

A 5 Infant deaths

Many of the factors which are important in the causation of stillbirth are believed to be similar to those which cause death in the first week of life. By convention, the sum of stillbirths and live births who die within the first week of life is used to define perinatal mortality. The denominator for the perinatal mortality rate is the total number of live births and stillbirths in the same year.

Neonatal deaths refer to live born babies who die within the first 28 days of life; postneonatal deaths refer to live born babies who die beyond that period, but within the first year. The denominator for deriving rates for both of these measures is the number of live births in the same year.

Detailed data relating to stillbirths and deaths in the first year of life are derived from the Stillbirth and Infant Death Survey. For this, the General Register Office for Scotland

informs ISD Scotland of all stillbirths and infant deaths. In each instance, a detailed form is despatched to a local coordinator of the survey (usually a paediatrician, obstetrician or midwife) and further details collected. These details allow the cause of death to be classified in different ways. One of the most useful classifications is by obstetric factors and paediatric factors and such information is represented in tables A5.3 and A5.4. Another way of categorising these losses is the FIGO classification.

To allow comparison with live born babies in terms of birthweight and gestation, hospital data (SMR02), which contain more detail than civil registrations, are used as denominator. These data rarely match exactly but the differences are largely unimportant for most statistical purposes.

A 5.1 Perinatal mortality

by sex, health board and deprivation category¹
year ending 31 December

	1990	1995 ²	1996	1997	1998	1998
	Rate per 1000 total births					Number
Total	8.7	9.6	9.2	7.8	8.7	504 ³
Sex						
Male	9.1	10.1	10.0	8.0	9.4	278
Female	8.3	9.2	8.4	7.6	7.9	222
Health Board						
Argyll & Clyde	7.3	9.7	10.4	6.2	8.3	39
Ayrshire & Arran	8.1	12.6	8.6	10.5	6.1	25
Borders	4.1	6.8	6.1	5.3	13.4	14
Dumfries & Galloway	5.0	8.5	10.5	13.2	8.5	13
Fife	7.4	7.7	9.9	7.8	9.0	35
Forth Valley	11.2	11.2	9.0	6.9	6.9	22
Grampian	9.3	6.8	9.2	6.8	9.8	59
Greater Glasgow	9.5	11.9	9.4	7.7	9.6	100
Highland	8.0	6.2	9.6	6.9	7.3	18
Islands	9.5	7.2	3.9	6.5	9.5	7
Lanarkshire	8.4	10.5	10.3	10.1	8.6	57
Lothian	7.7	9.3	8.5	6.7	8.5	75
Tayside	12.2	8.2	8.7	7.5	9.5	40
Deprivation Category¹						
1	*	5.2	7.6	3.7	8.5	25
2	*	6.8	7.4	7.7	8.1	62
3	*	8.3	8.2	7.7	8.8	103
4	*	10.1	10.4	8.1	8.7	119
5	*	12.3	9.1	8.3	9.0	79
6	*	9.9	12.3	8.9	11.7	71
7	*	14.1	11.6	9.5	10.8	41
Singletons	8.0	8.3	8.4	7.1	7.6	426
Multiples	37.6	51.7	37.8	32.0	46.4	78

1 Carstairs Deprivation Categories (Depcat) are based on data collected in the 1991 census. The items included are over-crowding, male unemployment, low social class, and no car. These are combined to derive a composite score for postcode sectors. There are seven categories — one is the least deprived and seven the most deprived.
2 On 1 October 1992 the legal definition of stillbirth changed. This reduced the registrable age from 28 to 24 weeks.

3 Includes four births where sex was undetermined.

Sources : ISD Scotland (SMR2); Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➔ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.

