Rates per 1,000 live births.

Table 7 Live births and all unexplained infant deaths by mother's country of birth, 2006

England and Wales — Numbers and rates

Country of birth	Numbers				Rates[1]		
	Births	Deaths					
	Live births	Neonatal	Postneonatal	Infants	Neonatal	Postneonatal	Infant
All	669,526	56	225	281	0.08	0.34	0.42
England and Wales	512,648	48	196	244	0.09	0.38	0.48
Outside England and Wales	156,878	8	29	37	0.05	0.18	0.24

1 Rates per 1,000 live births.

Table 8 Live births and all unexplained infant deaths by marital status, parity (within marriage) and type of registration, 2006

England and Wales — Numbers and rates

Marital status Parity/type of registration	Numbers				Rates[1]		
	Births	Deaths					
	Live births	Neonatal	Postneonatal	Infants	Neonatal	Postneonatal	Infant
All	669,526	56	225	281	0.08	0.34	0.42
Inside marriage							
All	378,152	17	61	78	0.04	0.16	0.21
0	160,186	9	18	27	0.06	0.11	0.17
1	134,224	5	15	20	0.04	0.11	0.15
2 and over	83,742	3	28	31	0.04	0.33	0.37
Outside marriage							
All	291,374	39	164	203	0.13	0.56	0.70
Joint registration/same address	185,441	20	65	85	0.11	0.35	0.46
Joint registration/different address	60,437	11	48	59	0.18	0.79	0.98
Sole registration	45,496	8	51	59	0.18	1.12	1.30

1 Rates per 1,000 live births.

Table 9 Live births[1] and unexplained infant deaths by NS SEC (based on father's occupation at death registration[2]), 2006

England and Wales — Numbers and rates

NS SEC Three-class version	Numbers				Rates[3]		
	Births	Deaths					
	Live births	Neonatal	Postneonatal	Infants	Neonatal	Postneonatal	Infant
All[4]	624,030	48	174	222	0.08	0.28	0.36
Inside marriage							
All[5]	378,152	17	61	78	0.04	0.16	0.21
Managerial and professional	17,831	7	11	18	0.04	0.06	0.10
Intermediate	7,170	1	13	14	0.01	0.18	0.20
Routine and manual	10,906	7	21	28	0.06	0.19	0.26
Outside marriage joint registration							
All[5]	245,878	31	113	144	0.13	0.46	0.59
Managerial and professional	5,746	3	14	17	0.05	0.24	0.30
Intermediate	4,953	6	11	17	0.12	0.22	0.34
Routine and manual	12,047	15	41	56	0.12	0.34	0.46
Inside marriage and outside marriage joint registration							
All[5]	624,030	48	174	222	0.08	0.28	0.36
Managerial and professional	23,577	10	25	35	0.04	0.11	0.15
Intermediate	12,123	7	24	31	0.06	0.20	0.26
Routine and manual	22,953	22	62	84	0.10	0.27	0.37

1 Figures for live births in NS SEC groups are a 10 per cent sample coded for father's occupation.
2 Information on father's occupation is not collected for births outside marriage if the father does not attend the registration of the baby's birth.
3 Rates per 1,000 live births.
4 Inside marriage and outside marriage/joint registration only, including cases where father's occupation was not stated.
5 Includes cases where father's occupation was not stated.

Report:

Deaths related to drug poisoning in England and Wales, 2003–07

Introduction

This report presents the latest figures from the Office for National Statistics (ONS) database of deaths from drug-related poisoning, for the period 2003 to 2007, and includes new data for 2007. The database contains information on deaths from 1993, and results based on registrations of deaths in each calendar year from 2002 to 2006 were published in a previous report in *Health Statistics Quarterly*.[1] Mortality rates for 2007 have been calculated using the population projections for 2007[2] as estimates are not yet available. These rates are therefore provisional until updated in the next annual report.

The database

The database of deaths related to drug poisoning has been developed to facilitate research into these deaths and to aid the identification of specific substances involved. The database is extracted from the national deaths database for England and Wales. Deaths are included if the underlying cause of death is regarded as resulting from drug-related poisoning, according to the current National Statistics definition.[3] The International Classification of Diseases Tenth Revision (ICD–10) codes used to define these deaths are listed in Box One.

The database covers accidents and suicides involving drug poisoning, as well as poisonings due to drug abuse and drug dependence, but not other adverse effects of drugs. The range of substances it contains is wide, including legal and illegal drugs, prescription drugs and over-the-counter medications. It does not include poisoning with non-medicinal substances such as household, agricultural or industrial chemicals. For each death, the database includes every mention of a substance recorded on the death certificate or mentioned by the coroner. Almost all deaths on the database had a coroner's inquest. The underlying cause of death is recorded in addition to other information about the deceased, as described in Box Two.

Results

Number of deaths from drug-related poisoning by underlying cause

Table 1 gives the total number of deaths registered in each year from 2003 to 2007, presented by their underlying cause. Each death is assigned an underlying cause of death which reflects the verdict of the coroner and the wording on the coroner's certificate. The number of deaths related to drug poisoning for males was 1,914 in 2007, an increase of 7 per cent compared to 2006. The number of female deaths fell to 726 in 2007, a decrease of 8 per cent compared to 2006. This is the lowest recorded annual number since 1993 (the first year held within the database). Among males in the period 2003–07, similar proportions of deaths were due to 'mental and behavioural disorders due to drug use' (36 per cent) and intentional self-poisoning/ poisoning of undetermined intent (33 per cent). Over half of drug-related poisoning deaths among females in this period were intentional self-poisonings and poisonings of undetermined intent (58 per cent).

Number of deaths from drug-related poisoning where selected substances were mentioned on the death certificate

Table 2 gives numbers of deaths where specific substances were mentioned on the death certificate for 2003 to 2007. These figures need to

Box one

ICD-10 Underlying cause code	Description
F11-F16, F18-F19	Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)
X40-X44	Accidental poisoning by drugs, medicaments and biological substances
X60-X64	Intentional self-poisoning by drugs, medicaments and biological substances
Y10-Y14	Poisoning by drugs, medicaments and biological substances, undetermined intent
X85	Assault by drugs, medicaments and biological substances

Table 1 **Numbers of deaths from drug-related poisoning by sex and underlying cause of death, 2003–07**

England and Wales

Underlying cause (ICD-10[1] codes)	Sex	2003	2004	2005	2006	2007	Total number	Percentage of total
All deaths from drug-related poisoning	Males	1,741	1,856	1,887	1,782	1,914	9,180	*100*
	Females	882	931	875	788	726	4,202	*100*
Mental and behavioural disorders due to drug use (excluding alcohol and tobacco) (F11-F16, F18-F19)	Males	642	648	700	639	662	3,291	*35.8*
	Females	134	124	127	100	119	604	*14.4*
Accidental poisoning by drugs, medicaments and biological substances (X40-X44)	Males	440	523	534	598	725	2,820	*30.7*
	Females	209	237	239	245	239	1,169	*27.8*
Intentional self-poisoning by drugs, medicaments and biological substances (X60-X64), and poisoning by drugs, medicaments and biological substances, undetermined intent (Y10-Y14)	Males	657	679	648	540	520	3,044	*33.2*
	Females	538	568	506	439	368	2,419	*57.6*
Assault by drugs, medicaments and biological substances (X85)	Males	2	6	5	5	7	25	*0.3*
	Females	1	2	3	4	0	10	*0.2*

1 International Classification of Diseases, Tenth Revision.

Box two

For each death the database of drug-related poisonings includes:

the underlying cause of death

every mention of a substance recorded by the coroner in the cause of death section or elsewhere on the Coroner's certificate after inquest (Form 99(REV))

an indicator to show if alcohol is mentioned

other information recorded at death registration such as age, sex, marital status, occupation and place of usual residence

be interpreted with some caution for the following reasons:

1. In around 10 per cent of deaths on the database only a general description, such as 'drug overdose', is recorded on the coroner's certificate of death. These deaths do not contribute to the count of specific substances.

2. Where more than one drug is mentioned on the death certificate, it is not always possible to tell which of them was primarily responsible for the death.

3. Some deaths may be counted in more than one category in these tables. For example, if heroin and cannabis are recorded on the death certificate, the death will be recorded once under heroin and once under cannabis. Therefore the numbers in each column cannot be added together to give a total number of deaths.

As heroin (diamorphine) breaks down in the body into morphine, the latter may be detected at post mortem and recorded on the death certificate. Therefore a combined figure for deaths where heroin or morphine was mentioned on the death certificate is included in Table 2. The figure for cocaine in Table 2 includes deaths where cocaine was taken in the form of crack cocaine. It is not possible to separately identify crack cocaine from other forms of cocaine at post mortem.

Other evidence to distinguish the form of cocaine taken is rarely provided on death certificates.

In 2007, almost a third (29 per cent) of drug-related poisoning deaths mentioned more than one drug, or a 'multiple drug overdose' for example, and 31 per cent of deaths contained a mention of alcohol in addition to a drug.

There were 829 deaths involving heroin or morphine in 2007, a 16 per cent rise compared to 2006, but this was a lower number than in 2005. The number of deaths involving methadone rose throughout 2003–07 to 325 in the latest year, an increase of 35 per cent compared to 2006 (and 62 per cent compared to 2003). There were 196 deaths involving cocaine in 2007, continuing the long-term upward trend. This was the highest number of deaths involving cocaine since 1993, when it was mentioned in only 11 deaths on the database.

There were 97 deaths involving amphetamines in 2007, with nearly half of these being accounted for by deaths mentioning ecstasy. A small number of deaths mentioned Gamma-hydroxybutyrate (GHB) or cannabis (9 and 12 respectively).The number of deaths which mentioned benzodiazepines rose to 207 in 2007, an increase of 17 per cent compared to 2006. The biggest impact on this rise was from diazepam, where the number of deaths rose to 123 in 2007, an increase of 38 per cent compared to 2006. Deaths involving zopiclone/zolpidem rose to 51 in 2007 whereas deaths involving barbiturates fell to 6 in 2007. This is the lowest recorded number since 1993.

In 2007, the number of deaths involving antidepressants remained stable although 335 was the lowest recorded annual number of deaths involving antidepressants since 1993. Over the period 2003–07 there was a decrease in deaths involving tricyclic antidepressants. The number of deaths mentioning dothiepin more than halved between 2003 and 2007 from 158 to 71. The pattern, however, was less clear for deaths involving amitriptyline. Deaths mentioning other antidepressants, such as venlafaxine and mirtazapine, were fairly stable from 2003 to 2007. The number of deaths mentioning selective serotonin re-uptake inhibitors (SSRIs) such as fluoxetine, paroxetine and citalopram remained stable at between 76 and 81 for the last three years.

