Target revision

Although it is unlikely that the 1997 targets were reached, the year 2000 target is still attainable with continuing implementation of the Immunisation 2000 and Child Health strategies. In particular, the further development of information systems which enable the identification and follow-up of children for completion of their immunisation programme, is critical.

Sudden Infant Death Syndrome (SIDS)

SIDs

Key points

- The total SIDS rate declined marginally in 1996, continuing a pattern of gradual decline over the last five years.
- For 1996, two-thirds of SIDS cases were recorded as being in the Māori ethnic group, with the Māori rates continuing to be very high relative to other ethnic groups.
- There have been marked changes in the recording of ethnicity for births and infant deaths from September 1995; 1996 is the beginning of a new time series for ethnic-specific rates.
- A provisional target for Māori has been set to reflect the changes in the coding of ethnicity.
- In 1998 a review of the survey methods for collecting data relating to SIDS was completed. A survey incorporating recommendations from this review is planned to begin in 1999/2000.

TARGETS

To reduce the total SIDS rate to 1.5 per 1000 livebirths or less by 1997, and to 1.0 per 1000 or less by the year 2000.

To reduce the Māori SIDS rate to 3.7 per 1000 livebirths or less by 1997, and to 2.1 per 1000 or less by the year 2000.

Target derivation

In 1994 the Public Health Commission published *Sudden Infant Death Syndrome (SIDS): The Public Health Commission’s advice to the Minister of Health 1993–1994* (PHC 1994l). The target rates for total SIDS and Māori SIDS were included in that publication. The total SIDS target was based on an analysis of the time series and assumed a continuation of the downward trend, after the national campaign of 1991. The Māori SIDS target took account of the differential between Māori and non-Māori SIDS rates, and was set to be challenging yet achievable.

Provisional revisions of the Māori target levels have been made because of the change in recording of ethnicity in September 1995. Provisional targets for Māori have been set based on the change in Māori infant mortality between 1994 and 1996. The target revision assumes all of the change in Māori infant mortality is due to the change in ethnicity coding, as there was no change in the rate of infant death for the total population. The 18 percent decrease in
infant deaths coded as Māori has been applied to the old target for Māori SIDS. When more data are available the Māori targets will be reviewed.

**Indicators**

Total SIDS rate per 1000 livebirths.
Māori SIDS rate per 1000 livebirths.

**Data sources**

Infant mortality and livebirth data from NZHIS and Statistics New Zealand. The most recent data available for this report are for 1996. Infant mortality data are provisional for 1996.

**Related targets**

- Tobacco
- Breastfeeding

**Health impact**

In 1996 there were 109 deaths due to SIDS, down from 121 in 1995 and 118 in 1994. Of the SIDS deaths in 1996, 73 were in the Māori ethnic group (67 percent), and 11 (10 percent) were in the Pacific group (Figure 28).

The significant decrease in the SIDS rate which has taken place since 1989 has occurred primarily in the New Zealand European population (Ministry of Health 1998i).

**Progress toward the target**

Between 1980 and 1996 the SIDS rate in the total infant population dropped by more than half, from 4.1 in 1980 to 1.9 deaths per 1000 live births in 1996 (Figure 28). Most of the decrease occurred in the period 1989–91. This coincided with the National Cot Death Prevention Campaign, which promoted modification of three risk factors: prone sleeping position, lack of breastfeeding and maternal smoking. Much of the drop in total SIDS rate can be attributed to a decline in the incidence of prone sleeping in infants (Mitchell and Scragg 1994).

The decrease in the total SIDS rate is not equally distributed across Māori and non-Māori rates. The non-Māori SIDS rate decreased by 11 percent and 18 percent between 1987–89 and 1992–94 respectively. During the same period the Māori SIDS rate increased by 21 percent between 1987 and 1989 and there was no change in the rate between 1992 and 1994.

