

INFANT MORTALITY AND SIDS IN NSW 1969-1987

The infant mortality rate is a cardinal indicator of population health. This article describes trends in infant mortality in NSW from 1969 to 1987, and examines the apparently changing contribution of sudden infant death syndrome. The leading causes of infant death are, in order, deaths due to perinatal conditions, sudden infant death syndrome (SIDS) and birth defects. SIDS accounts for about half of postneonatal deaths¹.

Infancy is defined as the period from birth to the end of the first year of life, and includes the neonatal period. Australia's infant mortality does not compare favourably with other equally developed countries. In 1986 Japan, Singapore and most European countries had lower infant mortality rates than Australia, which ranked 18th². In 1984 the infant mortality rates in Australia, New Zealand and Japan were 9.2, 11.6 and 5.5/1,000 live births respectively. Sudden infant death syndrome was the major component in the differences in infant mortality. The mortality rate for SIDS in 1984 was 2.2/1,000 live births in Australia; 4.3/1,000 in New Zealand; and 0.1/1,000 in Japan².

NSW mortality data are complete for 1969 to 1987 by year of death. During this period deaths were classified by the eighth (1969-1978) and ninth (1979 onwards) revisions of the International Classification of Diseases (ICD). The ICD classifications considered here did not change between the two revisions unless otherwise stated.

TRENDS IN CAUSES OF INFANT DEATH

The infant mortality rate for NSW has more than halved over the 20-year period, from 19.6 deaths/1,000 live births in 1969, to 8.9/1,000 in 1987 (see Figure 2). There was a 42 per cent decline from 1970 to 1979, with a continuing, but smaller decline from 1980 to 1987 (13 per cent).

Deaths due to **perinatal causes** or conditions (ICD-8, ICD-9 760-779) fell by 68 per cent from 1969 to 1987. Most of this decrease occurred in the 1970s. Conditions originating in the perinatal period include those where the death may occur later. This category includes maternal causes of perinatal mortality, disorders relating to gestation, birthweight, maturity, infections, respiratory disease and conditions of other body systems. Infections specific to the perinatal period were classified among perinatal conditions from 1979 (after the introduction of ICD-9). The highest death rate due to perinatal causes was 11.7/1,000 live births in 1970, falling to a low of 3.4/1,000 in 1986.

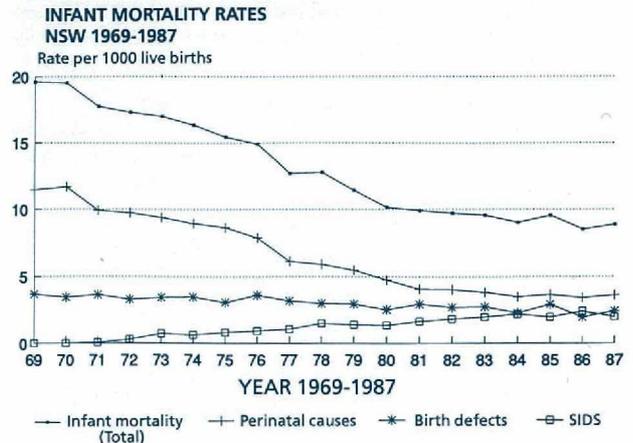
The **birth defect** (ICD-8, ICD-9 740-759) mortality rate fell gradually between 1969 and 1987. The rate decreased from 3.7 deaths due to birth defects/1,000 live births in 1969, to a low of 2.0/1,000 in 1986.

The definition of **SIDS**, proposed in 1969 in Seattle at the Second International Conference on the Causes of Sudden Death in Infants, is the sudden death of an infant which is unexpected by history and where there is no cause of death found at autopsy. SIDS first appeared as a diagnosis in the ninth revision of the International Classification of Diseases, which came into use in Australia in 1979 (ICD-9 798.0). Before this, some infant deaths may have been categorised as sudden death (ICD-8 795). The increase in sudden deaths of infants or SIDS since 1969 may be attributed partly to the gradual acceptance and increasing use of the term SIDS as a cause of death.

