Report:

Infant and perinatal mortality in England and Wales by social and biological factors, 2008

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Key findings

- Almost half of all infant deaths (48 per cent) occurred among very low birthweight babies (under 1,500 grams)
- The infant mortality rate was highest among babies of mothers aged under 20 (6.5 deaths per 1,000 live births) whereas the stillbirth and perinatal mortality rates were highest among babies of mothers aged 40 and over (7.3 and 10.0 per 1,000 total births respectively)
- Infant mortality rates were 50 per cent higher in babies of mothers born in the New Commonwealth compared to babies of mothers born in England and Wales (6.6 and 4.4 deaths per 1,000 live births respectively)
- The infant mortality rate for babies with fathers in routine occupations (NS-SEC group 7) was twice that for babies with fathers in the higher managerial occupations (NS-SEC group 1) (5.5 and 2.8 deaths per 1,000 live births respectively)

The data used in this report are all infant deaths and stillbirths which occurred in the stated year, and the annual totals of births which occurred for that year. This report focuses on the deaths which have been successfully linked to their corresponding birth records, to make social and biological factors available for analyses.

Results

In 2008, there were 3,281 infant deaths in England and Wales of which 3,220 (98 per cent) were linked to their corresponding birth records. Of the 61 records that were not linked, 32 babies were born outside England and Wales (and therefore not registered in England and Wales) and 29 were not linked because no record of the birth could be found. The linkage rate for 2008 is comparable with that for previous years. Table 1 shows comparable figures for 1998 to 2007.

In 2008, of all the linked infant deaths 1,709 (53 per cent) were early neonates, 2,225 (69 per cent) were neonatal deaths and 995 (31 per cent) were postneonatal deaths. (See Box One for definitions). The infant mortality rates for very low birthweight babies (under 1,500 grams) and

Table 1 Infant deaths and infant mortality rates: all and linked deaths, 1998–2008¹

England and Wales										Numbers and rates					
Year	Numbers								Rates ³						
	Births ²		Deaths ²												
	Live births	Stillbirths	Neonatal		Postneonatal		Infant		Neonatal		Postneonatal		Infant		
All			Linked	All	Linked	All	Linked	All	Linked	All	Linked	All	Linked		
1998	635,921	3,418	2,418	2,401	1,207	1,156	3,625	3,557	3.8	3.8	1.9	1.8	5.7	5.6	
1999	621,767	3,303	2,435	2,401	1,186	1,147	3,621	3,548	3.9	3.9	1.9	1.8	5.8	5.7	
2000	604,420	3,214	2,335	2,307	1,042	1,018	3,377	3,325	3.9	3.8	1.7	1.7	5.6	5.5	
2001	594,537	3,157	2,137	2,107	1,103	1,065	3,240	3,172	3.6	3.5	1.9	1.8	5.4	5.3	
2002	596,131	3,377	2,126	2,101	1,001	978	3,127	3,079	3.6	3.5	1.7	1.6	5.2	5.2	
2003	621,548	3,591	2,264	2,229	1,042	1,014	3,306	3,243	3.6	3.6	1.7	1.6	5.3	5.2	
2004	639,662	3,608	2,209	2,185	1,009	972	3,218	3,157	3.5	3.4	1.6	1.5	5.0	4.9	
2005	645,881	3,484	2,227	2,197	1,032	1,011	3,259	3,208	3.4	3.4	1.6	1.6	5.0	5.0	
2006	669,527	3,611	2,325	2,292	996	958	3,321	3,250	3.5	3.4	1.5	1.4	5.0	4.9	
2007	689,893	3,600	2,248	2,207	1,016	982	3,264	3,189	3.3	3.2	1.5	1.4	4.7	4.6	
2008	708,644	3,621	2,260	2,225	1,021	995	3,281	3,220	3.2	3.1	1.4	1.4	4.6	4.5	

¹ Figures for 2008 are provisional.

² Births and deaths are occurrences within each year.

³ Neonatal, postneonatal and infant deaths per 1,000 live births.

