

ANNUAL STATISTICAL REVIEW

P O D Pharoah, E D Alberman

This is the third in the series of annual reviews of national statistics relevant to childhood. Statistical data are provided which will allow updating of most of the tables in the annual statistical review of 1988 and will enable the reader to examine trends. Where entirely new data are provided it is hoped that, by stating the source publication, the reader can obtain previous years' data if trends are the object of interest.

Nativity

The number of births in the United Kingdom rose further in 1987 to 775 600 births, an increase of 2% over the previous year. Among these births, 22.9% were outside marriage, this

Table 1 Key birth statistics for United Kingdom and constituent countries 1987

| Country | No of live births (thousands) | General fertility rate* | Births outside marriage (%) |
|------------------|-------------------------------|-------------------------|-----------------------------|
| United Kingdom | 775.6 | 62.3 | 22.9 |
| England | 643.3 | 62.0 | 23.2 |
| Scotland | 66.2 | 58.8 | 22.8 |
| Wales | 37.8 | 62.9 | 23.3 |
| Northern Ireland | 27.9 | 82.2 | 14.3 |

*Births per 1000 women aged 15-44.
Source: OPCS Series FM1 No 16, 1987.

Table 2 Live births by country of birth of mother (Great Britain)

| Area or country of birth of mother | Live births (thousands) | | | |
|--|-------------------------|-------|-------|-------|
| | 1971 | 1981 | 1986 | 1987 |
| United Kingdom | 773.3 | 617.3 | 641.9 | 663.8 |
| Republic of Ireland | 22.5 | 8.6 | 6.4 | 6.2 |
| Old Commonwealth | 2.7 | 2.6 | 2.7 | 2.8 |
| India | 13.7 | 12.6 | 10.8 | 10.2 |
| Pakistan and Bangladesh | 8.5 | 17.0 | 18.9 | 18.3 |
| Caribbean | 12.6 | 6.3 | 4.7 | 4.6 |
| Other New Commonwealth | 11.4 | 18.7 | 19.8 | 19.9 |
| Other European and rest of the world | 20.4 | 20.2 | 21.4 | 21.8 |
| Total with mothers born outside United Kingdom | 91.8 | 86.0 | 84.8 | 83.9 |

Source: Social Trends 19, 1989.

also was an increase from 21.4% in 1986. The key birth statistics for United Kingdom and constituent countries are given in table 1. In England and Wales, the increase in the proportion of births outside marriage was predominantly among jointly registered births.

Counter to the overall increase in number of births in the 1980s, there has been a decrease in births to mothers whose country of birth is in the Indian subcontinent or the Caribbean (table 2).

Mortality**INFANT MORTALITY**

The infant mortality rates for 1987 and the provisional rates for 1988 for England, Scotland, and Wales are shown in table 3. The rise in the infant mortality rate for England and Wales in 1986, which engendered considerable public concern, once again assumed a downward trend. The improvement in infant mortality during the 1980s is, for England and Wales, almost entirely attributable to the reduction in neonatal mortality. Postneonatal mortality fails to show any significant change, which is probably an indictment of social policy in relation to children. This pattern is not found in Scotland where the downward trend is also evident in postneonatal mortality rates.

A new neonatal death certificate was introduced on 1 January 1986 that allows certifiers to state both maternal and fetal conditions which contributed to the death. As equal weighting is given to main conditions in the fetus and in the mothers, it is no longer possible to identify a single cause of death for neonatal deaths and comparisons with the period before 1986 will not be valid.

This restriction does not apply to postneonatal deaths but as neither the postneonatal mortality rate nor its constituent causes of death groups has altered in any significant way, in 1987, the trend over time does not require special comment.