Deaths involving paracetamol and its compounds declined in 2007 to 242, continuing a long-term downward trend since 1997. The number of deaths nearly halved between 2003 and 2007 from 454 to 242. The overall figure for paracetamol includes those deaths where dextropropoxyphene was mentioned alone on the death certificate as, in England and Wales, this substance is very rarely ingested except in combination with paracetamol. The biggest impact on this decline was from deaths involving co-proxamol (paracetamol and dextropropoxyphene compound formulation), where the number fell by 73 per cent between 2003 and 2007, from 264 to 72.The

Table 2 **Numbers of deaths where selected substances were mentioned on the death certificate, 2003–07**

England and Wales

	2003	2004	2005	2006	2007
a) Total mentions					
All deaths from drug-related poisoning	2,623	2,787	2,762	2,570	2,640
Heroin and Morphine	696	751	842	713	829
Methadone	201	219	220	241	325
Cocaine	129	154	176	190	196
All amphetamines	81	80	103	92	97
MDMA/Ecstasy	50	43	58	48	47
Cannabis	11	19	19	17	12
Gamma-hydroxybutyrate (GHB)	6	1	4	7	9
All benzodiazepines	224	233	190	177	207
Temazepam	70	78	45	42	45
Diazepam	121	94	101	89	123
Nitrazepam	5	13	11	8	10
Zopiclone/Zolpidem	40	57	48	39	51
Barbiturates	20	16	14	17	6
All antidepressants	432	469	401	336	335
Tricyclic antidepressants (BNF 4.3.1)	310	313	272	212	203
Dothiepin	158	134	107	74	71
Amitriptyline	125	148	127	108	113
Monoamine-oxidase inhibitors (BNF 4.3.2)	4	3	2	0	1
Selective serotonin re-uptake inhibitors (BNF 4.3.3)	74	105	81	76	80
Other antidepressants (BNF 4.3.4)	56	65	56	46	62
Paracetamol (includes dextropropoxyphene mentioned without paracetamol)[1]	454	517	410	309	242
Paracetamol	395	448	362	287	224
Paracetamol and dextropropoxyphene compound formulation (includes dextropropoxyphene mentioned without paracetamol)[1]	264	287	202	97	72
Paracetamol and codeine compound formulation	30	52	42	42	48
Paracetamol and dihydrocodeine compound formulation	16	15	19	18	9
Paracetamol not from compound formulation	153	174	153	154	116
Codeine not from compound formulation	35	50	44	60	60
Dihydrocodeine not from compound formulation	100	82	106	96	85
Aspirin	19	27	19	22	12
Tramadol	36	43	53	81	79
b) Mentions without other drugs					
All deaths mentioning only one drug	1,743	1,783	1,834	1,778	1,958
Heroin and Morphine	481	491	558	496	587
Methadone	74	105	98	125	167
Cocaine	43	48	53	68	84
All amphetamines	45	45	59	47	56
MDMA/Ecstasy	29	24	33	27	28
Cannabis	1	1	2	2	1
Gamma-hydroxybutyrate (GHB)	2	0	2	4	3
All benzodiazepines	33	43	31	36	36
Temazepam	20	20	16	16	17
Diazepam	5	5	6	8	9
Nitrazepam	3	7	4	2	6
Zopiclone/Zolpidem	8	12	15	10	15
Barbiturates	15	13	11	10	3
All antidepressants	245	246	215	177	159
Tricyclic antidepressants (BNF 4.3.1)	203	186	167	129	108
Dothiepin	113	87	75	56	45
Amitriptyline	71	83	68	55	52
Monoamine-oxidase inhibitors (BNF 4.3.2)	2	1	1	0	1
Selective serotonin re-uptake inhibitors (BNF 4.3.3)	15	30	27	25	24
Other antidepressants (BNF 4.3.4)	22	24	19	18	24
Paracetamol	122	128	129	131	90
Codeine	12	17	19	22	26
Dihydrocodeine	49	31	43	46	33
Aspirin	11	9	6	8	5
Tramadol	23	21	26	42	26

Table 2 cont. Numbers of deaths where selected substances were mentioned on the death certificate, 2003–07

England and Wales

	2003	2004	2005	2006	2007
c) Mentions with alcohol					
All deaths mentioning one or more drugs and alcohol	659	756	744	692	806
Heroin and Morphine	231	250	283	252	303
Methadone	71	70	87	78	125
Cocaine	30	38	37	50	52
All amphetamines	17	18	17	15	29
MDMA/Ecstasy	12	13	14	9	17
Cannabis	6	7	9	9	6
Gamma-hydroxybutyrate (GHB)	4	1	1	2	2
All benzodiazepines	96	93	88	71	82
Temazepam	21	32	20	9	15
Diazepam	55	36	50	41	52
Nitrazepam	0	4	5	0	2
Zopiclone/Zolpidem	11	24	18	13	15
Barbiturates	1	2	1	5	1
All antidepressants	106	129	100	99	114
Tricyclic antidepressants (BNF 4.3.1)	75	75	65	56	58
Dothiepin	42	24	32	16	21
Amitriptyline	29	40	25	32	29
Monoamine-oxidase inhibitors (BNF 4.3.2)	1	0	0	0	0
Selective serotonin re-uptake inhibitors (BNF 4.3.3)	19	40	30	24	35
Other antidepressants (BNF 4.3.4)	16	17	9	18	21
Paracetamol (includes dextropropoxyphene mentioned without paracetamol)[1]	117	135	92	70	58
Paracetamol	99	112	70	64	53
Paracetamol and dextropropoxyphene compound formulation (includes dextropropoxyphene mentioned without paracetamol)[1]	72	96	48	33	21
Paracetamol and codeine compound formulation	8	9	14	7	11
Paracetamol and dihydrocodeine compound formulation	6	3	5	1	1
Paracetamol not from compound formulation	33	28	26	29	26
Codeine not from compound formulation	11	21	14	22	23
Dihydrocodeine not from compound formulation	26	18	31	33	19
Aspirin	1	3	3	2	2
Tramadol	8	9	6	20	12

1 In England and Wales, dextropropoxyphene is very rarely ingested except in combination with paracetamol.

number of deaths involving aspirin fell to 12, the lowest recorded number since 1993.

Deaths related to drug misuse

In 2000 the Advisory Council on the Misuse of Drugs published a report, *Reducing Drug Related Deaths*.[4] In response to this report's recommendations on improving the present system for collecting data on drug-related deaths, a technical working group was set up. This group, consisting of experts across government, the devolved administrations, coroners, toxicologists and drugs agencies, proposed a headline indicator for drug-misuse-related deaths as part of the Government's Action Plan[5] to reduce the number of these deaths. This indicator also takes into account the information needs of the European Monitoring Centre for Drugs and Drug Addiction. The definition of the indicator is 'deaths where the underlying cause is poisoning, drug abuse or drug dependence and where any of the substances controlled under the Misuse of Drugs Act (1971) are involved'. This definition has been adopted across the United Kingdom. The baseline year for monitoring deaths related to drug misuse was set as 1999.

The definition of the headline indicator using ICD–10 is shown in Box Three. The definition using ICD–9 was published in a previous annual report.[1]

Table 3 Numbers of deaths related to drug misuse[1] by sex and country,[2] 2003–07

England and Wales

	2003	2004	2005	2006	2007
England and Wales[2]	1,432	1,495	1,608	1,573	1,604
Males	1,118	1,177	1,260	1,250	1,287
Females	314	318	348	323	317
England	1,313	1,415	1,506	1,469	1,479
Males	1,018	1,110	1,182	1,161	1,194
Females	295	305	324	308	285
Wales	109	68	89	92	110
Males	92	55	70	78	80
Females	17	13	19	14	30
Drug misuse deaths as a percentage of all deaths on the database	55	54	58	61	61

1 As defined by the current headline indicator on drug misuse (Box Three).
2 Figures for England and Wales include deaths to non-residents. The separate figures for England and for Wales include only deaths to residents of those countries.

Box three

Cause of death categories included in the headline indicator of drug misuse deaths (the relevant codes from ICD-10 are given in brackets):

a) deaths where the underlying cause of death has been coded to the following categories of mental and behavioural disorders due to psychoactive substance use (excluding alcohol, tobacco and volatile solvents):

(i) opioids (F11)
(ii) cannabinoids (F12)
(iii) sedatives or hypnotics (F13)
(iv) cocaine (F14)
(v) other stimulants, including caffeine (F15)
(vi) hallucinogens (F16) and
(vii) multiple drug use and use of other psychoactive substances (F19)

b) deaths coded to the following categories **and** where a drug controlled under the Misuse of Drugs Act 1971 was mentioned on the death record:

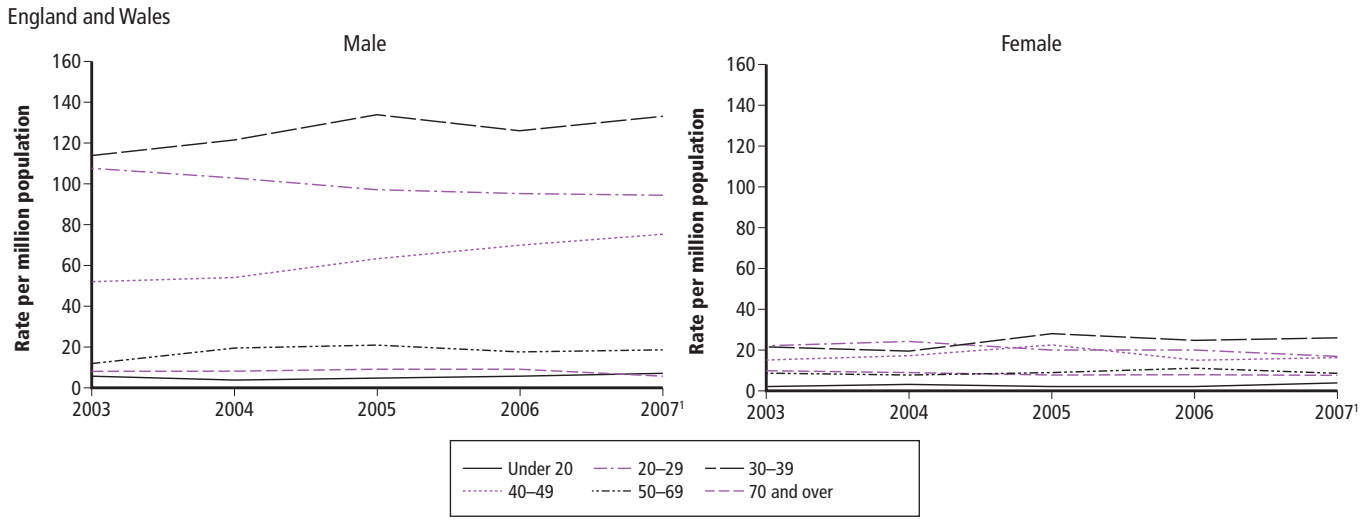
(i) accidental poisoning by drugs, medicaments and biological substances (X40-X44)
(ii) intentional self-poisoning by drugs, medicaments and biological substances (X60-X64)
(iii) poisoning by drugs, medicaments and biological substances, undetermined intent (Y10-Y14)
(iv) assault by drugs, medicaments and biological substances (X85) and
(v) mental and behavioural disorders due to use of volatile solvents (F18)

Notes

1. Deaths coded to opiate abuse which resulted from the injection of contaminated heroin have been **included** in the indicator. This differs from the approach taken in Scotland, where these deaths have been **excluded**. This is because the General Register Office for Scotland (GROS) is able to identify deaths which occurred as a result of the use of contaminated heroin, whereas in England and Wales these deaths cannot be readily identified. In practice, in England and Wales they will only be included where the drug was mentioned on the death record and the death was coded to one of the ICD codes on the ONS database of drug-related poisonings and not to an infection code.
2. Specific rules were adopted for dealing with compound analgesics which contain relatively small quantities of drugs listed under the Misuse of Drugs Act, the major ones being dextropropoxyphene, dihydrocodeine and codeine. Where these drugs are mentioned on a death record, they have been excluded if they are part of a compound analgesic (such as *co-proxamol*, *co-dydramol* or *co-codamol*) or cold remedy.