Box one

Definitions used in infant mortality statistics

Stillbirth	born after 24 or more weeks completed gestation and which did not, at any time, breathe or show signs of life
Early neonatal	under seven days after live birth
Perinatal	stillbirths and early neonatal deaths
Neonatal	under 28 days after live birth
Postneonatal	at least 28 days but under one year after live birth
Infant	under a year after live birth
Rates	Stillbirths and perinatal mortality rates reported per 1,000 total births (live and stillbirths) Early neonatal, neonatal, postneonatal and infant mortality rates reported per 1,000 live births

low birthweight babies (under 2,500 grams) were 177.3 and 39.6 deaths per 1,000 live births respectively compared with a rate of 1.6 among babies of normal birthweight (2,500 grams and over) (Table 2). Forty-eight per cent of infant deaths occurred among very low birthweight babies.

Table 3 shows gestational age and birthweight for stillbirths. The majority of very low birthweight babies (under 1,500 grams) were also of low gestational age (24–27 weeks). These 892 stillborn babies represented 95 per cent of all stillbirths delivered at 24–27 weeks and 56 per cent of all very low birthweight stillbirths.

Infant deaths varied by mother's age at the baby's birth (Table 4). The infant mortality rate was highest among babies of mothers aged under 20 (6.5 deaths per 1,000 live births) and lowest among babies with mothers in the 30–34 age group (3.8 per 1,000 live births). Babies of mothers aged 40 and over had the highest stillbirth and perinatal mortality rates at 7.3 and 10.0 per 1,000 total births respectively.

Table 5 shows live births, stillbirths and infant deaths by the mother's country of birth (see Box Two for country groupings). Infant mortality rates were 50 per cent higher in babies of mothers born in the New Commonwealth compared to babies of mothers born in England and Wales (6.6 and 4.4 deaths per 1,000 live births respectively). Within the New Commonwealth, infant mortality rates were highest in babies of mothers born in the Caribbean (9.5), Pakistan (8.7) and certain African countries (the Rest of Africa (8.0) and East Africa (7.0)): all rates are deaths per 1,000 live births.

Table 2 Live births, stillbirths and infant deaths by birthweight, 2008

England and Wales							Numbers and rates				
Birthweight (grams)	Numbers						Rates ¹				
	Births		Deaths								
	Live births	Stillbirths	Early neonatal	Neonatal	Postneonatal	Infant	Stillbirth	Perinatal	Neonatal	Postneonatal	Infant
All	708,644	3,621	1,709	2,225	995	3,220	5.1	7.5	3.1	1.4	4.5
Under 1,500	8,731	1,604	1,040	1,289	259	1,548	155.2	255.8	147.6	29.7	177.3
1,500–1,999	10,058	390	92	131	76	207	37.3	46.1	13.0	7.6	20.6
2,000–2,499	31,881	403	90	136	118	254	12.5	15.3	4.3	3.7	8.0
2,500–2,999	116,338	464	122	173	183	356	4.0	5.0	1.5	1.6	3.1
3,000–3,499	251,066	393	132	198	200	398	1.6	2.1	0.8	0.8	1.6
3,500 and over	285,161	340	113	158	137	295	1.2	1.6	0.6	0.5	1.0
Not stated	5,409	27	120	140	22	162	5.0	27.0	25.9	4.1	30.0

1 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths per 1,000 live births.

Box two

Mother's country of birth

United Kingdom

England, Wales, Scotland, Northern Ireland

Elsewhere in United Kingdom

Channel Islands, Isle of Man, UK (part not stated)

Outside United Kingdom

Irish Republic Irish Republic, Ireland (part not stated)

Other European Union Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden

Rest of Europe All other European countries including Turkey, Russia, Ukraine and the rest of the former Soviet republics

Commonwealth

Australia, Canada and New Zealand

New Commonwealth:

Asia : Bangladesh, India, Pakistan

East Africa: Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia

Southern Africa: Botswana, Lesotho, Namibia, South Africa, Swaziland

Rest of Africa: Cameroon, The Gambia, Ghana, Mauritius, Nigeria, Seychelles, Sierra Leone

Far East: Brunei, Malaysia, Singapore

Caribbean: Anguilla, Antigua, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St Kitts and Nevis, St Lucia, St Vincent, Trinidad and Tobago, Turks and Caicos Islands