Table 3 Infant mortality rates 1987 and 1988*

| Country | Perinatal mortality‡ | | Neonatal mortality‡ | | Postneonatal mortality‡ | | Infant mortality‡ | |
|----------|----------------------|------|---------------------|------|-------------------------|------|-------------------|------|
| | 1987 | 1988 | 1987 | 1988 | 1987 | 1988 | 1987 | 1988 |
| England | 8.9 | 8.7 | 5.0 | 4.9 | 4.1 | 4.1 | 9.1 | 9.1 |
| Scotland | 8.9 | 9.0 | 4.7 | 4.6 | 3.8 | 3.6 | 8.5 | 8.2 |
| Wales | 9.2 | 8.3 | 5.0 | 4.7 | 4.5 | 2.9 | 9.5 | 7.6 |

*1988 provisional.
‡Per 1000 total births (live and still).
‡Per 1000 live births.
Source: Population Trends 1989;56:50-1.

Department of
Community Health,
University of Liverpool
P O D Pharoah

Department of
Clinical Epidemiology,
London Hospital
Medical College
E D Alberman

Correspondence to:
Professor P O D Pharoah,
Department of
Community Health,
University of Liverpool,
PO Box 147,
Liverpool L69 3BX.

Table 4 Death rates/100 000 for all causes of death among children 1-19 years of age, by country, age, and sex: selected countries, 1985

| Country | 1-4 Years | | 5-9 Years | | 10-14 Years | | 15-19 Years | |
|-----------------------------|-----------|--------|-----------|--------|-------------|--------|-------------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female |
| England and Wales | 49.8 | 40.8 | 21.6 | 18.1 | 28.9 | 18.7 | 67.6 | 28.2 |
| United States | 58.1 | 44.5 | 28.2 | 21.2 | 34.9 | 20.5 | 114.7 | 46.5 |
| Federal Republic of Germany | 46.7 | 42.2 | 24.4 | 22.1 | 22.7 | 16.6 | 83.4 | 33.9 |
| France | 49.4 | 41.3 | 28.3 | 21.1 | 29.6 | 18.5 | 89.3 | 39.3 |
| The Netherlands | 45.5 | 37.5 | 21.1 | 13.6 | 22.2 | 13.9 | 60.2 | 24.9 |
| Sweden | 30.0 | 28.4 | 19.6 | 10.5 | 17.2 | 15.1 | 61.6 | 30.8 |
| Canada | 47.8 | 37.3 | 26.4 | 18.7 | 31.2 | 20.3 | 101.7 | 42.1 |
| Japan | 55.7 | 41.6 | 26.6 | 15.3 | 19.9 | 13.1 | 69.8 | 23.7 |
| Australia | 56.6 | 45.0 | 29.6 | 19.9 | 28.7 | 16.0 | 111.5 | 41.7 |

Source: United States Department of Health and Human Services. Vital Statistics series 3, No 26, 1989.

Table 5 Children aged under 16 by social class of head of household, Great Britain 1971 and 1981

| Social class of head of household | Children in each social class (%) | | Change in numbers of children 1971-81 (%) |
|---|-----------------------------------|------|---|
| | 1971 | 1981 | |
| I Professional, etc | 5.9 | 6.0 | -19.2 |
| II Intermediate | 18.7 | 23.3 | -1.0 |
| III Skilled, non-manual | 10.0 | 10.3 | -17.9 |
| III Skilled, manual | 39.1 | 36.2 | -26.3 |
| IV Partly skilled | 16.2 | 15.3 | -24.9 |
| V Unskilled | 6.8 | 5.2 | -38.8 |
| Armed forces and inadequately described | 3.2 | 3.6 | -10.2 |

Source: Britain's Children. OPCS Census Guide No 2.

CHILDHOOD MORTALITY

International comparisons of mortality among children are shown in table 4. It can be seen that the rates for England and Wales tend to be in the middle of a ranking table. That does not provide grounds for complacency, however, because the tragedy is that so many of the deaths are preventable. In the age groups 5-9 and 10-14, about two fifths of the deaths are due to accidents. The scope for prevention is evident from the very striking social class differences in mortality due to accidents whether they be motor vehicle traffic accidents, accidents caused by fire and flames, or by submersion, suffocation, etc.