   Dextropropoxyphene has been excluded on all occasions, whether or not paracetamol or a compound analgesic was mentioned. This is because dextropropoxyphene is rarely, if ever, available other than as part of a paracetamol compound. However, codeine or dihydrocodeine mentioned **alone** were included in the indicator. This is because they are routinely available and known to be abused in this form. This approach is the same as that taken by GROS.
3. Drugs controlled under the Misuse of Drugs Act 1971 include class A, B and C drugs.
4. Information on the cause of death categories used to define the indicator in ICD-10 can be found in the report in *Health Statistics Quarterly* 36.[1]

Figure 1 **Age-specific mortality rates for deaths related to drug misuse, males and females, 2003–07[1]**



1 Mortality rates for 2007 have been calculated using the population projections for 2007 as estimates are not yet available. These rates are therefore provisional.

Table 4 Numbers of deaths related to drug misuse[1] by sex, underlying cause of death and age group, 2003–07

England and Wales

	Sex	2003	2004	2005	2006	2007
a) by sex and underlying cause of death (ICD-10[2] codes)						
All deaths related to drug misuse	Males	1,118	1,177	1,260	1,250	1,287
	Females	314	318	348	323	317
Mental and behavioural disorders due to drug use (excluding alcohol and tobacco) (F11-F16, F18-F19)	Males	629	631	682	639	552
	Females	126	117	122	100	96
Accidental poisoning by drugs, medicaments and biological substances (X40-X44)	Males	313	364	389	426	528
	Females	75	78	103	114	124
Intentional self-poisoning by drugs, medicaments and biological substances (X60-X64), and poisoning by drugs, medicaments and biological substances, undetermined intent (Y10-Y14)	Males	175	177	184	180	200
	Females	112	123	121	107	97
Assault by drugs, medicaments and biological substances (X85)	Males	1	5	5	5	7
	Females	1	0	2	2	0
b) by sex and age group						
All ages	Males	1,118	1,177	1,260	1,250	1,287
	Females	314	318	348	323	317
Under 20	Males	40	26	29	36	25
	Females	13	18	12	14	13
20–29	Males	353	346	336	338	343
	Females	72	80	66	70	60
30–39	Males	456	480	521	481	498
	Females	87	77	107	92	98
40–49	Males	187	197	239	270	296
	Females	55	64	83	56	65
50–69	Males	63	108	114	103	110
	Females	51	47	53	63	53
70 and over	Males	19	20	21	22	15
	Females	36	32	27	28	28

1 As defined by the current headline indicator on drug misuse (Box Three).
2 International Classification of Diseases, Tenth Revision.

Table 3 shows numbers of deaths related to drug misuse, using this definition and the current list of drugs controlled under the Misuse of Drugs Act, for 2003 to 2007. Because the indicator is based on the current list of drugs controlled under the Misuse of Drugs Act, earlier years' data have been updated to reflect additional substances.

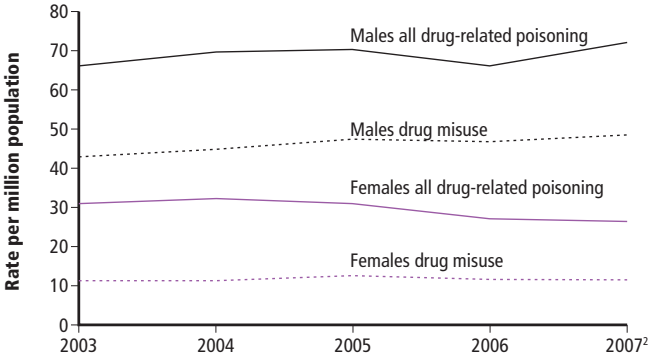
In 2007, the total number of drug misuse deaths rose to 1,604, a similar level to 2005, following a decline in 2006. This was an increase of 2 per cent compared to 2006 (and an increase of 12 per cent when compared to 2003). Drug misuse deaths now form a larger percentage of the total deaths on the database. As in 2006, they made up 61 per cent of the total, the highest proportion since 1993. In 2007, 67 per cent of male deaths on the database were related to drug misuse, a much higher proportion than for females (44 per cent).

Table 4a shows numbers of deaths related to drug misuse by underlying cause of death. In 2007, 'mental and behavioural disorders due to drug use' formed the largest proportion of deaths related to misuse in males (43 per cent), whereas deaths due to 'accidental poisoning' formed the highest proportion in females (39 per cent). Among males, the highest numbers of drug misuse deaths occurred in the 30–39 and 20–29 age groups (Table 4b), whereas females deaths were more evenly distributed across these and older age groups.

Figure 1 shows the trend in mortality rates by age group for deaths related to drug misuse. From 1993 to 2002, the age group with the highest rate was men aged 20–29. The recent decline in rates in this age group, and an increase among men aged 30–39, means that the latter age group has had the highest rate since 2003. The rate among men aged 40–49 increased by nearly half between 2003 and 2007 (45 per cent). In 2007, rates for females were lower than for males in every age group and, as with men, the highest rate was among those aged 30–39.

Figure 2 Mortality rates[1] for all drug-related poisoning, and drug misuse, by sex, 2003–07[2]

England and Wales



1 Directly agestandardised using the European Standard Population.
2 Mortality rates for 2007 have been calculated using the population projections for 2007 as estimates are not yet available. These rates are therefore provisional.

Age-standardised death rates for all drug-related poisoning, and drug misuse

Figure 2 shows trends in mortality rates for both drug-related poisoning and deaths related to drug misuse from 2003 to 2007. The rate for both all deaths related to drug poisoning and drug misuse in males increased over the period 2003–07, although there was slight decrease in the rate for all drug-related poisoning in 2006. The female rate for all drug-related poisoning declined between 2003 and 2007 whereas the rate for drug misuse remained stable during this period.

Age-standardised death rates for selected substances

Figure 3 shows the trend in mortality rates from drug-related poisoning for selected substances from 2003 to 2007. The death rate for heroin/morphine for males in 2007 was similar to that in 2005 and higher than for other substances throughout this period. The rate for paracetamol and its compounds decreased in males by almost half (41 per cent) between 2003 and 2007. There was a greater decrease in the rate for female deaths involving paracetamol (61 per cent between 2003 and 2007). This means that, although the rate for paracetamol was highest for females until 2004, from 2005 the highest rate has been for deaths involving antidepressants. Paracetamol and antidepressants are the substances most commonly used in suicides (which make up the majority of drug-related poisoning deaths among females). The death rates for methadone for males and females were 9.2 and 3.0 in 2007, an increase of 27 per cent and 57 per cent respectively between 2006 and 2007. These are also the highest rates for both sexes over the period between 2003 and 2007.

Key points

1. There were 1,914 male deaths related to drug poisoning in 2007 and male death rates increased between 2003 and 2007.The number of female deaths fell to 726, the lowest recorded annual number since 1993 (the first year for which data were published).
2. There were 829 deaths involved heroin or morphine in 2007, a 16 per cent rise compared to 2006. The number of deaths involving methadone continued to rise throughout 2003–07, to 325 in 2007.
3. There were 196 deaths involving cocaine in 2007. This was the highest number of deaths involving cocaine since 1993, when it was mentioned in only 11 deaths.
4. Deaths involving antidepressants were stable at 335 in 2007, whilst those involving paracetamol fell to the lowest recorded number (242 deaths).
5. In 2007, the total number of drug misuse deaths rose to 1,604, a similar level to 2005. This was an increase of 2 per cent compared to 2006 (and a 12 per cent increase compared to 2003). Rates for males increased steadily from 2003 to 2007 whereas female rates were stable.

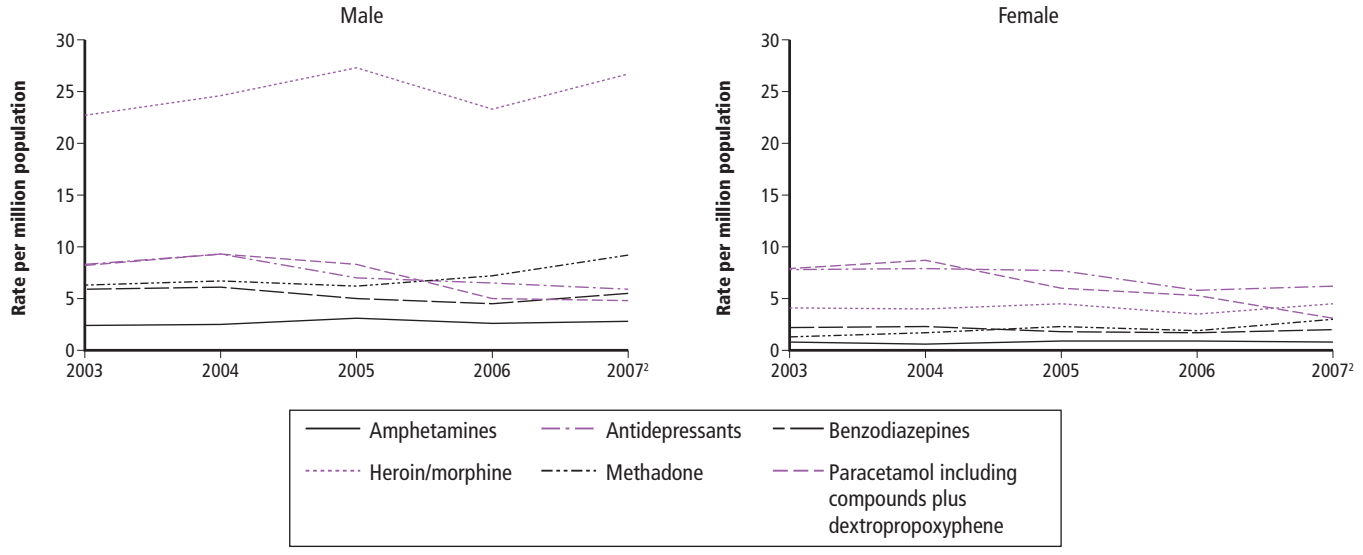
Further information

For further information on the ONS database of drug-related poisoning deaths email: mortality@ons.gov.uk

References

1. Office for National Statistics (2007) 'Deaths related to drug poisoning: results for England and Wales 2002–06, *Health Statistics Quarterly* **36**, 66–72. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
2. Projected population for 2007 (Government Actuary's Department), accessed on 16 July 2008, available at: www.gad.gov.uk/Demography_Data/Population
3. Christophersen O, Rooney C and Kelly S (1998) 'Drug related deaths: methods and trends', *Population Trends* **93**, 29–37.
4. The Advisory Council on the Misuse of Drugs (2000) *Reducing drug related deaths*, Home Office.
5. Department of Health (2001) *The Government Response to the Advisory Council on the Misuse of Drugs Report into Drug Related Deaths*, Department of Health.

Figure 3 Mortality rates[1] for selected substances, by sex, England and Wales, 2003–07[2]



1 Directly agestandardised using the European Standard Population
2 Mortality rates for 2007 have been calculated using the population projections for 2007 as estimates are not yet available. These rates are therefore provisional.

Report:

Death registrations in England and Wales, 2007, causes

This report presents numbers of deaths registered in England and Wales in 2007 by age, sex and selected underlying causes of death. It also compares mortality rates in 2007 with those for previous years. In addition, 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 504,052 deaths registered in 2007 compared with 502,599 registered in 2006, an increase of 0.3 per cent. The total number of deaths in 2007 comprised 240,787 male and 263,265 female deaths. This compares with 240,888 male and 261,711 female deaths registered in 2006
- In 2007, there were 3,345 infant deaths (under one year of age) registered in England and Wales, giving a rate of 4.8 per 1,000 live births. This is the lowest ever infant mortality rate recorded in England and Wales

Table 1 shows death rates by age and sex, for the years 1997, 2006 and 2007, together with percentage changes between 1997 and 2007. It should be noted that the age-specific rates for the younger age groups are based on small numbers of deaths, and relatively small changes in such numbers can result in large percentage changes.