Perinatal deaths¹ by birthweight and gestation

A 5.2

year ending 31 December

	Perinatal deaths					Stillbirths	Early neonatal deaths
	1990	1995 ²	1996	1997 ^r	1998 ^p	1998	1998
	Rates per 1000 total births in range					Number	Number
Birthweight (g)							
All weights	8.7	9.6	9.2	7.8	8.7	351³	153⁴
Under 1000	567.6	684.0	707.9	574.8	618.3	117	79
1000-1499	197.4	175.1	165.2	139.2	157.6	50	11
1500-1999	87.1	56.3	78.6	64.2	63.2	43	11
2000-2499	20.2	28.1	18.8	14.9	19.3	41	7
2500-2999	6.9	5.7	5.9	5.5	5.6	29	20
3000-3499	2.6	3.1	1.9	2.3	2.8	43	10
3500-3999	1.6	1.4	2.1	1.5	1.2	13	6
4000 and over	2.4	2.4	3.2	1.7	1.9	11	2
Gestation (weeks)							
All gestations	8.7	9.6	9.2	7.8	8.7	351	153
Under 24	*	*	*	*	*	3	36
24-27	407.2	665.4	611.6	497.8	556.0	86	48
28-31	221.2	161.0	185.9	141.8	156.5	61	11
32-36	40.3	41.4	33.6	33.5	31.0	81	23
37 and over	3.2	2.9	3.0	2.4	3.0	120	35

- 1 The figures shown in the table were obtained as follows
- Perinatal mortality rates for all weights and all gestations were obtained from the Registrar General Scotland.
 - The birthweight and gestation specific perinatal mortality rates were calculated from the following data:
 - numerator The number, birthweight and gestation of stillbirths and first week deaths were obtained from the *Scottish Stillbirth and Infant Death Survey*.
 - denominator The number, birthweight and gestation of total births have been obtained from SMR02.
- 2 On 1 October 1992 the legal definition of stillbirth changed. This reduced the registrable age from 28 to 24 weeks.
- 3 Includes 4 births where birthweight was not known.
- 4 Includes 7 births where birthweight was not known.
- r Revised.
- p Provisional data from SMR2.
- * Rates not calculated as SMR2 data are incomplete.

Sources : ISD Scotland (SMR2/SMR02); Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➔ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.

A 5.3 Stillbirths and neonatal deaths by obstetric factors

year ending 31 December

Obstetric factor ¹	1990	1995 ²	1996	1997	1998	1998
	Rate per 1000 total births					Number
Stillbirths²						
All factors	5.3	6.6	6.4	5.3	6.1	351
Congenital anomaly	0.4	0.6	0.6	0.7	0.7	38
Isoimmunisation	0.0	0.0	-	-	0.1	3
Pregnancy hypertension	0.2	0.6	0.4	0.5	0.7	43
Antepartum haemorrhage	0.8	1.1	0.9	0.8	0.7	38
Trauma/Mechanical	0.1	0.2	0.2	0.1	0.1	5
Maternal disorder	0.3	0.6	0.4	0.2	0.3	20
Miscellaneous	0.2	0.2	0.2	-	0.1	6
Unexplained <2500g	1.8	2.1	2.5	2.1	2.2	128
Unexplained >=2500g	1.4	1.1	1.2	1.0	1.2	70
	Rate per 1000 live births					Number
Neonatal deaths						
All factors	4.4	4.0	3.9	3.2	3.6	206
Congenital anomaly	1.3	1.2	1.2	1.0	0.9	49
Isoimmunisation	0.0	-	-	-	0.0	2
Pregnancy hypertension	0.2	0.2	0.2	0.1	0.3	16
Antepartum haemorrhage	0.4	0.2	0.4	0.2	0.3	15
Trauma/Mechanical	0.1	0.0	0.1	0.1	0.0	2
Maternal disorder	0.3	0.4	0.3	0.1	0.2	12
Miscellaneous	0.2	0.2	0.2	0.0	0.1	3
Unexplained <2500g	1.5	1.5	1.3	1.2	1.5	85
Unexplained >=2500g	0.1	0.2	0.2	0.2	0.2	14
Postnatal cause	0.2	0.1	0.1	0.3	0.1	8

1 Definitions of these categories are contained in the *Scottish Stillbirth and Infant Death Report*.

2 On 1 October 1992 the legal definition of stillbirth changed. This reduced the registrable age from 28 to 24 weeks.

Sources : ISD Scotland; Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➔ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.