While the data are not comparable with previous years (see the Use of Ethnicity Data section), there has been an overall increase in the disparity between Māori and non-Māori SIDS rates. In 1980 the Māori SIDS rate was 1.7 times that of the non-Māori rate (6.4 compared to 3.8 deaths per 1000 live births for Māori and non-Māori respectively). In 1994 the Māori SIDS rate was 4.9 times the non-Māori rate (6.9 compared to 1.4 deaths per 1000 live births for Māori and non-Māori respectively). In 1996 the Māori SIDS rate was 4.6 compared to 0.9 for non-Māori (deaths per 1000 live births); the Māori rate is now around five times higher than that of non-Māori.
Mitchell and Scragg (1994) investigated the difference in SIDS mortality rates between Māori and non-Māori. Their findings suggest that the differences can largely be explained by differences in the prevalence of known risk factors, as discussed in the SIDS risk factors section.

It is interesting to note that the drop in the total SIDS mortality rate attributed to a decline in the incidence of prone sleeping (Mitchell and Scragg 1994) was not equally reflected in Māori and non-Māori SIDS rates. While the reduction in prone sleeping was 95 percent in non-Māori and 83 percent in Māori between 1987–90 and 1995–96, SIDS mortality decreased by 58 percent in non-Māori and 20 percent in Māori during the period 1987–90 and 1994.

Figure 28: SIDS mortality rate, by ethnicity, 1996

Rate per 1000 livebirths

Source of data: New Zealand Health Information Service
**Assessment**

**Data quality**

Historically, the primary problem with these data was the major under-reporting of Māori ‘ethnicity’ on birth and death certificates. Changes to the coding of ethnicity from 1 September 1995 are expected to address the under-reporting.

**Interpretation of trend**

The changes in ethnicity coding in September 1995 mean that ethnic-specific data before and after 1995 are not comparable (see Use of Ethnicity Data section for more information).

Since 1991, when the target was set, the total SIDS mortality rate has been declining by 5 percent annually (Figure 29). If the decline in total population SIDS mortality continues at the same rate, the 2000 target will not be achieved; in fact the 1997 target of 1.5 deaths per 1000 live births will only just be reached by the year 2000.

Interpretation of any trend for Māori SIDS mortality is not possible as only one year of data (1996) is presently available using the new self-identified concept of ethnicity. The period 1991–94 shows no change in SIDS mortality for Māori. It is unlikely that the target for the year 2000 will be met and it is not possible to comment on any trend past 1994.
Strategies
Strategies relating to SIDS are summarised at the end of this section.

Target revision
When more years of data are available for Māori SIDS mortality, a trend can be examined and the target can be reviewed.

SIDS risk factors

<table>
<thead>
<tr>
<th>TARGETS</th>
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<tbody>
<tr>
<td>To maintain the side and back sleep positions for infants at six weeks at the 1991 prevalence rate of 95 percent or greater.</td>
</tr>
<tr>
<td>To reduce the proportion of women who smoke during pregnancy to 25 percent or less by 1997, and to 20 percent or less by the year 2000.</td>
</tr>
<tr>
<td>To reduce the proportion of Māori women who smoke during pregnancy to 55 percent or less by 1997, and to 50 percent or less by the year 2000.</td>
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Target derivation
In 1994 the Public Health Commission published *Sudden Infant Death Syndrome (SIDS): The Public Health Commission’s advice to the Minister of Health 1993–1994* (PHC 1994l), which included all targets. The target related to sleep position was set to minimise the risk to the population, accepting that some infants will not sleep except in the prone position. Baseline rates for smoking in pregnancy were set from the Plunket National Child Health Study, a cohort study of children born during 1990–91 (Alison et al 1993). Target levels for smoking in pregnancy were set so as to be challenging but achievable. The baseline level in 1991 for women smoking in pregnancy was 33 percent, and for Māori women smoking in pregnancy it was 68 percent.

Indicators
Prevalence of infant sleep position at six weeks.
Proportion of women smoking during pregnancy.
Proportion of Māori women smoking during pregnancy.