Table 1 **Death rates by sex and age, 1997, 2006 and 2007**

England and Wales

Age group	1997[1]		2006[1]		2007[2]		Percentage change 1997–2007	
	Males	Females	Males	Females	Males	Females	Males	Females
Age-standardised mortality rate[3], all ages, all causes, per million population	9,152	6,031	7,123	4,989	6,957	4,926	–24.0	–18.3
Age-specific rates per 1,000 population								
Under 1[4]	6.6	5.3	5.4	4.6	5.3	4.3	–18.7	–18.3
1–4	0.3	0.2	0.2	0.2	0.3	0.2	–16.6	–18.9
5–9	0.2	0.1	0.1	0.1	0.1	0.1	–23.0	–25.1
10–14	0.2	0.1	0.2	0.1	0.1	0.1	–31.5	–6.9
15–19	0.6	0.3	0.5	0.2	0.4	0.2	–29.3	–25.6
20–24	0.9	0.3	0.7	0.3	0.7	0.3	–29.8	–21.2
25–29	0.9	0.3	0.8	0.3	0.8	0.3	–16.8	–11.9
30–34	1.0	0.5	1.0	0.4	1.0	0.5	–1.0	–5.2
35–39	1.3	0.8	1.3	0.7	1.3	0.7	2.0	–16.2
40–44	2.0	1.3	1.8	1.1	1.8	1.1	–10.8	–10.9
45–49	3.1	2.1	2.8	1.8	2.6	1.8	–13.9	–14.1
50–54	5.0	3.3	4.5	2.9	4.3	2.8	–13.7	–12.8
55–59	8.7	5.3	6.9	4.4	6.9	4.4	–21.0	–17.1
60–64	14.5	8.7	11.2	6.9	10.7	6.8	–26.3	–21.9
65–69	25.2	14.9	18.0	11.2	17.8	11.0	–29.6	–26.7
70–74	42.8	25.8	29.3	18.8	28.0	18.4	–34.6	–28.9
75–79	67.0	41.5	50.3	33.7	48.8	32.8	–27.2	–21.0
80–84	110.2	73.1	86.2	60.5	84.0	60.1	–23.8	–17.8
85 and over	197.8	160.6	163.4	143.8	162.0	144.3	–18.1	–10.1

1 Figures vary from previous rates published. For 2006, the population projections used to calculate rates have been replaced with 2007-based mid-year estimates. For 1997, the mid-year estimates used in the rates have been revised following the 2001 Census.
2 Provisional rates based on 2006-based population projections for 2007 and 2007 live births.
3 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.
4 Deaths per 1,000 live births.

- The provisional age-standardised mortality rates were 6,957 per million population for males and 4,926 per million for females in 2007. This compares with age-standardised rates of 7,123 per million for males and 4,989 per million for females in 2006. These age-standardised rates are for all causes and cover all ages

- Between 1997 and 2007, the age-standardised rate for males fell by 24 per cent (from 9,152 to 6,957 deaths per million), while for females it decreased by 18 per cent (from 6,031 to 4,926 deaths per million)

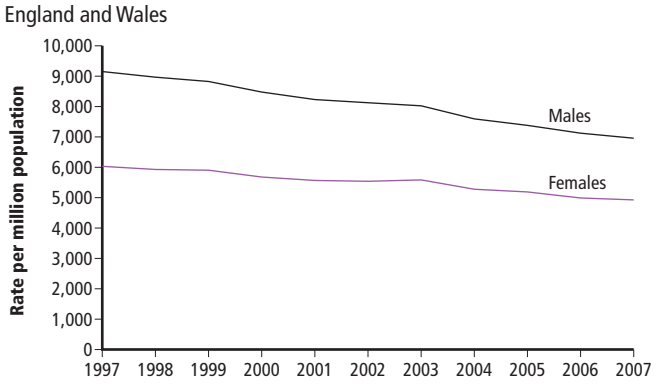
- For both sexes, the largest percentage decrease in age-specific rates between 1997 and 2007 was in the 70–74 age group (35 per cent and 29 per cent for males and females respectively)

Figure 1 shows the downward trend in age-standardised mortality rates for both males and females between 1997 and 2007.

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).

Figure 1 **Age-standardised mortality rates,[1] all ages, all causes, by sex, 1997–2007**



1 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.

The chapters (broad disease groups) of ICD–10 with the largest numbers of deaths in 2007 were circulatory diseases, which includes deaths from ischaemic heart disease and strokes (accounting for 34 per cent of all deaths), followed by cancers (neoplasms) which accounted for 28 per cent of all deaths and respiratory diseases, which includes deaths from pneumonia (14 per cent of all deaths).

Figure 2 shows the trends in age-standardised mortality rates for these three cause of death groups between 1997 and 2007. Throughout the period, the highest death rate among males was for circulatory diseases, despite a fall in the rate of 40 per cent to 2,303 per million population since 1997. The female death rate for circulatory disease also fell over the same period by more than a third (38 per cent) to 1,460 per million population and since 2006 it has been lower than the death rate for cancer. The fall in age-standardised mortality rates for cancer has been more gradual, with death rates 16 and 12 per cent lower in 2007 than in 1997 for males and females respectively.

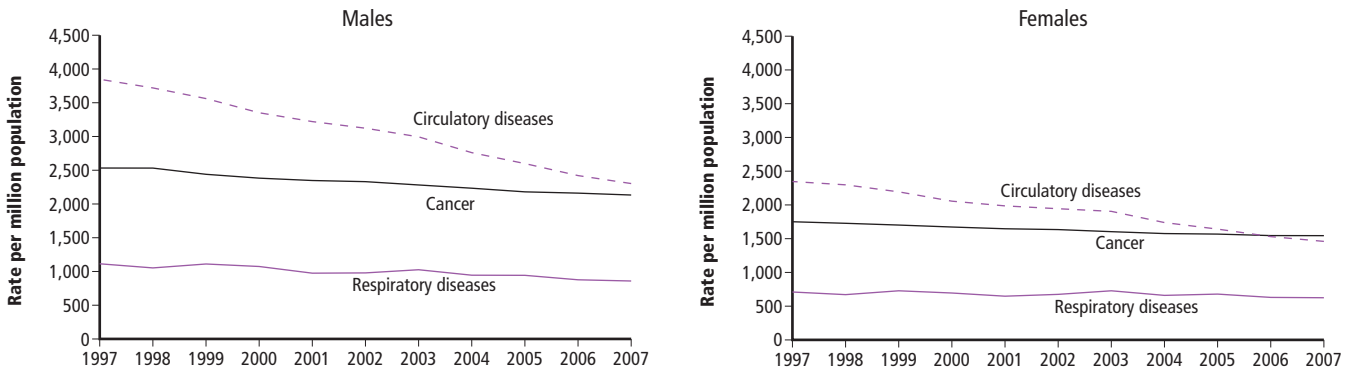
The rate for respiratory diseases in males decreased by 23 per cent over the same period, while the rate for females was 12 per cent lower in 2007 than in 1997. Respiratory disease mortality rates in a given year are strongly influenced by the seasonal pattern of mortality in that year and so differences between two years should always be examined in the context of long-term trends. Comparability ratios have been applied to the figures for each of the three cause of death groups for 1997 to 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 2007 for males and females. These are ranked according to a World Health Organization (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 mortality rates for the leading causes of death in 2007 have changed since 2002.

The leading cause of death for both sexes was ischaemic heart diseases which accounted for approximately one in five male deaths and one in eight female deaths during 2007. Cerebrovascular diseases (strokes) were the second leading cause of death for both sexes and accounted for a higher proportion of female deaths (11 per cent) than males (7 per cent). The difference between the top two causes of death, ischaemic heart

Figure 2 **Age-standardised, all age mortality rates[1] for three categories[2] of cause of death, by sex, 1997–2007**



1 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.
2 These categories correspond to the three chapters of ICD–10 with the largest number of deaths in England and Wales.
Note: The Tenth Revision of the International Classification of Diseases and Related Health Problems (ICD–10) came into operation in 2001. Comparability ratios have been applied to data for 1994 to 2000. See the Explanatory Notes.

Table 2 **Deaths by age, sex and underlying cause, 2007 registrations**

England and Wales

ICD–10 code	Causes of death[1]	Sex	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,	**All causes, all ages**	**M**	**240,787**	**1,889**	**339**	**408**	**2,015**	**3,138**	**6,264**	**11,893**	**27,508**	**47,830**	**80,573**	**58,930**
U509, V01–Y89		**F**	**263,265**	**1,456**	**235**	**313**	**810**	**1,360**	**3,787**	**8,072**	**18,166**	**33,903**	**79,411**	**115,752**
	All causes, ages under 28 days	**M**	**1,268**	**1,268**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
		F	**1,014**	**1,014**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
A00–R99,	**All causes, ages 28 days and over**	**M**	**239,519**	**621**	**339**	**408**	**2,015**	**3,138**	**6,264**	**11,893**	**27,508**	**47,830**	**80,573**	**58,930**
U509, V01–Y89		**F**	**262,251**	**442**	**235**	**313**	**810**	**1,360**	**3,787**	**8,072**	**18,166**	**33,903**	**79,411**	**115,752**
A00–B99	Certain infectious and parasitic diseases	M	**3,479**	49	34	12	25	52	136	184	294	465	1,180	1,048
		F	**4,691**	27	27	18	27	41	82	108	201	502	1,426	2,232
A00–A09	Intestinal infectious diseases	M	**1,485**	1	–	–	–	1	4	9	56	173	609	632
		F	**2,740**	1	2	1	1	1	3	14	49	218	874	1,576
A15–A16	Respiratory tuberculosis	M	**151**	–	–	–	2	7	11	13	21	19	52	26
		F	**77**	–	–	–	1	3	4	3	4	14	35	13
A17–A19	Other tuberculosis	M	**41**	–	1	–	–	3	4	5	7	6	10	5
		F	**27**	–	–	–	2	2	–	4	–	6	5	8
A39	Meningococcal infection	M	**41**	14	11	1	7	1	–	–	2	3	2	–
		F	**34**	6	5	1	4	2	1	3	3	5	3	1
A40–A41	Septicaemia	M	**1,004**	19	4	6	8	6	17	32	77	158	370	307
		F	**1,311**	12	10	8	9	8	16	32	83	177	417	539
B15–B19	Viral hepatitis	M	**148**	–	–	1	2	3	19	55	31	19	16	2
		F	**75**	–	–	–	1	1	7	16	12	14	21	3
B20–B24	Human immunodeficiency virus [HIV] disease	M	**177**	1	–	–	2	21	57	48	26	21	1	–
		F	**79**	–	–	1	1	19	39	11	5	3	–	–
B90	Sequelae of tuberculosis	M	**23**	–	–	–	–	–	–	–	3	3	7	10
		F	**16**	–	–	–	–	–	–	1	–	2	6	7
C00–D48	Neoplasms	M	**72,970**	10	45	98	182	343	1,105	3,515	11,395	19,731	24,997	11,549
		F	**67,110**	7	32	76	154	357	1,557	4,112	9,896	14,935	21,430	14,554
C00–C97	Malignant neoplasms	M	**71,331**	9	39	92	174	324	1,079	3,440	11,255	19,395	24,392	11,132
		F	**65,473**	7	28	73	144	345	1,528	4,067	9,787	14,713	20,858	13,923
C00–C14	Malignant neoplasms of lip, oral cavity and pharynx	M	**1,237**	–	–	–	3	6	36	182	361	311	236	102
		F	**577**	–	1	–	3	3	20	50	106	124	143	127
C15	Malignant neoplasm of oesophagus	M	**4,225**	–	–	–	–	5	71	299	907	1,223	1,257	463
		F	**2,199**	–	–	–	–	2	12	74	278	519	757	557
C16	Malignant neoplasm of stomach	M	**2,878**	–	–	–	1	10	44	121	348	788	1,095	471
		F	**1,709**	–	–	–	1	12	34	68	149	326	652	467
C18	Malignant neoplasm of colon	M	**4,433**	–	–	–	3	21	69	188	666	1,191	1,604	691
		F	**4,421**	–	–	–	5	12	59	176	473	851	1,586	1,259
C19–C21	Malignant neoplasm of rectosigmoid junction, rectum and anus	M	**2,984**	1	–	–	2	10	41	154	544	857	956	419
		F	**2,192**	–	–	–	1	11	30	118	286	434	727	585
C22	Malignant neoplasm of liver and intrahepatic bile ducts	M	**1,633**	–	1	–	6	12	29	123	304	489	511	158
		F	**1,115**	–	–	1	1	3	15	52	157	296	372	218
C23–C24	Malignant neoplasm of gallbladder and biliary tract	M	**203**	–	–	–	–	–	2	13	36	54	61	37
		F	**377**	–	–	–	–	1	7	19	46	97	131	76
C25	Malignant neoplasm of pancreas	M	**3,316**	–	–	1	2	6	52	216	648	1,030	1,010	351
		F	**3,529**	–	–	–	1	3	26	157	491	880	1,197	774
C32	Malignant neoplasm of larynx	M	**526**	–	–	–	–	1	4	48	114	152	125	82
		F	**131**	–	–	–	–	1	1	13	26	20	43	27
C33–C34	Malignant neoplasm of trachea, bronchus and lung	M	**16,961**	–	–	–	2	9	116	717	3,002	5,253	5,910	1,952
		F	**12,699**	–	–	–	–	14	108	603	2,148	3,478	4,538	1,810