Rest of the New Commonwealth: Cook Islands, Falkland Islands, Fiji, Gibraltar, Kiribati, Maldives, Nauru, Papua New Guinea, St Helena Solomon Islands, Sri Lanka, Tonga, Tuvalu, Vanuatu, Western Samoa, British Indian Ocean Territory

Rest of the World and not stated includes United States of America

Perinatal mortality rates were also higher in babies of mothers born in the New Commonwealth compared to babies of mothers born in England and Wales (11.2 and 7.0 deaths per 1,000 total births respectively). Within the New Commonwealth, perinatal mortality rates were highest in babies of mothers born in the Caribbean (15.1), certain African countries (the Rest of Africa (14.1) and East Africa (12.0)), Pakistan (11.7) and Bangladesh (10.6): all rates are deaths per 1,000 total births. The highest postneonatal death rate was for babies of mothers born in Pakistan (3.9 per 1,000 live births) compared to the overall postneonatal mortality rate of 1.4 per 1,000 live births.

Registration type is determined from the child's birth records (Table 6) with four categories: within lawful marriage, jointly registered by both parents outside of marriage at the same address, joint registration with parents at different addresses and births solely registered by the mother. The registration types with the highest infant mortality rates were sole registered births (6.9 per 1,000 live births) and births outside marriage jointly registered by both parents giving different addresses (6.2 deaths per 1,000 live births). Parity, the number of the mother's previous live-born and stillborn children, is recorded only for married women. Of this group, babies born to women with three or more previous children had a high infant mortality at 5.9 deaths per 1,000 live births.

Box three

National Statistics Socio-Economic Classification (NS-SEC): eight analytic class version, with examples

1 Higher managerial and professional occupations

Directors and chief executives of major organisation, civil engineers, medical practitioners, IT strategy and planning professionals, legal professionals, architects, senior officials in national and local government

2 Lower managerial and professional occupations

Teachers in primary and secondary schools, quantity surveyors, public service administrative professionals, social workers, nurses, IT technicians

3 Intermediate occupations

Graphics designers, medical and dental technicians, Civil Service administrative officers and local government clerical officers, counter clerks, school and company secretaries

4 Small employers and own account workers

Hairdressing and beauty salon proprietors, shopkeepers, dispensing opticians in private practice, farmers, self-employed decorators

5 Lower supervisory and technical occupations

Bakers and flour confectioners, catering supervisor, head waitress, postal supervisor, sales assistant supervising others

6 Semi-routine occupations

Retail assistants, catering assistants, clothing cutters, dressmaker, traffic wardens, veterinary nurses and assistants, shelf fillers

7 Routine occupations

Hairdressing employees, floral arrangers, sewing machinists, bar staff, cleaners and domestics

Other

Full-time students, never worked, long-term unemployed, inadequately described, not classifiable for other reasons

Source: NS-SEC User Manual, Office for National Statistics²

Table 3

Stillbirths: gestation by birthweight, 2008

England and Wales		Numbers					
Birthweight (grams)	All	Gestation (weeks)					
		24–27	28–31	32–35	36–39	40 and over	Not stated
All	3,621	941	612	639	932	490	7
Under 1,000	1,120	807	241	49	17	5	1
1,000–1,499	484	85	250	130	19	0	–
1,500–1,999	390	8	93	214	70	5	–
2,000–2,499	403	7	21	166	176	33	–
2,500–2,999	464	5	3	58	294	104	–
3,000–3,499	393	5	–	14	214	158	2
3,500 and over	340	15	1	5	135	184	–
Not stated	27	9	3	3	7	1	4

Table 4

Live births, stillbirths and infant deaths by mother's age, 2008

England and Wales							Numbers and rates				
Mother's age	Numbers						Rates ¹				
	Births		Deaths								
	Live births	Stillbirths	Early neonatal	Neonatal	Postneonatal	Infant	Stillbirth	Perinatal	Neonatal	Postneonatal	Infant
All	708,644	3,621	1,709	2,225	995	3,220	5.1	7.5	3.1	1.4	4.5
Under 20	44,683	249	123	178	112	290	5.5	8.3	4.0	2.5	6.5
20–24	135,959	768	350	469	247	716	5.6	8.2	3.4	1.8	5.3
25–29	192,945	868	454	601	263	864	4.5	6.8	3.1	1.4	4.5
30–34	192,424	910	433	539	198	737	4.7	6.9	2.8	1.0	3.8
35–39	116,216	632	276	343	129	472	5.4	7.8	3.0	1.1	4.1
40 and over	26,417	194	73	95	46	141	7.3	10.0	3.6	1.7	5.3

1 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths per 1,000 live births.