MORTALITY AND SOCIAL CLASS

Statistics of infant mortality in England and Wales in relation to parents' occupation and

social class were first presented for the year 1911. Deaths of children under school leaving age by social class is a more recent development dating from the Decennial Supplement to the 1931 census. Now for the first time such statistics have been published in a separate volume.¹

The proportion of children in the different social classes has changed with a relative increase in the upper social classes and a decrease in the lower social classes. This is partly due to a general upward drift towards more highly skilled occupations and partly because there has been a disproportionately greater reduction in births to the lower social classes between 1971 and 1981. These data are given in table 5. The drift towards the higher social classes also makes for problems in comparing trends in social class mortality over time. Because of social class differences in mortality and morbidity, these trends are of relevance to child health.

The social class differences in mortality during infancy and childhood are shown in table 6. The greatest differential in both boys and girls is during the toddler years 1-4 and in the postneonatal period. In this table the data for infants comes from the linkage of birth and death registration documents which has been routine since 1978. For children aged 1-15 years, the numerator deaths are also obtained from the registration procedure but the denominator population numbers are from the 1981 census.

In comparing social class mortality rates for children the group missing from table 6 is the

Table 6 Mortality of children aged under 15: rates/100 000 by age, sex, and social class in England and Wales 1979-80, 1982-3

| Sex and social class | Age at death | | | | | |
|----------------------|--------------|----------|--------------|-----------|-----------|-------------|
| | Stillbirth | Neonatal | Postneonatal | 1-4 Years | 5-9 Years | 10-14 Years |
| Males | | | | | | |
| I | 483.6 | 556.9 | 309.8 | 33.0 | 24.2 | 20.5 |
| II | 558.9 | 637.3 | 327.2 | 34.2 | 19.0 | 21.9 |
| III non-manual | 564.3 | 685.1 | 323.4 | 41.3 | 22.9 | 20.3 |
| III manual | 715.0 | 733.3 | 419.4 | 52.7 | 25.9 | 26.3 |
| IV | 847.3 | 935.6 | 574.6 | 63.8 | 31.7 | 30.5 |
| V | 919.0 | 1055.4 | 759.3 | 111.5 | 50.1 | 36.2 |
| I-V ratio | 1.90 | 1.90 | 2.45 | 3.38 | 2.07 | 1.77 |
| Females | | | | | | |
| I | 420.4 | 429.8 | 254.2 | 33.1 | 16.5 | 15.1 |
| II | 529.5 | 489.8 | 272.5 | 31.2 | 15.1 | 15.4 |
| III non-manual | 603.0 | 537.8 | 278.8 | 35.8 | 17.5 | 14.0 |
| III manual | 673.6 | 570.5 | 331.1 | 42.0 | 18.3 | 19.1 |
| IV | 809.4 | 720.6 | 450.8 | 52.2 | 22.6 | 17.4 |
| V | 805.6 | 737.9 | 588.4 | 85.6 | 30.6 | 23.9 |
| I-V ratio | 1.92 | 1.71 | 2.31 | 2.58 | 1.85 | 1.58 |

Source: OPCS: Series DS, No 8, 1989.

'other' category. This includes those who are 'unoccupied' and in 'inadequately described' occupations. The last named category includes many women who are single parents, separated, divorced, or widowed. The significance of the 'other' category becomes evident when cause of death in the postneonatal period is examined by social class (table 7). This category now constitutes an underclass and consistently fares less well than social class V. The relative risk is particularly high for the sudden infant death syndrome and deaths due to accidents. The increasing proportion of children now allocated to the 'other' category makes the interpretation of social class trends in childhood mortality difficult.