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

Table 2 cont. **Deaths by age, sex and underlying cause, 2007 registrations**

England and Wales

ICD–10 code	Causes of death[1]	Sex	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
C43	Malignant melanoma of skin	M	**988**	–	–	–	8	26	76	110	218	253	224	73
		F	**837**	–	–	–	2	18	55	100	146	152	212	152
C44	Other malignant neoplasms of skin	M	**280**	–	–	–	–	1	2	10	29	47	89	102
		F	**208**	–	–	–	–	2	2	4	11	25	54	110
C45	Mesothelioma	M	**1,559**	–	–	–	–	–	7	38	307	557	510	140
		F	**299**	–	–	–	–	–	3	13	62	99	93	29
C46	Kaposi's sarcoma	M	**4**	–	–	–	–	–	1	–	–	–	2	1
		F	**–**	–	–	–	–	–	–	–	–	–	–	–
C50	Malignant neoplasm of breast	M	**87**	–	–	–	–	1	2	8	14	13	28	21
		F	**10,640**	–	–	–	1	63	566	1,223	1,995	2,093	2,536	2,163
C53	Malignant neoplasm of cervix uteri	F	**820**	–	–	–	3	55	113	128	150	127	155	89
C54–C55	Malignant neoplasm of other and unspecified parts of uterus	F	**1,506**	–	–	–	–	2	13	76	267	383	468	297
C56	Malignant neoplasm of ovary	F	**3,730**	–	–	2	5	17	67	318	789	1,019	983	530
C61	Malignant neoplasm of prostate	M	**9,230**	–	–	–	1	–	3	74	598	1,846	3,927	2,781
C62	Malignant neoplasm of testis	M	**52**	–	–	–	6	8	13	14	3	2	5	1
C64	Malignant neoplasm of kidney, except renal pelvis	M	**1,867**	–	–	4	1	8	34	144	398	510	528	240
		F	**1,168**	1	1	4	2	2	29	51	182	305	372	219
C67	Malignant neoplasm of bladder	M	**2,923**	–	–	–	1	–	13	59	275	704	1,191	680
		F	**1,437**	–	–	–	1	–	13	31	95	246	533	518
C71	Malignant neoplasm of brain	M	**1,792**	2	11	29	29	63	133	239	444	471	301	70
		F	**1,360**	1	14	32	24	33	94	159	301	349	267	86
C81	Hodgkin's disease	M	**146**	–	–	–	7	6	15	13	32	35	35	3
		F	**139**	–	–	1	7	13	12	6	21	30	34	15
C82–C85	Non–Hodgkin's lymphoma	M	**2,180**	1	1	3	10	23	69	130	355	581	707	300
		F	**1,833**	–	–	2	10	6	29	89	213	395	663	426
C90	Multiple myeloma and malignant plasma cell neoplasms	M	**1,237**	–	–	–	–	2	7	57	166	356	467	182
		F	**1,166**	–	–	–	–	–	5	45	136	276	435	269
C91–C95	Leukaemia	M	**2,240**	3	10	26	40	38	60	96	285	584	766	332
		F	**1,695**	3	7	12	30	25	57	77	151	348	537	448
C97	Malignant neoplasms of independent (primary) multiple sites	M	**537**	–	–	1	1	2	3	18	57	118	212	12
		F	**398**	1	–	–	2	–	5	16	57	80	129	108 5
D00–D48	In situ and benign neoplasms, and neoplasms of uncertain or unknown behaviour	M	**1,639**	1	6	6	8	19	26	75	140	336	605	417
		F	**1,637**	–	4	3	10	12	29	45	109	222	572	631
D50–D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	M	**435**	6	6	6	13	13	25	38	51	64	108	105
		F	**593**	3	5	12	4	11	16	30	52	91	145	224
D50–D64	Anaemias	M	**157**	1	–	2	5	7	6	9	14	15	37	61
		F	**296**	–	1	5	2	4	6	4	12	29	75	158
E00–E90	Endocrine, nutritional and metabolic diseases	M	**3,248**	20	27	21	41	57	97	167	317	656	1,117	728
		F	**3,966**	15	15	24	44	63	77	132	228	523	1,183	1,662
E10–E14	Diabetes mellitus	M	**2,521**	–	–	–	15	12	50	91	222	537	967	627
		F	**2,912**	–	–	3	11	30	46	76	139	392	952	1,263
F00–F99	Mental and behavioural disorders	M	**5,390**	–	–	1	101	294	286	196	157	360	1,646	2,349
		F	**11,192**	–	–	4	25	67	75	69	95	368	2,790	7,699
F01, F03	Vascular and unspecified dementia	M	**4,272**	–	–	–	–	–	1	5	46	312	1,602	2,306
		F	**10,676**	–	–	–	–	–	1	4	43	335	2,705	7,588
F10–F19	Mental and behavioural disorders due to psychoactive substance use	M	**1,024**	–	–	–	101	291	281	188	102	41	16	4
		F	**296**	–	–	–	23	61	72	60	44	24	9	3
G00–G99	Diseases of the nervous system	M	**7,560**	38	40	65	125	140	241	375	639	1,272	2,736	1,889
		F	**8,795**	24	35	37	73	74	182	314	606	1,054	2,875	3,521
G00–G03	Meningitis (excluding meningococcal)	M	**80**	6	1	2	3	6	6	16	11	13	12	4
		F	**84**	4	2	1	3	3	9	4	15	13	16	14
G12.2	Motor neuron disease	M	**947**	–	–	–	1	4	20	67	197	298	290	70
		F	**736**	–	–	–	1	4	11	48	141	223	237	71
G20	Parkinson's disease	M	**2,537**	–	–	–	–	–	–	1	34	392	1,276	834
		F	**1,834**	–	–	–	–	–	1	1	22	173	829	808

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

Table 2 cont. **Deaths by age, sex and underlying cause, 2007 registrations**

England and Wales

ICD–10 code	Causes of death[1]	Sex	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
G30	Alzheimer's disease	M	**1,791**	–	–	–	–	–	–	4	53	214	751	769
		F	**3,906**	–	–	–	–	–	–	4	58	251	1,349	2,244
G35	Multiple sclerosis	M	**375**	–	–	–	1	7	28	82	103	87	59	8
		F	**627**	–	–	–	–	10	57	111	168	150	95	36
H00–H59	Diseases of the eye and adnexa	M	**3**	–	–	–	–	–	–	–	–	–	2	1
		F	**4**	1	–	–	–	1	–	–	–	–	1	1
H60–H95	Diseases of the ear and mastoid process	M	**6**	–	–	–	–	1	1	1	–	–	2	1
		F	**7**	–	–	–	–	–	1	–	2	1	1	2
I00–I99	Diseases of the circulatory system	M	**82,014**	40	24	17	103	296	1,230	3,506	8,609	15,983	30,009	22,197
		F	**88,323**	22	11	19	54	151	531	1,286	3,259	8,979	28,485	45,526
I05–I09	Chronic rheumatic heart diseases	M	**304**	–	1	–	–	4	9	13	25	81	109	62
		F	**770**	–	1	–	1	3	7	11	44	156	308	239
I10–I15	Hypertensive diseases	M	**1,730**	–	–	–	–	3	29	104	227	308	592	467
		F	**2,580**	–	–	–	–	1	15	36	108	232	727	1,461
I20–I25	Ischaemic heart diseases	M	**44,927**	1	–	1	5	100	652	2,282	5,744	9,766	16,069	10,307
		F	**34,982**	–	–	1	3	17	159	471	1,494	4,204	11,951	16,682
I21–I22	Acute myocardial infarction	M	**17,694**	1	–	–	3	50	312	941	2,419	3,929	6,280	3,759
		F	**13,589**	–	–	1	3	8	84	202	639	1,767	4,887	5,998
I26–I51	Other heart diseases	M	**9,569**	27	19	9	66	100	238	401	807	1,414	3,195	3,293
		F	**13,845**	16	8	14	33	55	121	225	439	1,127	3,741	8,066
I60–I69	Cerebrovascular diseases	M	**17,864**	11	2	4	25	53	188	456	1,039	2,714	7,078	6,294
		F	**28,733**	6	2	1	10	50	154	392	846	2,264	8,995	16,013
I60–I62	Intracranial haemorrhage	M	**3,148**	3	1	2	18	40	136	297	473	669	995	514
		F	**4,211**	1	–	1	8	46	123	299	464	716	1,380	1,173
I63	Cerebral infarction	M	**1,916**	1	–	–	3	7	20	59	155	328	770	573
		F	**2,644**	2	2	–	–	3	11	43	97	269	860	1,357
I64	Stroke, not specified as haemorrhage or infarction	M	**8,174**	–	–	–	2	4	26	91	326	1,244	3,384	3,097
		F	**14,460**	–	–	–	1	1	13	39	227	979	4,564	8,636
I70	Atherosclerosis	M	**216**	–	–	–	–	–	–	–	8	31	78	99
		F	**379**	–	–	–	–	–	–	–	6	21	91	261
I71	Aortic aneurysm and dissection	M	**4,676**	–	–	1	6	14	40	74	368	1,101	1,976	1,096
		F	**3,071**	–	–	–	–	1	12	27	96	427	1,343	1,165
J00–J99	Diseases of the respiratory system	M	**31,514**	36	25	30	47	49	247	655	2,124	5,287	11,698	11,316
		F	**37,460**	35	27	22	28	62	169	446	1,529	4,059	11,629	19,454
J10–J11	Influenza	M	**16**	1	3	1	–	–	–	–	1	2	1	7
		F	**15**	–	2	1	–	–	–	–	–	1	1	10
J12–J18	Pneumonia	M	**11,237**	12	7	7	16	20	121	258	558	1,213	3,586	5,439
		F	**16,915**	9	10	5	11	26	80	146	333	926	4,107	11,262
J40–J44	Bronchitis, emphysema and other chronic obstructive pulmonary disease	M	**12,359**	–	–	–	1	2	34	205	1,054	2,699	5,241	3,123
		F	**11,368**	1	1	–	–	1	17	150	810	2,247	4,925	3,216
J45–J46	Asthma	M	**338**	1	1	11	12	14	19	39	32	42	86	81
		F	**695**	–	1	5	6	16	28	44	59	74	179	283
K00–K93	Diseases of the digestive system	M	**12,007**	13	9	12	18	172	803	1,549	2,100	2,155	3,067	2,109
		F	**13,663**	15	6	10	15	89	438	831	1,301	1,755	4,138	5,065
K25–K27	Gastric and duodenal ulcer	M	**1,361**	–	–	1	–	12	26	71	176	265	461	349
		F	**1,472**	–	–	–	2	5	17	33	88	164	535	628
K40–K46	Hernia	M	**352**	1	2	1	1	2	5	12	22	66	133	107
		F	**480**	–	–	–	–	1	3	9	19	56	166	226
K57	Diverticular disease of intestine	M	**496**	–	–	–	–	–	2	11	39	83	210	151
		F	**1,438**	–	–	–	–	1	4	11	59	160	559	644
K70–K76	Diseases of the liver	M	**4,627**	3	2	2	4	114	626	1,228	1,364	790	392	102
		F	**2,775**	2	2	3	3	65	343	622	762	474	367	132
L00–L99	Diseases of the skin and subcutaneous tissue	M	**591**	–	–	–	–	3	7	22	53	97	200	209
		F	**1,231**	–	–	1	1	4	8	14	41	117	382	663
M00–M99	Diseases of the musculoskeletal system and connective tissue	M	**1,284**	2	3	3	3	11	17	36	102	203	453	451
		F	**3,020**	–	1	3	10	10	25	40	130	345	923	1,533
M05–M06, M08	Rheumatoid arthritis and juvenile arthritis	M	**181**	–	–	–	–	–	1	3	21	54	74	28
		F	**553**	–	–	–	–	–	3	7	35	113	232	163
M80–M81	Osteoporosis	M	**320**	–	–	–	–	–	–	1	6	20	90	203
		F	**1,189**	–	–	–	–	–	1	1	12	54	282	839