A 5.4 Neonatal deaths by paediatric factors

year ending 31 December

Paediatric Factor ¹	1990	1995	1996	1997	1998	1998
	Rate per 1000 live births					Number
All factors	4.4	4.0	3.9	3.2	3.6	206
Congenital anomaly	1.3	1.2	1.2	1.0	0.9	49
Isoimmunisation	-	-	-	-	0.0	2
Anoxia	0.5	0.3	0.4	0.4	0.5	27
Lung immaturity	0.9	0.7	0.9	1.0	1.3	74
Hyaline membrane disease	0.8	0.7	0.5	0.3	0.4	22
Intracranial haemorrhage	0.1	0.0	0.1	0.1	0.0	2
Infection	0.3	0.5	0.5	0.2	0.2	14
Haemorrhage	0.1	0.0	0.1	-	0.0	2
Other paediatric factor	0.2	0.3	0.2	0.1	0.1	6
Unexplained	0.2	0.1	0.1	0.2	0.1	8

1 Definitions of these categories are contained in the *Scottish Stillbirth and Infant Death Report*.

Sources : ISD Scotland; Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➔ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.

Stillbirths and neonatal death rates (FIGO classification¹)

year ending 31 December 1998

A 5.5

Health board of residence	Stillbirths weighing			Neonatal deaths weighing		
	500g and over	1000g and over	1000g and over	500g and over	1000g and over	1000g and over
		total	normally formed		total	normally formed
	Rate per 1000 total births			Rate per 1000 live births		
Scotland	5.3	4.0	3.7	3.1	1.8	1.0
Argyll & Clyde	5.3	3.2	3.2	3.4	1.3	0.9
Ayrshire & Arran	2.5	1.7	1.5	3.5	2.0	1.5
Borders	8.6	5.7	4.8	6.7	3.9	1.0
Dumfries & Galloway	3.3	3.3	3.3	3.3	3.3	2.6
Fife	6.7	4.1	4.1	2.1	1.0	0.5
Forth Valley	4.1	3.2	2.8	2.8	0.6	0.3
Grampian	5.7	4.5	4.3	3.4	2.2	0.5
Greater Glasgow	5.7	4.3	3.8	3.9	2.4	1.8
Highland	4.5	3.7	3.2	2.9	2.0	1.2
Lanarkshire	5.6	4.4	3.8	2.3	1.1	0.5
Lothian	4.7	3.8	3.7	3.0	1.9	1.1
Orkney	5.1	5.1	5.1	0.0	0.0	0.0
Shetland	14.9	11.2	11.2	0.0	0.0	0.0
Tayside	6.2	5.2	4.5	2.9	1.0	0.7
Western Isles	3.6	3.6	3.6	3.6	3.6	0.0

1 Under the FIGO system, stillbirth and neonatal death rates among normally formed infants weighing 1000g or over are calculated. These rates are intended to represent a notional 'preventable mortality' in that many of the immaturity-associated conditions and major malformations are discounted.

Sources : ISD Scotland; Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➤ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.

Postneonatal mortality by cause of death

year ending 31 December

A 5.6

Cause of death	1990	1995	1996	1997 ¹	1998	1998
	Rate per 1000 live births					Number
All causes	3.3	2.2	2.2	2.1	2.0	114
Congenital anomaly	0.7	0.8	0.8	0.7	0.7	39
Perinatal causes	0.4	0.4	0.4			
Asphyxia related	x	x	x	0.1	0.1	4
Immaturity related	x	x	x	0.4	0.3	19
Infection	0.2	0.2	0.1	0.2	0.1	5
Accident	0.1	0.1	0.0	0.1	0.1	5
Sudden infant death syndrome	1.9	0.6	0.6	0.6	0.6	36
Miscellaneous	0.1	0.1	0.2			
Specific conditions	x	x	x	0.1	0.0	2
Remaining causes	x	x	x	0.2	0.1	4

1 From 1997, the causes of death have been classified into eight categories - in previous years some of these had been amalgamated. To help comparisons, the new categories are shaded.

Sources : ISD Scotland; Scottish Stillbirth and Infant Death Survey; and Registrar General for Scotland.

➤ For further information, see *Scottish Stillbirth and Infant Death Report*; and *Births in Scotland 1976-1995*.