BIRTHWEIGHT SPECIFIC MORTALITY

Table 8 updates the birthweight specific mortality table from the last annual statistical review. Continuing developments in neonatal

intensive care have led to an increased interest in the fate of extremely low birthweight infants (≤ 1000 g). To enable the reader to examine mortality trends, data are presented in table 9 which subdivides the infants of birth weight ≤ 1500 g into ≤ 1000 g and 1001–1500 g.

Since 1 April 1987 information on low birthweight infants has been collected by the Department of Health for a financial rather than a calendar year so the most recent data cover the period 1 April 1987 – 31 March 1988. In April 1988 the old form LHS 27/1 with birthweight notifications was replaced by the Korner form KC52.

The striking observation shown in table 9 is the increase in late neonatal mortality for the extremely low birthweight infants between 1976 and 1981. This suggests that many deaths were postponed from the early neonatal (first week) to the late neonatal (second to fourth week) period. The overall neonatal mortality rate showed a continuous improvement from 1976 to

Table 7 Postneonatal mortality rates/100 000 live births by cause of death and social class in England and Wales 1979–80, 82–83

| Cause of death | Total | Social class | | | | | | |
|--|-------|--------------|-------|---------------------|-----------------|-------|-------|--------|
| | | I | II | III (non-manual) | III (manual) | IV | V | Others |
| Congenital anomalies (ICD 740–759) | 79.7 | 65.3 | 66.9 | 65.2 | 78.2 | 95.3 | 104.6 | 130.0 |
| Conditions originating in the perinatal period (ICD 760–779) | 17.8 | 13.7 | 15.5 | 15.0 | 15.6 | 25.7 | 21.4 | 29.7 |
| Sudden infant death syndrome (ICD 798) | 140.8 | 98.6 | 103.9 | 92.5 | 133.9 | 172.4 | 245.6 | 333.0 |
| Accidental (ICD E800–E999) | 19.8 | 11.9 | 9.8 | 14.2 | 15.6 | 24.0 | 41.6 | 95.8 |

ICD: International Classification of Diseases.
Source: OPCS: Series DS, No 8, 1989.

Table 8 Birthweight specific mortality for England and Wales, 1987

| | Total | Birth weight (g) | | | | | | | Not stated |
|---------------|-------|------------------|-----------|-----------|-----------|-----------|-----------|-------|------------|
| | | <1500 | 1500–1999 | 2000–2499 | 2500–2999 | 3000–3499 | 3500–3999 | >4000 | |
| Stillbirth* | 5.0 | 127.3 | 59.9 | 15.7 | 4.6 | 1.6 | 1.1 | 1.7 | 61.7 |
| Perinatal* | 8.9 | 301.4 | 86.5 | 22.4 | 6.5 | 2.6 | 1.9 | 2.7 | 246.7 |
| Neonatal† | 5.0 | 239.0 | 36.1 | 8.9 | 2.9 | 1.4 | 1.1 | 1.3 | 223.1 |
| Postneonatal† | 4.0 | 32.1 | 17.2 | 9.2 | 5.5 | 3.0 | 2.5 | 2.4 | 23.9 |
| Infant† | 9.0 | 271.2 | 53.3 | 18.1 | 8.4 | 4.4 | 3.6 | 3.7 | 247.0 |

*Rate/1000 total births; †rate/1000 live births.
Source: OPCS DH3 (volume to be published).

Table 9 Birthweight specific mortality: very low birthweight infants (≤ 1500 g), England only