Data source
The monitoring of these targets relies on the collection of nationally representative prevalence data for infants. A review of the survey methods for collecting data on infant care practices (including risk factors for SIDS) was completed in 1998. A new survey to collect these data is planned for 1999/2000.

Related targets
- Tobacco smoking
- Breastfeeding
Health impact

Research shows that particular groups within New Zealand society are at increased risk of SIDS (Ministry of Health 1998a; PHC 1995g, 1995h) due to social, economic and demographic factors, and infant care practices.

Infants who sleep prone have nearly three times the risk of SIDS compared with infants who sleep on their back or side (Scragg et al 1993). The literature recommends that sleeping infants supine would further reduce the risk, compared with sleeping on the side (Fleming et al 1996; Mitchell and Tipene-Leach 1996). The public health message was changed to ‘Sleep baby on their back’ in June 1995 (PHC 1995g; Ministry of Health 1996l).

There is strong evidence internationally, from both cohort and case-control studies, of a statistically significant dose-response relationship between maternal smoking and risk of SIDS (Anderson and Cook 1997). For recent years, over half of SIDS deaths in New Zealand can be attributed to maternal smoking (Mitchell 1994; Mitchell et al 1997). Smoking by fathers has also been found to increase the risk of SIDS. About one woman in three smokes during pregnancy, but the proportion is highest among Māori women, where two-thirds smoked in pregnancy in 1991 (Alison et al 1993).

Epidemiological data suggest that exposure to environmental tobacco smoke (ETS) may increase the risk of SIDS (Witschi et al 1997; Jinot and Bayard 1996).

International evidence supports New Zealand research suggesting that, for mothers who smoke, infants who bed-share (fall asleep in bed) with their mother are at increased risk of SIDS while bed-sharing, even if significant, is likely to be small. Recent data suggest that the proportion of infants visited by Plunket at three months who usually bed-shared in the previous two weeks was 51 percent among Māori, 62 percent among Pacific, and 19 percent among Europeans (Tuohy et al 1997). However, about half of bed-sharing is for less than two hours and possibly represents infants being brought to bed for breastfeeding. Regional studies in Canterbury have shown a fall in the incidence of bed-sharing from 49 percent in 1990 to 20 percent in 1997 (Ford et al, submitted).

The effect of social and economic conditions is being increasingly considered as a major determinant of SIDS (Ford and Nelson 1995; PHC 1995g; Mitchell and Tipene-Leach 1996). The interaction of these factors in different communities and different ethnic groups is an important area of policy development, health promotion and research. Data from the NZCDS suggest that infants domiciled in state houses are more likely to experience SIDS; however, the researchers concluded that this appeared to have little to do with the house per se, and perhaps more to do with socioeconomic characteristics (Schluter et al 1997).

A three-year investigation carried out by a United Kingdom Expert Committee studying the possible relationship between environmental toxic gases and SIDS found no evidence to support the theory. The committee found no evidence of either toxic gases being generated from fire-retardant chemicals encapsulated in cot mattress materials or that such gases are a cause of SIDS. Nor did they find any evidence that the wrapping of cot mattresses with polyethylene made any difference to the incidence of SIDS. Infants have died on wrapped mattresses in the United Kingdom (Department of Health 1998).
Progress toward the targets

Sleep position

The national programme on SIDS was officially launched in February 1991. However, major changes in the prevalence of prone sleep position occurred in August 1989 and August 1990, which coincided with Red Nose Day (Mitchell and Tonkin 1993).

Since 1991, fewer than 5 percent of all infants have been sleeping prone for any given night (Mitchell 1994; Tuohy et al 1997). However, recently the proportion of Māori infants being put to sleep prone was marginally over 5 percent at three months (Tuohy et al 1997). Sleep position is the only ‘modifiable’ risk factor that has changed significantly since 1987, and the decrease in the SIDS rate has been suggested as being largely attributable to the change in this risk factor (Mitchell 1994).