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

Table 2 cont. **Deaths by age, sex and underlying cause, 2007 registrations**

England and Wales

ICD–10 code	Causes of death[1]	Sex	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
N00–N99	Diseases of the genitourinary system	M	**4,690**	5	2	1	7	14	31	75	189	547	1,718	2,101
		F	**6,611**	3	1	4	4	11	38	69	166	518	1,975	3,822
N00–N15	Glomerular and renal tubulo-interstitial diseases	M	**383**	3	2	–	2	5	6	17	31	67	144	106
		F	**416**	2	–	2	1	1	4	10	33	53	146	164
N17–N19	Renal failure	M	**1,500**	–	–	1	2	5	15	21	72	194	512	678
		F	**1,608**	–	–	2	–	1	14	17	40	143	471	920
N40	Hyperplasia of prostate	M	**165**	–	–	–	–	–	–	–	1	12	62	90
O00–O99	Pregnancy, childbirth and the puerperium	F	**47**	–	–	–	8	18	21	–	–	–	–	–
P00–P96	Certain conditions originating in the perinatal period	M	**103**	99	2	2	–	–	–	–	–	–	–	–
		F	**77**	73	3	1	–	–	–	–	–	–	–	–
Q00–Q99	Congenital malformations, deformations and chromosomal abnormalities	M	**655**	119	42	24	39	37	69	77	112	57	54	25
		F	**580**	111	33	24	25	33	55	50	113	50	50	36
Q20–Q28	Congenital malformations of the circulatory system	M	**297**	53	22	11	24	19	37	31	44	23	28	5
		F	**230**	51	11	6	16	20	21	21	27	24	22	11
R00–R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	M	**2,765**	150	18	6	36	84	132	154	181	105	256	1,643
		F	**8,265**	89	8	1	17	31	61	68	59	70	598	7,263
R54	Senility	M	**1,725**	–	–	–	–	–	–	–	–	4	171	1,550
		F	**7,470**	–	–	–	–	–	–	–	–	8	497	6,965
R95	Sudden infant death syndrome	M	**112**	105	7	–	–	–	–	–	–	–	–	–
		F	**58**	57	1	–	–	–	–	–	–	–	–	–
R99	Other ill-defined and unspecified causes of mortality	M	**789**	44	10	5	29	71	127	149	169	94	62	29
		F	**380**	31	7	1	10	25	53	62	54	52	52	33
U509, V01–Y89	External causes of morbidity and mortality	M	**10,805**	34	62	110	1,275	1,572	1,837	1,343	1,185	848	1,330	1,209
		F	**6,616**	17	31	57	321	337	451	503	488	536	1,380	2,495
V01–X59	Accidents	M	**6,670**	17	44	94	808	832	874	651	634	572	1,063	1,081
		F	**5,139**	9	18	41	197	144	204	233	280	395	1,211	2,407
V01–V99, Y85	Transport accidents[2]	M	**2,259**	2	16	58	599	401	377	249	206	127	159	65
		F	**737**	1	12	28	154	62	66	66	76	84	116	72
V01–V89	Land transport accidents involving pedestrians, pedal cyclists, motor cyclists and occupants of motor vehicles	M	**2,191**	2	15	58	597	390	363	230	195	120	157	64
		F	**728**	1	12	28	152	62	66	64	75	81	115	72
W00–W19	Falls	M	**1,644**	–	3	3	32	51	82	124	188	244	481	436
		F	**1,674**	1	–	–	3	16	29	49	84	148	529	815
W65–W74	Accidental drowning and submersion	M	**152**	2	10	6	33	16	22	22	18	8	13	2
		F	**41**	–	1	2	4	3	6	6	8	5	4	2
X00–X09	Exposure to smoke, fire and flames	M	**140**	1	6	1	8	12	15	18	17	25	24	13
		F	**87**	1	1	2	–	4	8	11	10	16	17	17
X40–X49	Accidental poisoning by and exposure to noxious substances	M	**890**	–	–	4	85	270	276	150	74	18	10	3
		F	**317**	–	–	2	22	51	75	69	48	19	18	13
X41	Accidental poisoning by and exposure to anti-epileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	M	**90**	–	–	–	8	21	27	16	12	4	2	–
		F	**55**	–	–	–	4	6	15	11	13	4	1	1
X42	Accidental poisoning by and exposure to not narcotics and psychodysleptics [hallucinogens], elsewhere classified	M	**416**	–	–	1	42	164	145	44	17	2	–	1
		F	**67**	–	–	1	10	22	15	11	4	1	2	1
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	M	**202**	–	–	–	27	62	51	47	10	3	2	–
		F	**90**	–	–	–	4	18	25	18	17	1	5	2
X59	Accidental exposure to unspecified factor	M	**1,083**	1	–	2	12	18	30	35	64	98	310	513
		F	**1,987**	2	1	2	6	2	6	11	21	90	456	1,390
X60–X84	Intentional self-harm	M	**2,481**	–	–	5	220	439	635	458	357	172	144	51
		F	**684**	–	–	2	45	106	119	154	114	68	53	23
X85–Y09	Assault	M	**245**	6	6	2	54	63	47	31	22	7	2	5
		F	**124**	2	4	4	25	25	21	19	12	3	8	1
Y10–Y34	Event of undetermined intent	M	**827**	1	2	4	103	172	214	137	107	38	36	13
		F	**333**	–	–	5	27	40	78	68	48	28	25	14
X60–X84, Y10–Y34	Intentional self-harm and event of undetermined intent	M	**3,308**	1	2	9	323	611	849	595	464	210	180	64
		F	**1,017**	–	–	7	72	146	197	222	162	96	78	37
U509, X85–Y09	Assault; death from injury and poisoning, event awaiting determination of intent	M	**551**	14	13	6	140	121	105	71	46	18	11	6
		F	**239**	4	9	8	49	42	40	36	22	11	14	4

1. The figures for individual cause categories exclude deaths at ages under 28 days.
2. Including sequelae of transport accidents.

Table 3 **Leading causes of mortality by sex, 2007**

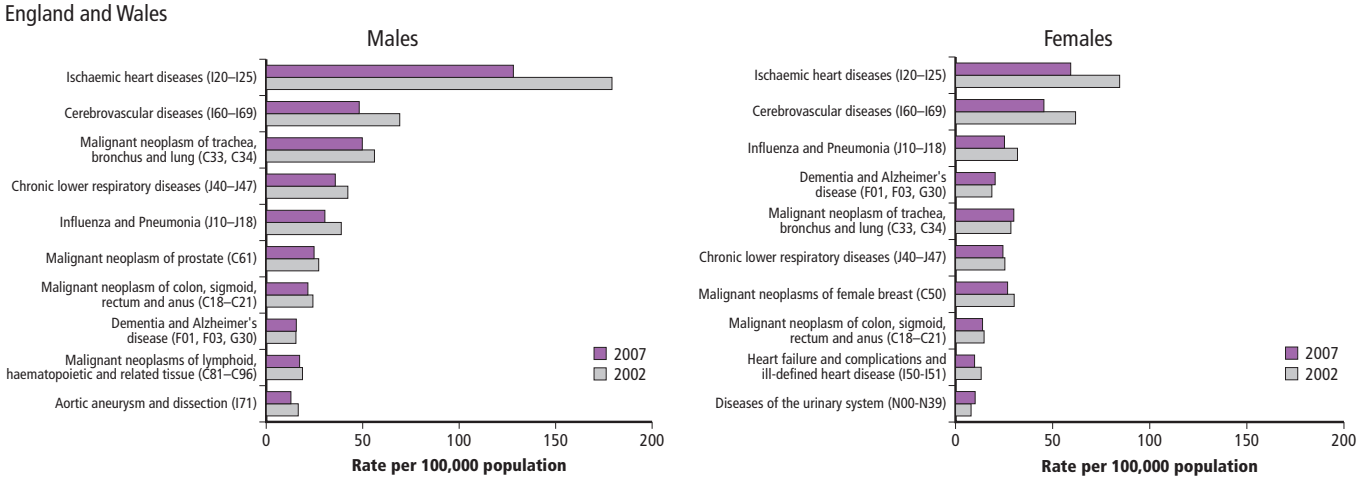
England and Wales

Rank	Underlying cause of death[1]	Number of deaths	Percentage of all deaths	Age-standardised all age mortality rate per 100,000 population
Males				
Rank				
1	Ischaemic heart diseases (I20-I25)	44,927	18.7	128.1
2	Cerebrovascular diseases (I60-I69)	17,864	7.4	48.2
3	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	16,961	7.0	49.8
4	Chronic lower respiratory diseases (J40-J47)	13,080	5.4	35.8
5	Influenza and Pneumonia (J10-J18)	11,253	4.7	30.4
6	Malignant neoplasm of prostate (C61)	9,230	3.8	24.8
7	Malignant neoplasm of colon, sigmoid, rectum and anus (C18-C21)	7,417	3.1	21.6
8	Dementia and Alzheimer's disease (F01, F03, G30)	6,063	2.5	15.6
9	Malignant neoplasms of lymphoid, haematopoietic and related tissue (C81-C96)	5,872	2.4	17.3
10	Aortic aneurysm and dissection (I71)	4,676	1.9	12.8
	All deaths	**240,787**		
Females				
Rank				
1	Ischaemic heart diseases (I20-I25)	34,982	13.3	59.3
2	Cerebrovascular diseases (I60-I69)	28,733	10.9	45.5
3	Influenza and Pneumonia (J10-J18)	16,930	6.4	25.2
4	Dementia and Alzheimer's disease (F01, F03, G30)	14,582	5.5	20.4
5	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	12,699	4.8	30.0
6	Chronic lower respiratory diseases (J40-J47)	12,588	4.8	24.4
7	Malignant neoplasms of female breast (C50)	10,640	4.0	26.8
8	Malignant neoplasm of colon, sigmoid, rectum and anus (C18-C21)	6,613	2.5	13.9
9	Heart failure and complications and ill-defined heart disease (I50-I51)	6,606	2.5	9.8
10	Diseases of the urinary system (N00-N39)	6,468	2.5	10.1
	All deaths	**263,265**		

1 The cause of death groups used here are based on a list developed by the WHO, modified for use in England and Wales. For more information see Reference 10.