Table 5

Live births, stillbirths and infant deaths by mother's country of birth, 2008

England and Wales							Numbers and rates				
Country of birth	Numbers						Rates ¹				
	Births		Deaths								
	Live births	Stillbirths	Early neonatal	Neonatal	Postneonatal	Infant	Stillbirth	Perinatal	Neonatal	Postneonatal	Infant
All	708,644	3,621	1,709	2,225	995	3,220	5.1	7.5	3.1	1.4	4.5
United Kingdom	537,807	2,516	1,240	1,638	717	2,355	4.7	7.0	3.0	1.3	4.4
England and Wales	527,768	2,475	1,212	1,601	708	2,309	4.7	7.0	3.0	1.3	4.4
Scotland	7,270	30	18	23	5	28	4.1	6.6	3.2	0.7	3.9
Northern Ireland	2,393	9	8	12	4	16	3.7	7.1	5.0	1.7	6.7
Elsewhere	376	2	2	2	—	2	5.3	10.6	5.3	—	5.3
Outside the United Kingdom	170,837	1,105	469	587	278	865	6.4	9.2	3.4	1.6	5.1
Irish Republic	3,063	17	6	10	4	14	5.5	7.5	3.3	1.3	4.6
Other European Union	40,387	185	70	83	41	124	4.6	6.3	2.1	1.0	3.1
Rest of Europe	7,798	38	14	17	10	27	4.8	6.6	2.2	1.3	3.5
Commonwealth											
Australia, Canada and New Zealand	4,766	18	13	14	6	20	3.8	6.5	2.9	1.3	4.2
New Commonwealth	70,590	549	246	310	156	466	7.7	11.2	4.4	2.2	6.6
Asia											
Bangladesh	8,631	65	27	31	15	46	7.5	10.6	3.6	1.7	5.3
India	12,455	85	28	35	15	50	6.8	9.0	2.8	1.2	4.0
Pakistan	18,821	158	65	90	74	164	8.3	11.7	4.8	3.9	8.7
East Africa	4,151	30	20	24	5	29	7.2	12.0	5.8	1.2	7.0
Southern Africa	4,776	25	7	9	5	14	5.2	6.7	1.9	1.0	2.9
Rest of Africa	13,052	127	59	74	30	104	9.6	14.1	5.7	2.3	8.0
Far East	1,456	6	6	6	1	7	4.1	8.2	4.1	0.7	4.8
Caribbean	3,472	27	26	28	5	33	7.7	15.1	8.1	1.4	9.5
Rest of the New Commonwealth	3,776	26	8	13	6	19	6.8	8.9	3.4	1.6	5.0
Rest of World and not stated	44,233	298	120	153	61	214	6.7	9.4	3.5	1.4	4.8

1 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths per 1,000 live births.

Note: Rates based on fewer than 10 deaths are in italics.

Table 6

Live births, stillbirths and infant deaths by marital status, parity (within marriage) and type of registration, 2008

England and Wales							Numbers and rates				
Marital status Parity/type of registration	Numbers						Rates ¹				
	Births		Deaths								
	Live births	Stillbirths	Early neonatal	Neonatal	Postneonatal	Infant	Stillbirth	Perinatal	Neonatal	Postneonatal	Infant
All	708,644	3,621	1,709	2,225	995	3,220	5.1	7.5	3.1	1.4	4.5
Inside marriage											
All	387,916	1,873	876	1,112	478	1,590	4.8	7.1	2.9	1.2	4.1
0	162,761	877	433	545	186	731	5.4	8.0	3.3	1.1	4.5
1	138,146	534	241	310	154	464	3.9	5.6	2.2	1.1	3.4
2	55,202	250	108	132	76	208	4.5	6.5	2.4	1.4	3.8
3 and over	31,807	212	94	125	62	187	6.6	9.6	3.9	1.9	5.9
Outside marriage											
All	320,728	1,748	833	1,113	517	1,630	5.4	8.0	3.5	1.6	5.1
Joint registration/same address	210,040	1,111	503	657	254	911	5.3	7.6	3.1	1.2	4.3
Joint registration/different address	65,238	338	200	269	138	407	5.2	8.2	4.1	2.1	6.2
Sole registration	45,450	299	130	187	125	312	6.5	9.4	4.1	2.8	6.9

1 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths per 1,000 live births.