| Year | Stillbirth rate* | Perinatal mortality rate* | Early neonatal mortality rate† | Late neonatal mortality rate† | Neonatal mortality rate† |
|--------|------------------|---------------------------|--------------------------------|-------------------------------|--------------------------|
| | | | Birth weight ≤ 1000 g | | |
| 1976 | 353.2 | 818.7 | 719.7 | 38.2 | 758.0 |
| 1981 | 285.1 | 679.2 | 551.3 | 65.4 | 616.7 |
| 1982 | 239.9 | 649.1 | 538.3 | 63.6 | 601.9 |
| 1983 | 224.5 | 601.2 | 485.7 | 57.1 | 542.8 |
| 1984 | 214.2 | 570.2 | 453.1 | 53.6 | 506.7 |
| 1985 | 209.4 | 579.0 | 467.5 | 52.9 | 520.4 |
| 1986 | 204.5 | 542.1 | 424.3 | 52.9 | 477.2 |
| 1987/8 | 190.0 | 520.1 | 407.5 | 68.0 | 475.5 |
| | | | Birth weight 1001–1500 g | | |
| 1976 | 275.5 | 491.5 | 298.1 | 27.4 | 325.5 |
| 1981 | 177.4 | 297.8 | 145.8 | 28.0 | 173.8 |
| 1982 | 159.9 | 280.0 | 143.0 | 29.2 | 172.2 |
| 1983 | 149.0 | 254.2 | 123.6 | 24.1 | 147.7 |
| 1984 | 150.6 | 239.3 | 104.5 | 25.4 | 129.8 |
| 1985 | 125.3 | 215.4 | 103.6 | 14.2 | 117.3 |
| 1986 | 136.3 | 220.3 | 97.2 | 21.6 | 118.8 |
| 1987/8 | 116.5 | 198.1 | 92.3 | 30.1 | 122.4 |

*Per 1000 births (live and still); †per 1000 live births.
Source: From LHS 27/1; DHSS Statistics and Research, 1987 and 1988.

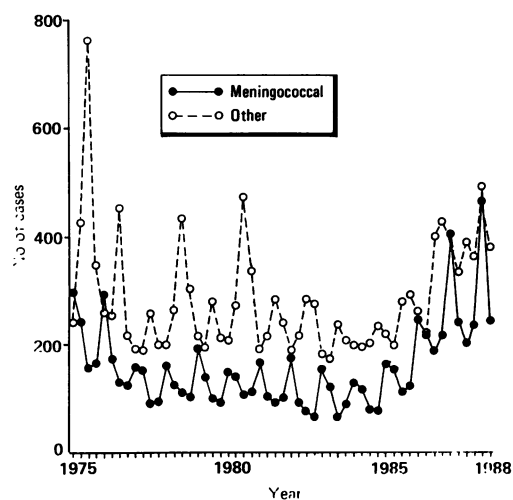
Table 10 Hospital discharge and death rates/10 000 and mean duration of stay (days)

| Age (years) | Year | | | | | | |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|
| | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
| 0-4 | | | | | | | |
| Discharge and death rate | 1308.9 | 1333.7 | 1378.1 | 1405.8 | 1402.7 | 1426.8 | 1500.6 |
| Mean duration of stay | 6.3 | 5.8 | 5.7 | 5.4 | 5.0 | 4.9 | 4.8 |
| 5-9 | | | | | | | |
| Discharge and death rate | 649.9 | 685.3 | 702.1 | 682.4 | 716.7 | 716.3 | 723.2 |
| Mean duration of stay | 5.1 | 4.6 | 4.4 | 4.3 | 4.2 | 4.4 | 4.1 |
| 10-14 | | | | | | | |
| Discharge and death rate | 466.8 | 491.3 | 500.5 | 500.9 | 523.1 | 535.1 | 534.5 |
| Mean duration of stay | 6.1 | 5.7 | 5.5 | 5.5 | 5.1 | 5.0 | 4.8 |

Source: OPCS: Series MB4 No 29, 1989.

1986, however, so that the present situation is that over 50% of these infants now survive the first four weeks.

There are anomalies in the 1987/8 data. The late neonatal mortality for both birthweight groups shows a sharp increase from the previous year. Also the original table published by the Department of Health, and from which table 9 is completed, shows an almost three fold increase in the number of low birthweight infants categorised as 'weight unknown'. This is most likely to be an artifact of the recording system. One possible explanation that would account for both anomalies is a bias in favour of recording the weight of infants that died but not of those that survived. Whatever the explanation it behoves caution in interpreting mortality trends in these groups of infants.



