Report:

Infant and perinatal mortality by health areas in England and Wales, 2008

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Key findings

- There were 3,369 infant deaths (deaths under one year) registered in England and Wales in 2008, giving an infant mortality rate of 4.8 per thousand live births
- In 2008, there were 3,617 stillbirths and 1,763 deaths at ages under seven days registered in England and Wales, giving a total of 5,380 perinatal deaths
- The neonatal mortality rate (deaths under 28 days) decreased to 3.2 per thousand live births in 2008, from 3.3 in 2007. The postneonatal mortality rate (deaths between 28 days and one year) remained at 1.5 per thousand live births

This report gives statistics on infant deaths registered in 2008, and live births and stillbirths occurring in 2008, in England and Wales, for residents of each Government Office Region (GOR) and Strategic Health Authority (SHA) in England and Local Health Board (LHB) in Wales.

The figures in this report differ slightly from those presented in the 'Infant and perinatal mortality in England and Wales by social and biological factors, 2008' report published in this issue of *Health Statistics Quarterly* which are based on provisional numbers of infant deaths which occurred in England and Wales in 2008. The live births and stillbirths figures also differ slightly: this report used birth occurrences plus late registrations from the previous years, while the 'social and biological factors' report uses occurrences only within each year.

The stillbirth rate decreased from 5.2 per thousand live births and stillbirths in 2007 to 5.1 per thousand live births and stillbirths in 2008. The perinatal

Table 1 Live births, stillbirths and infant deaths, 1978–2008

England and Wales

Year	Number of deaths ²						Stillbirth rate	Mortality rates ³			
	Live births	Stillbirths ¹	Early neonatal	Neonatal	Postneonatal	Infant		Perinatal	Neonatal	Post-neonatal	Infant
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	3,598	1,745	2,248	1,016	3,264	5.2	7.7	3.3	1.5	4.7
2008	708,711	3,617	1,763	2,299	1,070	3,369	5.1	7.6	3.2	1.5	4.8

1 See Background note 3.

2 Numbers of deaths shown are based on annual occurrences for years 1993 to 2007, and on annual registrations for all other years.

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

Figure 1 Infant mortality rates, 1978–2008

mortality rate also decreased from 7.7 per thousand live births and stillbirths in 2007 to 7.6 per thousand live births and stillbirths in 2008 (Table 1).

Figure 1 shows the infant mortality rate over the period 1978 to 2008 by age at death in the neonatal and postneonatal period. The infant

mortality rate fell by 64 per cent over this period, while the neonatal and postneonatal mortality rates all fell by 63 and 67 per cent respectively. However, the rates of change were not constant over the period, change in the first half of the period being about twice that in the second half.

Geographical variation in infant mortality

There was considerable variation in the infant mortality rate across the health authorities. In 2008, West Midlands had the highest infant mortality rate among the SHAs in England at 6.5 deaths per thousand live births. South East Coast had the lowest at 3.8 deaths per thousand live births (Table 2). The highest infant mortality rate among the LHBs in Wales was 9.5 deaths per thousand live births in Torfaen (Table 3).

Live births and birthweight

There were 708,711 live births in England and Wales in 2008, compared with 690,013 in 2007. This is a rise of 2.7 per cent and the seventh successive increase in the annual number of live births.

Low birthweight is one of the known risk factors for infant deaths.¹ Table 2 shows the number of births and the proportions of low and very low birthweight babies for England and Wales and Strategic