Table 7 shows infant deaths by father's occupational status across eight classes (see Box Three). The infant mortality rate for babies with fathers in routine occupations (NS-SEC group 7) was twice that for babies with fathers in higher managerial occupations (NS-SEC group 1) (5.5 and 2.8 deaths per 1,000 live births respectively). The figures in Table 7 exclude 'sole registrations' where only details of the mother are recorded. Less than 7 per cent of all births are sole registrations and less than 10 per cent of infant deaths are to sole registered births.

In England and Wales, neonatal deaths are registered using a special perinatal death certificate which enables reporting of relevant diseases or conditions in both the infant and the mother. For postneonatal deaths, a single underlying cause of death can be reported as for adults. ONS has developed a hierarchical classification system producing broad cause groups to enable direct comparison of neonatal and postneonatal deaths¹. Table 8 shows that factors operating during pregnancy (congenital anomalies, antepartum infections and immaturity related conditions) were the most common cause of infant deaths (72.5 per cent) and neonatal deaths (85.8 per cent). For postneonatal deaths, less than half were related to factors operating during pregnancy (42.8 per cent), while 18.9 per cent were 'other conditions', 15.3 per cent were from infections and 13.7 per cent were sudden infant deaths.

The data

The figures for 2008 presented in this report relate to live births, stillbirths and infant deaths that occurred in England and Wales in 2008 and comprise the infant deaths which had been linked to their corresponding birth records by 22 September 2009. These figures are provisional. Figures reported in Table 1 for 1998 to 2007 are final figures.

Only infant deaths that have been linked to their corresponding birth records are included as linkage enables analysis of infant and perinatal deaths by risk factors collected at birth registration. These include birthweight, mother's age at birth of child, mother's country of birth, marital status, parity and father's socio-economic status based on his occupation. Birthweight information was not available for 0.8 per cent of live births and 0.7 per cent of stillbirths.

The figures in this report differ slightly from those presented in the 'Infant and perinatal mortality by health areas in England and Wales, 2008' report published in this issue of *Health Statistics Quarterly* which are based on death registrations for 2008. The live births and stillbirths figures also differ slightly: this report is based on occurrences only within each year while the 'health areas' report uses birth occurrences plus late registrations from the previous year.

Table 7

Live births,¹ stillbirths and infant deaths² by National Statistics Socio-economic Classification (NS-SEC), 2008

England and Wales											Numbers and rates	
NS-SEC	Numbers						Rates ³					
	Births		Deaths									
	Live births	Stillbirths	Early neonatal	Neonatal	Postneo-natal	Infant	Stillbirth	Perinatal	Neonatal	Postneo-natal	Infant	
All ⁴	663,194	3,322	1,579	2,038	870	2,908	5.0	7.4	3.1	1.3	4.4	
Inside marriage												
All ⁵	387,916	1,873	876	1,112	478	1,590	4.8	7.1	2.9	1.2	4.1	
1.1 Large employers and higher managerial	3,718	109	60	74	27	101	2.9	4.5	2.0	0.7	2.7	
1.2 Higher professional	5,201	206	102	132	36	168	3.9	5.9	2.5	0.7	3.2	
2 Lower managerial and professional	9,096	377	168	210	78	288	4.1	6.0	2.3	0.9	3.2	
3 Intermediate	2,332	127	61	78	39	117	5.4	8.0	3.3	1.7	5.0	
4 Small employers and own-account workers	5,317	223	103	124	74	198	4.2	6.1	2.3	1.4	3.7	
5 Lower supervisory and technical	4,199	187	85	107	37	144	4.4	6.4	2.5	0.9	3.4	
6 Semi-routine	3,801	247	111	140	63	203	6.5	9.4	3.7	1.7	5.3	
7 Routine	3,474	246	104	148	55	203	7.0	10.0	4.3	1.6	5.8	
Other ⁶	1,753	149	58	72	44	116	8.4	11.7	4.1	2.5	6.6	
Outside marriage joint registration												
All ⁵	275,278	1,449	703	926	392	1,318	5.2	7.8	3.4	1.4	4.8	
1.1 Large employers and higher managerial	999	35	20	23	9	32	3.5	5.5	2.3	0.9	3.2	
1.2 Higher professional	1,220	52	24	29	9	38	4.2	6.2	2.4	0.7	3.1	
2 Lower managerial and professional	4,173	179	80	98	38	136	4.3	6.2	2.3	0.9	3.3	
3 Intermediate	1,360	71	41	49	17	66	5.2	8.2	3.6	1.3	4.9	
4 Small employers and own-account workers	3,851	177	82	109	38	147	4.6	6.7	2.8	1.0	3.8	
5 Lower supervisory and technical	4,415	198	94	132	42	174	4.5	6.6	3.0	1.0	3.9	
6 Semi-routine	3,810	225	125	170	60	230	5.9	9.1	4.5	1.6	6.0	
7 Routine	5,334	320	145	194	86	280	6.0	8.7	3.6	1.6	5.2	
Other ⁶	2,290	190	65	80	63	143	8.2	11.0	3.5	2.8	6.2	