Suffocation (ICD-8, ICD-9 E911-913) includes mechanical suffocation from accidental inhalation or ingestion of food or foreign objects, as well as accidental mechanical suffocation (in cradle, enclosed space, plastic bags).

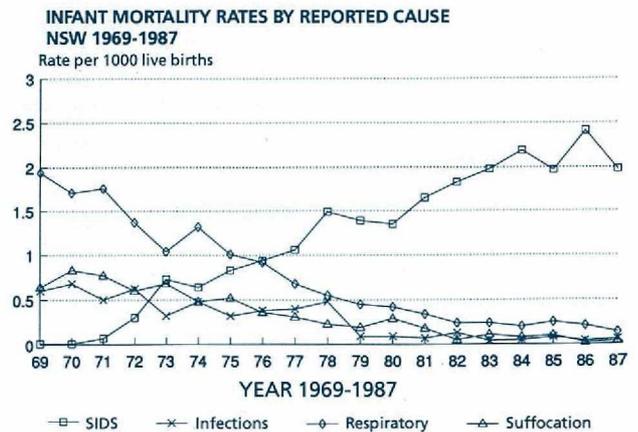
Suffocation is now an infrequent cause of death (see Figure 3), and was possibly used as a diagnostic label in the past when no obvious cause of death could be found. The reduction in the apparent frequency of suffocation is probably attributable to the use of SIDS as a diagnostic label.

FIGURE 2



Data source: ABS

FIGURE 3



Data source: ABS

Infections refers to the ICD grouping of infectious and parasitic diseases (ICD-8 1-136, ICD-9 1-139) and does not include organ-specific infections such as pneumonia or meningitis. It is of interest to note the sudden reduction in the rate of deaths apparently due to infections in 1979, coinciding with the introduction of ICD-9. This probably is a result of the diagnostic grouping "infections specific to the perinatal period" having been transferred from the rubric "infections" to the rubric "perinatal conditions". There may also have been some diagnostic transfer from infections to SIDS.

Respiratory diseases (ICD-8, ICD-9 460-519) include acute respiratory infections, pneumonia, influenza, chronic disease and other conditions of the respiratory system. Over the period 1969-87, the reported infant mortality rate from respiratory diseases decreased to the same extent as that from SIDS increased.

In summary, infant mortality is gradually declining in NSW. The major components of infant mortality — deaths due to perinatal causes and birth defects — are also decreasing. Deaths attributed to SIDS are increasing at a slow rate in NSW. This is of some concern when other countries have lower infant mortality rates than Australia, primarily because of lower SIDS rates.

Diagnostic transfer or real increase in SIDS?

Unexpected infant deaths did occur before 1969, but (as suggested above) the lack of a formal SIDS rubric in the ICD before 1979 resulted in a number of alternative diagnoses being used. Mild or moderate respiratory tract infection is a frequent autopsy finding in cases of unexpected infant death and, although

not of sufficient magnitude to cause death, may have been assigned as the cause of death when SIDS was not available. Accidental suffocation and, to a lesser extent, non-specific infections may have been used as diagnoses before the introduction of SIDS. The apparent increase in the occurrence of sudden deaths of infants in the 1970s reflects these changes in diagnostic practice.

The difficulty lies in determining if and when the process of diagnostic substitution ceased to occur, and whether there has been a true increase in the occurrence of SIDS. This is complicated by the nature of SIDS — a diagnosis of exclusion — that is dependent on the skill and experience of the examining pathologist. The latter would vary across NSW. These factors make any retrospective judgment on the true occurrence of SIDS susceptible to error.