Table 2 Births, perinatal and infant mortality statistics, 2008

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

Area	Numbers					Mortality rates ¹				Percentage of live births with a stated birthweight	
	Births		Deaths								
	Live births	Stillbirths	Early neonatal	Neonatal	Infant	Perinatal	Neonatal	Post-neonatal	Infant	Under 1,500g	Under 2,500g
England and Wales²	708,711	3,617	1,763	2,299	3,369	7.6	3.2	1.5	4.8	1.2	7.2
England	672,809	3,427	1,679	2,177	3,184	7.6	3.2	1.5	4.7	1.2	7.2
North East	30,217	179	68	97	127	8.1	3.2	1.0	4.2	1.3	7.6
North East	30,217	179	68	97	127	8.1	3.2	1.0	4.2	1.3	7.6
North West	88,167	450	239	307	455	7.8	3.5	1.7	5.2	1.2	7.3
North West	88,167	450	239	307	455	7.8	3.5	1.7	5.2	1.2	7.3
Yorkshire and The Humber	66,353	371	159	222	357	7.9	3.3	2.0	5.4	1.2	7.4
Yorkshire and the Humber	66,353	371	159	222	357	7.9	3.3	2.0	5.4	1.2	7.4
East Midlands	54,192	255	150	190	266	7.4	3.5	1.4	4.9	1.2	7.1
East Midlands	54,192	255	150	190	266	7.4	3.5	1.4	4.9	1.2	7.1
West Midlands	71,726	403	269	329	469	9.3	4.6	2.0	6.5	1.3	8.5
West Midlands	71,726	403	269	329	469	9.3	4.6	2.0	6.5	1.3	8.5
East	71,738	304	161	214	314	6.5	3.0	1.4	4.4	1.2	6.5
East of England	71,738	304	161	214	314	6.5	3.0	1.4	4.4	1.2	6.5
London	127,651	730	276	361	545	7.8	2.8	1.4	4.3	1.4	7.6
London	127,651	730	276	361	545	7.8	2.8	1.4	4.3	1.4	7.6
South East	104,023	471	230	292	417	6.7	2.8	1.2	4.0	1.1	6.3
South East Coast	51,565	235	109	138	197	6.6	2.7	1.1	3.8	1.1	6.2
South Central	52,458	236	121	154	220	6.8	2.9	1.3	4.2	1.1	6.5
South West	58,742	264	127	165	234	6.6	2.8	1.2	4.0	1.0	6.2
South West	58,742	264	127	165	234	6.6	2.8	1.2	4.0	1.0	6.2
Wales	35,650	165	76	108	147	6.7	3.0	1.1	4.1	1.8	7.8
Usual residence outside England and Wales	252	25	8	14	38	:	:	:	:	:	:

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

² Including births and deaths to persons normally resident outside England and Wales.

: not applicable

Table 3 Live births, perinatal and infant mortality statistics, 2008

Local Health Boards in Wales

Area	Numbers				Mortality rates ¹			Percentage of live births with a stated birthweight	
	Live births	Perinatal deaths	Neonatal deaths	Infant deaths	Perinatal	Neonatal	Infant	Under 1,500g	Under 2,500g
Wales	35,650	241	108	147	6.7	3.0	4.1	1.8	7.8
Anglesey	780	*	2	4	*	2.6	5.1	2.6	8.2
Gwynedd	1,276	13	4	5	10.1	3.1	3.9	2.6	7.5
Conwy	1,163	7	5	6	6.0	4.3	5.2	2.0	7.9
Denbighshire	1,076	6	4	5	5.6	3.7	4.6	1.8	7.3
Flintshire	1,743	7	6	7	4.0	3.4	4.0	1.6	6.8
Wrexham	1,793	8	4	4	4.4	2.2	2.2	1.4	8.0
Powys Teaching	1,280	*	—	2	*	—	1.6	0.6	7.8
Ceredigion	603	5	1	1	8.2	1.7	1.7	0.8	4.5
Pembrokeshire	1,251	10	5	5	8.0	4.0	4.0	1.5	7.0
Carmarthenshire	1,971	11	3	5	5.6	1.5	2.5	1.0	6.0
Swansea	2,732	16	7	11	5.8	2.6	4.0	1.0	5.9
Neath Port Talbot	1,551	9	5	7	5.8	3.2	4.5	3.9	9.7
Bridgend	1,630	8	2	2	4.9	1.2	1.2	7.3	13.3
Vale of Glamorgan	1,482	16	6	10	10.7	4.0	6.7	2.6	8.4
Cardiff	4,566	41	17	20	8.9	3.7	4.4	1.0	7.1
Rhondda Cynon Taff Teaching	2,908	18	4	7	6.2	1.4	2.4	1.3	8.2
Merthyr Tydfil	781	8	5	5	10.2	6.4	6.4	2.2	8.2
Caerphilly Teaching	2,223	13	7	11	5.8	3.1	4.9	1.8	7.7
Blaenau Gwent	867	5	4	6	5.8	4.6	6.9	1.4	8.7
Torfaen	1,056	10	7	10	9.4	6.6	9.5	2.3	8.3
Monmouthshire	919	6	3	3	6.5	3.3	3.3	1.5	6.4
Newport	1,999	16	7	11	8.0	3.5	5.5	1.5	8.4