Smoking in pregnancy

Data for 1995–96 suggest that the prevalence of maternal smoking during pregnancy of infants visited by Plunket at three months was 26 percent for all infants and 49 percent for Māori infants (Tuohy et al 1997). The relative prevalence of smoking in pregnancy between Māori and non-Māori, assuming similar proportions of births, was 3.5 for 1991, compared with 2.8 in 1995–96. This suggests that the differential in smoking behaviour may be narrowing.

Assessment

Data quality

Most births in New Zealand are registered with Plunket. However, it is uncertain whether the infants who attend Plunket are representative of all infants. Differences in the sampling frames make comparisons over time difficult.

The target for prone sleep position is for six weeks of age. From the New Zealand Cot Death Study, prone sleeping was more prevalent at three months, suggesting that the recent Plunket results for prone sleeping may be higher than the true prevalence of prone sleeping.

Limitations of the indicators

Self reports of smoking during pregnancy are likely to underestimate the true prevalence (Ford et al 1997).

Interpretation of trend

Data related to the targets have come from different sources with different sample frames, so that direct comparisons should be made with care. The target level for sleep position may not be maintained for all sub-populations considered, and the associated health promotion messages may require reinforcement. The targets for smoking in pregnancy are more difficult to assess. The levels of smoking in pregnancy observed in 1995–96 are inconclusive but suggest that the targets for the total population may still be achieved. The targets for Māori women require revision, as the sampling frame used for monitoring differs from that used for setting the target.
### Strategies

<table>
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<tr>
<th>Comprehensive prevention strategy</th>
<th>Guidelines for public health services, Preventing Sudden Infant Death Syndrome (SIDS), were published in June 1995 (PHC 1995g). These guidelines assist providers in identifying and reducing risk factors for SIDS, including tobacco. Other strategies include promoting sexual and reproductive health; promoting breastfeeding; promoting family and whānau wellbeing, and parent support and skills development programmes; and delivering intensive home-visiting support services to families and whānau in difficult circumstances. A review of protective and risk factors for SIDS is included in Our Children’s Health (Ministry of Health 1998i).</th>
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<tr>
<td>Public education</td>
<td>A SIDS educational programme for Māori was first purchased in 1994. The programme has involved work with Māori communities, health professionals and social agency personnel who work with families, and also those who work with and support SIDS families. The communities most affected by SIDS require supportive, appropriate, and effective health messages and services for young mothers and their families. The functions of the national programme are presently being devolved by the HFA, and local groups of health professionals are being set up to support SIDS families.</td>
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<tr>
<td>Well child and maternity services</td>
<td>Well Child-Tamariki Ora services and maternity services remain the main approach to delivering health education services. A new schedule of services and the parent-held Well Child: Tamariki Ora Health Book (Ministry of Health 1996l) were launched in February 1996. There has been an increased emphasis on delivery of services to at-risk families.</td>
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<tr>
<td>Smoking reduction</td>
<td>Smoking is a risk factor that will not be easily reduced. Public health campaigns should be complemented by opportunistic screening at the primary care level, to reduce smoking prevalence (O’Hagan 1996). There are some promising programmes being developed, such as Smoke Change, a programme offered to all pregnant women in Christchurch. The programme uses the Act Now philosophy and is currently funded by the Pegasus Medical Group. See also the Tobacco section.</td>
</tr>
<tr>
<td>Promotion of breastfeeding</td>
<td>See Breastfeeding section.</td>
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<tr>
<td>Strengthening families initiative</td>
<td>This is an inter-departmental programme which seeks to improve the outcomes for children living in families in difficult circumstances. The Family Start programme, currently being targeted in three areas, is designed to provide additional support to these families, and consequently reduce at-risk behaviour and improve access to the health system.</td>
</tr>
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</table>

### Target revision

The target for infants sleeping supine requires further investigation, as do the targets for smoking (Māori and total population) in pregnancy. Systems for monitoring these targets (including use of consistent sampling methods) are being improved.