In England there was a consistent rise in unexpected infant deaths from 1979 to 1987. At the 19th International Congress of Paediatrics in Paris in 1989 it was reported that the incidence of SIDS was rising in Sweden, Finland, New Zealand and parts of the United Kingdom. The increased occurrence of SIDS in Sweden and New Zealand is regarded as a real increase.¹ If the true occurrence of SIDS is increasing in NSW, there will be considerable pressure for further research and development of programs to prevent it.

The first task in NSW is to ensure a consistent diagnosis of SIDS across the State, together with timely infant mortality data. This will provide reliable data on the incidence of SIDS to identify trends, and monitor any preventive programs.

Any attempt to prevent deaths due to SIDS requires some understanding of SIDS and how these deaths occur. Our present knowledge of the epidemiology of SIDS has identified several risk factors or associations for SIDS, but any causal factor(s) or sequence of events remain elusive. Even without knowing the precise causes or mechanisms resulting in the sudden and unexpected death of an infant, it is possible to take action to reduce the frequency of the factors associated with SIDS. Careful evaluation of prevention programs is necessary to identify any subsequent changes in SIDS mortality and determine which programs are effective.

EDITORIAL NOTE

A strong association has recently been demonstrated between the occurrence of SIDS and the prone sleeping position. Associations with smoking and non-breast-feeding have also been reported. In several parts of the world the SIDS incidence appears to have declined in parallel with promotional campaigns which focus on sleeping position, non-smoking and breast feeding. The NSW Health Department now recommends that infants be placed to sleep on their sides or supine, unless medical advice is given to the contrary or the baby will only settle in a prone position. The SIDS incidence is being monitored.

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1. ABS. Causes of Death, New South Wales, 1989 (Cat No 3302.1). AGPS, Sydney, 1991.
2. Australian Institute of Health (1988). Australia's health 1988: the first biennial report of the Australian Institute of Health. AGPS, Canberra.
3. Newman NM. Sudden Infant Death Syndrome in Tasmania, 1975-1981. *Aust Paediatr J* 1986; suppl. 17-19.
4. Mitchell EA. International trends in postneonatal mortality. *Arch Dis Child* 1990; 65(6):607-9.

Acknowledgements

The staff of the Western Sector Public Health Unit and Michael Frommer, Deputy Director, Epidemiology and Health Services Evaluation Branch, for his comments and suggestions.

HYPERTENSION MANAGEMENT IN GENERAL PRACTICE

A comprehensive reference for diagnosing, assessing, investigating and managing hypertensive patients will be distributed to 4,000 GPs in NSW in March. This project is being supported by the Royal Australian College of General Practitioners and the NSW Better Health Program.

Hypertension is a detectable and treatable problem in Australia. As part of a strategy to address and control the problem a manual, called *Hypertension — Diagnosis, Treatment and Management*, has been produced for general practitioners.

The manual was produced after survey results from South Australia indicated the need for a comprehensive, integrated approach to the control of hypertension.¹ An expert committee comprising general practitioners, specialists and behavioural scientists, was responsible for developing the manual. It was then produced by the Research Unit, South Australian Faculty, Royal Australian College of General Practitioners.

The manual has been endorsed by a number of recognised professional bodies and individuals in NSW, including the National Heart Foundation; the Australian Medical Association; Dr Sue Morey, Chief Health Officer, NSW Health Department; and the High Blood Pressure Research Council.

A directory of community resources useful for patients with hypertension is included in the package. There is also a list of agencies to which GPs can refer patients for advice and information on weight management, nutrition and smoking cessation. Charts for monitoring hypertensive patients, which can be incorporated into patients' records, are included. It is expected the manual will assist GPs to continue their important role in preventive care.

Copies of the manual have been printed by Sandoz Australia. It will be distributed with the March issue of *Patient Management*. For information about further copies of the manual contact Kate Lamb, NSW Health Department, phone (02) 391 9585.

1. Hypertension Guidelines Committee, Introduction to *Hypertension — Diagnosis, Treatment and Maintenance*, Sandoz 1991.

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