1 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. Figures for live births in NS-SEC groups are a 10 per cent sample coded for father's occupation.

2 NS-SEC based on father's occupation at death registration.

3 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths 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.

6 Students; occupations inadequately described; occupations not classifiable for other reasons; never worked and long-term unemployed.

Note: Rates based on fewer than 10 deaths are in italics.

Table 8

Live births, stillbirths and infant deaths by ONS cause groups, 2008

England and Wales

Numbers and rates

Cause group	Numbers						Rates ¹				
	Births		Deaths								
	Live births	Stillbirths	Early neo-natal	Neonatal	Postneonatal	Infant	Stillbirth	Perinatal	Neonatal	Postneonatal	Infant
All causes	708,644	3,621	1,709	2,225	995	3,220	5.1	7.5	3.1	1.4	4.5
Congenital anomalies		523	408	562	281	843	0.7	1.3	0.8	0.4	1.2
Antepartum infections		33	40	84	7	91	–	0.1	0.1	–	0.1
Immaturity related conditions		:	1,036	1,263	138	1,401	:	1.5	1.8	0.2	2.0
Asphyxia, anoxia or trauma (intrapartum)		98	169	197	22	219	0.1	0.4	0.3	–	0.3
External conditions		7	4	5	46	51	–	–	–	0.1	0.1
Infections		:	14	32	152	184	:	–	–	0.2	0.3
Other specific conditions		224	11	14	25	39	0.3	0.3	–	–	0.1
Asphyxia, anoxia or trauma (antepartum)		901	:	:	:	:	1.3	1.3	:	:	:
Remaining antepartum deaths		1,735	:	:	:	:	2.4	2.4	:	:	:
Sudden infant deaths		:	5	26	136	162	:	–	–	0.2	0.2
Other conditions		100	22	42	188	230	0.1	0.2	0.1	0.3	0.3

: not applicable – less than 0.05.

1 Stillbirths and perinatal deaths per 1,000 live births and stillbirths. Neonatal, postneonatal and infant deaths per 1,000 live births.

References

- 1 Dattani N and Rowan S (2002) 'Causes of neonatal deaths and stillbirths: a new hierarchical classification in ICD-10', *Health Statistics Quarterly* 15, 16–22. Available on the Office for National Statistics website at:
www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
- 2 Office for National Statistics (2001) The National Statistics Socio-economic Classification. Available on the Office for National Statistics website:
www.ons.gov.uk/about-statistics/classifications/current/ns-sec/index.html
- 3 Office for National Statistics (2009) *Mortality statistics: Childhood, infant and perinatal, 2007*, Series DH3 no. 40. Details of the associated ICD-10 codes allocated to neonatal and postneonatal deaths can be found in Annex K and Annex L, and description of the ONS cause group classification system on page xix. Available on the Office for National Statistics website at:
www.statistics.gov.uk/statbase/Product.asp?vlnk=6305