Figure 3 **Age-standardised, all age mortality rates for the ten leading causes of death:[1] by sex, 2007 and comparison rate for 2002[2]**

England and Wales



1 The cause of death groups used here are based on a list provided developed by the WHO, modified for use in England and Wales. For more information see Reference 10.
2 For 2002 the mortality rates are given for the top ten causes of death in 2007 as a comparison.

and cerebrovascular diseases, was greater among males (a difference of around 27,000 deaths) than females (just over 6,200 deaths). A further five causes of death appear in both the male and female top ten underlying causes but not at the same ranks.

For both sexes, lung cancer (malignant neoplasm of trachea, bronchus and lung) was the most common cancer, appearing third in the underlying cause of death list for males and fifth for females. The list also contained three other cancers for males and two for females, including ones which are sex-specific (prostate cancer and female breast cancer).

In Table 3 the leading causes are ranked by number of deaths. If causes were ranked by their age-standardised mortality rates instead, the rankings would change. For example, dementia and Alzheimer's disease among females is ranked fourth on number of deaths but would be ranked seventh if looking at mortality rates. This is because the age-standardisation process gives less weight to deaths at older ages (where most of the dementia and Alzheimer's disease deaths occur).

Figure 3 shows how the age-standardised, all age mortality rates for the ten leading underlying causes in 2007 have changed since 2002. For males, nearly all of the mortality rates for the leading underlying causes in 2007 have shown a decrease since 2002. The largest percentage falls in male mortality rates were for cerebrovascular diseases and ischaemic heart diseases which fell by 30 and 29 per cent respectively. The only increase in male mortality rates was for dementia and Alzheimer's disease which rose slightly by 1.6 per cent.

For females, the all age mortality rates for ischaemic heart diseases and cerebrovascular diseases also showed the largest falls between 2002 and 2007 (30 and 26 per cent respectively). The rate for diseases of the urinary system increased by over a quarter (25 per cent), whilst two other causes of death – dementia and Alzheimer's disease, and lung cancer – also showed increases in mortality rates of 9.3 and 5.5 per cent respectively over the same period.

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, Office for National Statistics (ONS) publications gave numbers of deaths registered in the data year. Between 1993 and 2005 the majority of ONS's published figures represented the number of deaths that occurred in the data year. For 2006 onwards, ONS changed the reporting of death figures back to deaths registered in a reference year following feedback from a user consultation which ended on 13 July 2007.[1] In most years (and for most causes of death), this change has little effect on annual totals but allows the output of more timely mortality data. This is because, for an annual extract of death occurrences to be acceptably complete, it must be taken some months after the end of the data year to allow for late registrations.

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 the 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* 08[4] and 13[5] and also on the National Statistics website.[6]

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.

The cause of death data in this report are based on the 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 original underlying cause of death only changes in a very small number of deaths (around 0.2 per cent) in a given year and was used in this report between 2004 and 2006.

Change in the coding of cause of death for adjourned inquests

From 1 January 2007 onwards, deaths involving adjourned inquests, that would in the past have been coded to the ICD–10 cause code Y33.9, are now coded to U50.9, 'Event awaiting determination of event'. This means that adjourned inquests will no longer be included in the Y10-Y34 code range, making the tabulation of deaths from undetermined intent, and estimates of suicide, easier to produce. Deaths with a code U50.9 will now be grouped with homicides to form a group for 'probable homicides' (as was the case using Y33.9).

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.[7] 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 2007 are the 2006-based population projections for 2007. These are available on the National Statistics website.[8] The population figures used to calculate mortality rates for 2006 and earlier years are ONS mid-year population estimates.

The population estimates used were the most up-to-date at the time of writing. Population estimates for mid-2006 were published on 22 August 2007 alongside revised population estimates for 2002 to 2005. Revised estimates for mid-2001 were published on 9 September 2004, and revised estimates for 1992 to 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.[9]

Leading causes of death in England and Wales

The cause of death groups used here are based on a list developed by the 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 13 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.[10]

References

1. Office for National Statistics (2008) *Mortality statistics: Deaths registered in 2006*, DR_06, section 2.2. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=15096
2. World Health Organization (1992–1994) *International Statistical Classification of Diseases and Related Health Problems,* Tenth Revision. Volumes 1, 2 and 3, World Health Organization: Geneva.
3. World Health Organization (1977–1978) *International Statistical Classification of Diseases, Injuries and Causes of Death,* Ninth Revision. Volumes 1 and 2, World Health Organization: Geneva.
4. Rooney C and Smith S (2000) 'Implementation of ICD–10 for mortality in England and Wales from January 2000', *Health Statistics Quarterly* **08**, 40–50. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
5. Rooney C, Griffiths C and Cook L (2002) 'The implementation of ICD–10 for cause of death coding – some preliminary results from the bridge coding study', *Health Statistics Quarterly* **13**, 31–41. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
6. Office for National Statistics ICD–10 mortality. Available on the National Statistics website at: www.statistics.gov.uk/about/classifications/icd10/default.asp
7. Office for National Statistics (2002) 'Report: Results of the ICD–10 bridge coding study, England and Wales, 1999', *Health Statistics Quarterly* **14**, 75–83. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
8. Office for National Statistics Population Projections. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=8519
9. Office for National Statistics Population estimates. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=601
10. Griffiths C, Rooney C and Brock A. (2005) 'Leading causes of death in England and Wales – how should we group causes?', *Health Statistics Quarterly* **28**, 6–17. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725

Report:

Infant and perinatal mortality 2007: health areas, England and Wales

Introduction

This report gives statistics on infant deaths registered in 2007, and live births and stillbirths occurring in 2007, in England and Wales, for each Government Office Region (GOR) and Strategic Health Authority (SHA) in England and Local Health Board (LHB) in Wales.

Perinatal and infant mortality

Provisional figures show there were 3,582 stillbirths and 1,770 deaths at ages under seven days registered in England and Wales in 2007. The provisional stillbirth rate decreased to 5.2 per thousand live births and stillbirths in 2007. The provisional perinatal rate also decreased to 7.7 per thousand live births and stillbirths (Table 1).

The neonatal mortality rate (deaths under 28 days) decreased to 3.3 per thousand live births in 2007, from 3.5 in 2006. The postneonatal mortality rate (deaths between 28 days and one year) remained at 1.5 per thousand live births.

There were 3,345 infant deaths (at ages under one year) registered in England and Wales in 2007, giving an infant mortality rate of 4.8 deaths per thousand live births. This is the lowest rate ever recorded in England and Wales.

The infant mortality rate over the period 1978 to 2007 by age at death in the neonatal and postneonatal period is shown in Figure 1. The infant mortality rate fell by 64 per cent over this period, while the neonatal and postneonatal rates all fell by 62 and 67 per cent respectively. However, these declines were not constant over the period, being mainly concentrated in the earlier years.

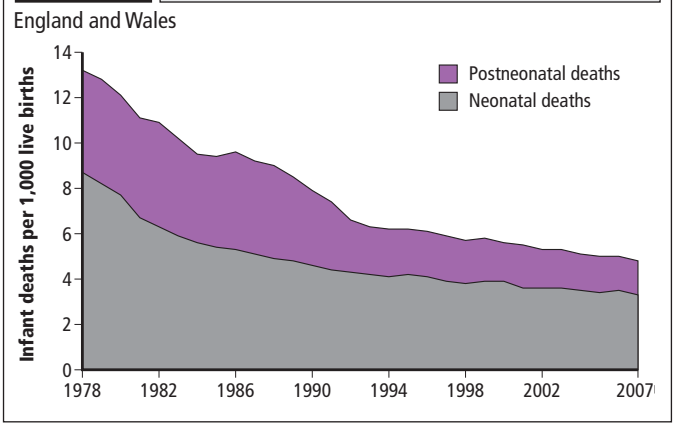
Table 1 **Live births, stillbirths and infant deaths, 1978–2007**

England and Wales

Year	Live births	Stillbirths[1]	Number of deaths[2]				Stillbirth rate[3]	Mortality rates			
			Under 1 week	Under 4 weeks	4 weeks – 1 year	Under 1 year		Perinatal[3]	Neonatal[4]	Post-neonatal[4]	Infant[4]
Numbers											
1978	596,418	5,108	4,242	5,187	2,694	7,881	8.5	15.5	8.7	4.5	13.2
1983	629,134	3,631	2,951	3,682	2,699	6,381	5.7	10.4	5.9	4.3	10.1
1988	693,577	3,382	2,701	3,421	2,849	6,270	4.9	8.7	4.9	4.1	9.0
1993	673,467	3,855	2,178	2,796	1,446	4,242	5.7	8.9	4.2	2.1	6.3
1994	664,726	3,813	2,142	2,749	1,371	4,120	5.7	8.9	4.1	2.1	6.2
1995	648,138	3,600	2,104	2,698	1,284	3,982	5.5	8.7	4.2	2.0	6.1
1996	649,489	3,539	2,066	2,645	1,314	3,959	5.4	8.6	4.1	2.0	6.1
1997	643,095	3,439	1,941	2,517	1,282	3,799	5.3	8.3	3.9	2.0	5.9
1998	635,901	3,417	1,844	2,418	1,207	3,625	5.3	8.2	3.8	1.9	5.7
1999	621,872	3,305	1,833	2,435	1,186	3,621	5.3	8.2	3.9	1.9	5.8
2000	604,441	3,203	1,753	2,335	1,042	3,377	5.3	8.2	3.9	1.7	5.6
2001	594,634	3,159	1,598	2,137	1,103	3,240	5.3	8.0	3.6	1.9	5.4
2002	596,122	3,372	1,620	2,126	1,001	3,127	5.6	8.3	3.6	1.7	5.2
2003	621,469	3,612	1,749	2,264	1,042	3,306	5.8	8.6	3.6	1.7	5.3
2004	639,721	3,686	1,699	2,209	1,009	3,218	5.7	8.4	3.5	1.6	5.0
2005	645,835	3,483	1,697	2,227	1,032	3,259	5.4	8.0	3.4	1.6	5.0
2006	669,601	3,602	1,751	2,325	996	3,321	5.4	8.0	3.5	1.5	5.0
2007	690,013	3,582[p]	1,770[p]	2,282	1,063	3,345	5.2[p]	7.7[p]	3.3	1.5	4.8

1 See the background note 'Legal definition of stillbirths'.
2 Numbers of deaths shown are based on annual occurrences for years 1993 to 2006, and on annual registrations for all other years.
3 Per 1,000 live births and stillbirths.
4 Per 1,000 live births.
p provisional.

Figure 1 Infant mortality rates, 1978–2007



Geographical variation in infant mortality

There was considerable variation in the infant mortality rate across the health authorities. In 2007, West Midlands had the highest infant mortality rate among the SHAs in England at 5.9 deaths per thousand live births. South East had the lowest at 3.9 deaths per thousand live births (Table 2). Table 3 shows that the highest infant mortality rate among the LHBs in Wales was 8.5 deaths per thousand live births in Monmouthshire. However, the small number of infant deaths in each area mean that differences between years, or between areas in any one year, are often due to chance.