¹ Perinatal deaths per 1,000 live births and stillbirths. Neonatal and infant deaths per 1,000 live births.

* For perinatal deaths, some counts and rates have been suppressed to protect confidentiality.

Note: Mortality rates calculated from fewer than 20 deaths are distinguished by italic type as a warning that their reliability as a measure may be affected by the small number of events.

Health Authorities in England in 2008. 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). These percentages are unchanged from 2007.

Among the SHAs in England, London had the highest proportion of very low birthweight babies with 1.4 per cent weighing under 1,500g and West Midlands had the highest proportion of low birthweight babies with 8.5 per cent of babies weighing under 2,500g. The SHAs with the lowest proportion of low birthweight babies were South East Coast and South West with 6.2 per cent. South West also had the lowest proportion of very low birthweight babies with 1.0 per cent.

Table 3 shows that among the Local Health Boards of Wales in 2008, the percentage of low birthweight babies was highest in Bridgend (13 per cent) and lowest in Ceredigion (4.5 per cent). The proportion of very low birthweight babies ranged from 0.6 per cent in Powys Teaching, to 7.3 per cent in Bridgend.

Box one

Definitions used in this report:

Early neonatal death: deaths at ages under seven days

Perinatal deaths: stillbirths plus deaths at ages under seven days

Neonatal deaths: deaths at age under 28 days

Postneonatal deaths: deaths between 28 days and one year

Infant deaths: deaths under one year

Background notes

1. Statistics: although the live birth numbers are based on births occurring in 2008, the mortality data here are based on deaths registered in 2008. Additionally, in Table 1 numbers of deaths for 1993 to 2007 are based on occurrences in these years, while numbers for years prior to 1993 are based on registrations. The mortality rates in Table 3 which have been 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. In Table 2, rates and percentages have been excluded where the usual residence was outside England and Wales.
2. Recording of birthweight: since 1975 the Office for National Statistics (formerly the Office of Population, Censuses and Surveys) has obtained the birthweight of a baby from information provided to the Registrar of Births and Deaths by the local health services. Since 2007, with the introduction of the Registration Online system (RON) for registering births and deaths in some districts, ONS has obtained the birthweight for those babies from the NHS Numbers for Babies record. In 2008, birthweight was recorded for 99.2 per cent of all live births and 65.8 per cent of live birth registrations were recorded on RON.
3. 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 2008 can only be compared with data from 1993 onwards.

4. 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 2007*, Series DH3 no. 40, published in March 2009.²

References

1. Office for National Statistics (2008) 'Report: Infant and perinatal mortality by social and biological factors, 2007', *Health Statistics Quarterly* **40**, 61–65. Available on the Office for National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6725
2. Office for National Statistics (2009) *Mortality statistics: childhood, infant and perinatal 2007*, Series DH3 no. **40**. Available on the Office for National Statistics website at: www.statistics.gov.uk/statbase/Product.asp?vlnk=6305