Trends in meningitis notifications. Source: OPCS Monitor Series MB2.

Morbidity

HOSPITAL ADMISSIONS

The admission (more strictly discharge and death) rate of children of all ages to hospital shows a steady upward trend accompanied by a trend towards shorter duration of stay (table 10). Because the data collected are of episodes of illness and not persons, the increasing admission trend could be due to more children being admitted or an increase in the number of admissions per child.

INFECTIOUS DISEASES

The majority (approximately two thirds) of cases of meningococcal meningitis are in children under 15 years of age. The trends in number of notifications of meningococcal and other types of meningitis are shown in the figure. There has been an increase in both groups since about 1984 and it is particularly evident for meningococcal meningitis. The number of cases in the March quarter of 1988 is more than the March quarter of 1974, which was the peak of the last upsurge of this infection.

The increase in the incidence of meningococcal meningitis is a widespread phenomenon with many notifications having been received from several conurbations. Also the epidemic is not confined to a single type of organism—for example, six cases reported from one area were caused by at least three different groups or types.

Immunisation rates continue to be a source of interest and concern. The slow improvement is maintained and is shown in table 11. Attention is drawn to the fact that the 1987 figures are for England only.

Social trends

ONE PARENT FAMILIES

It has long been recognised that children in a one parent family are at risk as shown by several health indices. The one parent family is defined as a mother or father living without a spouse (and not cohabiting) with his/her never married dependent child or children aged either under 16 or from 16 to under 19 and undertaking full time education.² Estimates of the number of one parent families have been obtained from the

Table 11 Percentage vaccination and immunisation of children (Great Britain)

| | 1971* | 1976 | 1981 | 1986 | 1987† |
|----------------------|-------|------|------|------|-------|
| Diphtheria | 80 | 73 | 82 | 85 | 87 |
| Tetanus | 80 | 73 | 82 | 85 | 87 |
| Whooping cough | 78 | 39 | 46 | 66 | 73 |
| Poliomyelitis | 80 | 73 | 82 | 85 | 87 |
| Measles | 46 | 45 | 54 | 71 | 76 |
| Rubella (girls only) | | | 84 | 87 | 86 |

*England and Wales only; †England only.
Source: Social Trends 19, 1989.

General Household and Labour Force Surveys and child benefit statistics. There were just over one million one parent families in 1986 with over 1.6 million dependent children. Since the early 1970s the proportion of all dependent children who live in one parent families has increased by more than 50%, while the proportion of all dependent children who live with a divorced lone mother had trebled.³ These trends have important implications for child health and the provision of a variety of child health services.

PLACE OF SAFETY ORDERS AND CHILD PROTECTION REGISTERS

A child or young person may be removed to a place of safety for varying periods not exceeding 28 days under various statutes. In the year ending March 1987 there were 8400 such orders in England and Wales, an increase of 37% in a decade.

The National Society for the Prevention of Cruelty to Children estimated that 25 700 children's names were added to registers in 1987, of which 8000 were for physical abuse, 7100 for sexual abuse, and 7200 were 'at risk'.⁴

To what extent these numbers quantify the problem is debatable as they will be affected by changing cultural norms, improved awareness, and a variety of other reasons. Nevertheless, these children frequently take up a disproportionate amount of the paediatrician's time and information that sheds light on the magnitude of the problem must surely be welcome.

- 1 Office of Population Censuses and Surveys. *Occupational mortality, 1979-80, 1982-83*. HMSO, London: 1989. (Childhood Supplement, Series DS No 8.)
- 2 Department of Health and Social Security. *Report of the committee on one-parent families*. London: HMSO, 1974.
- 3 Haskey J. One-parent families and their children in Great Britain: numbers and characteristics. *Population Trends* 1989;55:27-33.
- 4 Central Statistical Office. *Social Trends 19*. London: HMSO, 1989.