Live births and birthweight

There were 690,013 live births in England and Wales in 2007, compared with 669,601 in 2006. This is a rise of 3.0 per cent and the sixth successive increase in the annual number of live births.

Table 2 shows the number of births and the proportions of low and very low birthweight babies for England and Wales, and strategic health authorities in England, in 2007. Of those live births with a stated birthweight in England and Wales, 7.2 per cent had a low birthweight (under 2,500 grams) and 1.2 per cent had a very low birthweight (under 1,500 grams). The corresponding percentages in 2006 were 7.6 and 1.2 respectively.

Table 2 Births, perinatal and infant mortality statistics, 2007

England and Wales, and Government Office Regions and Strategic Health Authorities in England

Area	Numbers					Mortality rates				Percentage of live births with a stated birthweight	
	Births		Deaths								
	Live births	Stillbirths[p]	Under 1 week[p]	Under 4 weeks	Under 1 year	Perinatal[1p]	Neonatal[2]	Post-neonatal[1]	Infant[2]	Under 1,500g	Under 2,500g
ENGLAND AND WALES[3]	**690,013**	**3,582**	**1,770**	**2,282**	**3,345**	**7.7**	**3.3**	**1.5**	**4.8**	**1.2**	**7.2**
ENGLAND	**655,357**	**3,398**	**1,681**	**2,153**	**3,127**	**7.7**	**3.3**	**1.5**	**4.8**	**1.2**	**7.2**
NORTH EAST	**29,582**	**147**	**69**	**89**	**139**	**7.3**	**3.0**	**1.7**	**4.7**	**1.0**	**7.2**
North East	29,582	147	69	89	139	7.3	3.0	1.7	4.7	1.0	7.2
NORTH WEST	**85,947**	**475**	**207**	**280**	**433**	**7.9**	**3.3**	**1.8**	**5.0**	**1.1**	**7.3**
North West	85,947	475	207	280	433	7.9	3.3	1.8	5.0	1.1	7.3
YORKSHIRE AND THE HUMBER	**64,191**	**375**	**190**	**253**	**362**	**8.8**	**3.9**	**1.7**	**5.6**	**1.3**	**7.8**
Yorkshire and the Humber	64,191	375	190	253	362	8.8	3.9	1.7	5.6	1.3	7.8
EAST MIDLANDS	**52,482**	**234**	**151**	**187**	**276**	**7.3**	**3.6**	**1.7**	**5.3**	**1.2**	**7.2**
East Midlands	52,482	234	151	187	276	7.3	3.6	1.7	5.3	1.2	7.2
WEST MIDLANDS	**70,098**	**377**	**263**	**317**	**415**	**9.1**	**4.5**	**1.4**	**5.9**	**1.4**	**8.5**
West Midlands	70,098	377	263	317	415	9.1	4.5	1.4	5.9	1.4	8.5
EAST	**69,311**	**307**	**181**	**211**	**299**	**7.0**	**3.0**	**1.3**	**4.3**	**1.1**	**6.6**
East of England	69,311	307	181	211	299	7.0	3.0	1.3	4.3	1.1	6.6
LONDON	**125,505**	**777**	**286**	**387**	**571**	**8.4**	**3.1**	**1.5**	**4.5**	**1.3**	**7.5**
London	125,505	777	286	387	571	8.4	3.1	1.5	4.5	1.3	7.5
SOUTH EAST	**101,238**	**467**	**204**	**268**	**394**	**6.6**	**2.6**	**1.2**	**3.9**	**1.0**	**6.5**
South East Coast	50,453	234	100	129	198	6.6	2.6	1.4	3.9	0.9	6.4
South Central	50,785	233	104	139	196	6.6	2.7	1.1	3.9	1.1	6.7
SOUTH WEST	**57,003**	**239**	**130**	**161**	**238**	**6.4**	**2.8**	**1.4**	**4.2**	**0.9**	**6.4**
South West	57,003	239	130	161	238	6.4	2.8	1.4	4.2	0.9	6.4
WALES	**34,414**	**171**	**81**	**116**	**182**	**7.3**	**3.4**	**1.9**	**5.3**	**1.0**	**7.3**
Normal residence outside England and Wales	242	13	8	13	36	82.4	*53.7*	95.0	148.8	9.3	24.9

1 Per 1,000 live births and stillbirths.
2 Per 1,000 live births.
3 Including births and deaths to persons normally resident outside England and Wales.
p provisional.

Table 3 **Live births, perinatal and infant mortality statistics, 2007**

Local Health Boards in Wales

Area	Numbers				Mortality rates			Percentage of live births with a stated birthweight	
	Live births	Perinatal deaths[1P]	Neonatal deaths[2]	Infant deaths[3]	Perinatal[4P]	Neonatal[5]	Infant[5]	Under 1,500g	Under 2,500g
WALES	**34,414**	**252**	**116**	**182**	**7.3**	**3.4**	**5.3**	**1.0**	**7.3**
Anglesey	779	*	2	3	*	*2.6*	*3.9*	0.6	6.4
Gwynedd	1,255	8	4	7	*6.4*	*3.2*	*5.6*	0.7	6.1
Conwy	1,107	13	8	9	*11.7*	*7.2*	*8.1*	1.4	8.3
Denbighshire	1,049	6	1	3	*5.7*	*1.0*	*2.9*	0.8	6.2
Flintshire	1,743	11	7	10	*6.3*	*4.0*	*5.7*	0.9	7.1
Wrexham	1,604	14	6	7	*8.7*	*3.7*	*4.4*	1.1	6.2
Powys Teaching	1,303	9	4	11	*6.9*	*3.1*	*8.4*	0.8	6.5
Ceredigion	673	*	1	2	*	*1.5*	*3.0*	1.0	5.5
Pembrokeshire	1,254	9	3	5	*7.1*	*2.4*	*4.0*	0.8	6.8
Carmarthenshire	1,947	18	9	10	*9.2*	*4.6*	*5.1*	1.2	6.9
Swansea	2,587	26	6	11	10.0	*2.3*	*4.3*	0.8	7.6
Neath Port Talbot	1,527	12	3	6	*7.8*	*2.0*	*3.9*	0.8	7.7
Bridgend	1,611	7	8	9	*4.3*	*5.0*	*5.6*	1.7	7.3
Vale of Glamorgan	1,446	9	3	7	*6.2*	*2.1*	*4.8*	0.6	6.1
Cardiff	4,416	34	17	24	7.7	*3.8*	5.4	1.1	7.7
Rhondda Cynon Taff Teaching	2,878	18	15	22	*6.2*	*5.2*	7.6	1.2	7.7
Merthyr Tydfil	721	6	3	4	*8.3*	*4.2*	*4.8*	1.5	9.3
Caerphilly Teaching	2,069	15	5	10	*7.2*	*2.4*	*4.8*	1.1	7.5
Blaenau Gwent	769	7	2	3	*9.0*	*2.6*	*3.9*	1.8	10.0
Torfaen	1,041	9	3	5	*8.6*	*2.9*	*4.8*	0.9	6.8
Monmouthshire	822	6	3	7	*7.3*	*3.6*	*8.5*	0.9	6.2
Newport	1,813	7	3	7	*3.9*	*1.7*	*3.9*	1.1	8.2

1 Stillbirths and deaths at ages under 1 week.
2 Deaths at ages under 4 weeks.
3 Deaths at ages under 1 year.
4 Per 1,000 live and stillbirths.
5 Per 1,000 live births.
* For perinatal deaths, some counts and rates have been suppressed to protect confidentiality.
p provisional.

Low birthweight is one of the known risk factors for infant deaths.[1] Among the SHAs in England, West Midlands had the highest proportions of very low birthweight babies, 1.4 per cent, as well as having the highest infant mortality rate (Table 2). West Midlands also had the highest proportion of low birthweight babies with 8.5 per cent of babies weighing under 2,500 grams. The SHAs with the lowest proportion of low birthweight babies were South East Coast and South West with 6.4 per cent. These two SHAs also had the lowest proportion of very low birthweight babies with 0.9 per cent.

Table 3 shows that among the LHBs of Wales in 2007, the percentage of low birthweight babies was highest in Blaenau Gwent (10.0 per cent) and lowest in Ceredigion (5.5 per cent). The proportion of very low birthweight babies ranged from 0.6 per cent in both Anglesey and Vale of Glamorgan, to 1.8 per cent in Blaenau Gwent.

Background Notes

Statistics in the report

Although the live birth numbers are based on births occurring in 2007, the mortality data here are based on deaths registered in 2007. Additionally, in Table 1 numbers of deaths for 1993 to 2006 are based on occurrences in these years, while numbers for years prior to 1993 are based on registrations.

Mortality rates in Tables 2 and 3 that are calculated from fewer than 20 deaths are distinguished by italic type as a warning to the user that their reliability may be affected by the small number of events.

Areal statistics in this report are derived from the usual residence at the time of birth or death. If the usual residence was outside England and Wales, these events are included in the aggregate for 'England and Wales', but excluded from the figures for individual health areas and GORs.

Recording of birthweight

Since 1975 the Office for National Statistics (ONS), formerly the Office of Population, Censuses and Surveys (OPCS) has obtained the birthweight of a baby from information provided to the registrar of births and deaths by the local health services. In 2007, birthweight was recorded for 99 per cent of all live births.

Legal definition of stillbirths

On 1 October 1992 the legal definition of a stillbirth was changed from a baby born dead after 28 or more weeks completed gestation to one born dead after 24 or more weeks completed gestation. This means that perinatal and stillbirth data for 2007 can only be compared with data from 1993 onwards.

General

More details on the above, and on other aspects of stillbirth and infant mortality data, can be found in the ONS annual reference volume *Mortality statistics: childhood, infant and perinatal 2006*, series DH3 no. 39, published in July 2008.[2]

References

1. Office for National Statistics (2007) 'Report: Infant and perinatal mortality by social and biological factors, 2006', *Health Statistics Quarterly* **36**, 84–88. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
2. Office for National Statistics (2008) *Mortality statistics: childhood, infant and perinatal 2006*, series DH3 no. 39. Available on the National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305

Other population and health articles, publications and data

Population Trends 133

Publication September 2008

Planned articles:

- Home births in the UK, 1955–2006
- The Development of a Postcode Best Fit methodology for producing Population Estimates for different geographies
- Have national trends in fertility between 1986 and 2006 occurred evenly across England and Wales?

Reports:

- Divorces in England and Wales during 2007
- Marriages abroad 2002–07
- Sub-national population projections for local authorities in Wales
- Internal migration estimates for local and unitary authorities in England and Wales, year to mid-2007
- Live births in England and Wales, 2007: area of residence
- Death registrations in England and Wales, 2007: area of residence

Annual updates

- Civil Partnerships in 2006

Health Statistics Quarterly 40

Publication November 2008

Planned articles:

- Regional differences in inequalities in male mortality, England and Wales, 2001–03
- Geographical trends in infant mortality: England and Wales, 1970–2006
- Death certification following MRSA bacteraemia, England, 2004–05

Reports:

- Infant and perinatal mortality by social and biological factors, 2007
- Life expectancy at birth and at 65 by local areas in the United Kingdom, 2005–07
- Health expectancies in the UK and constituent countries, 2005

Forthcoming Annual Reference Volumes:

Title	Planned publication
Conceptions 2006	October 2008
Deaths registered in 2007 in England and Wales (DR07)	October 2008