



National Coroners Information System (NCIS) Bulletin: Sudden Unexplained Infant Deaths 1 July 2000* – 18 May 2007

**From 1 January 2001 for Queensland cases.*

This bulletin summarises information about cases contained on the National Coroners Information System (NCIS) where the deceased was aged up to 2 years (0 to 23 months inclusive) and died suddenly as a result of unascertained causes, commonly referred to as 'Sudden Infant Death Syndrome' (SIDS). It aims to highlight the number of unexplained infant deaths identified on the NCIS within this age range.

Summary statistics about cases of sudden unexplained death in infancy are provided, along with information about the various terms used to describe these types of death*.

Major findings include:

- Over 800 infants died from unexplained causes (including SIDS) nationwide over a period of 6 and a half years.
- Different jurisdictions use different terminologies to describe these cause of these deaths. Forensic pathologists in NT and SA tend to use the term "unexplained" most frequently, while WA commonly refer to the cause as "unascertained". All other jurisdictions tend to refer to the cause of death being "SIDS" most frequently.
- The national definition of SIDS involving an infant under 1 year of age seems to be reflected in practice, with only one case being found to refer to the cause of death being "SIDS" post 2004, in an infant over 12 months of age.

* SIDS is a diagnosis of exclusion. The pathologist undertakes the post-mortem to rule out other causes of death. When no cause of death is found a SIDS diagnosis may be used. More recently, and often in association with environmental factors such as co-sleeping, the diagnoses of 'Unascertained' or 'Undetermined' have been used. (Taken from the report of the first Australian SIDS Pathology Workshop, held in Canberra on March 22 and 23, 2004).

Methodology for case identification

Cases were identified on the NCIS by designing and running a query of the database using the online search interface. The query extracted all deaths of infants aged 0 to 23 months inclusive. Details of each of these cases were added to a spreadsheet. Any deaths where the medical cause of death was SIDS or unexplained (including terminology such as unascertained or undetermined) were included in the analysis.

For the purposes of this report, data on deaths of infants aged 0 to 23 months inclusive where the cause of death was unknown or classified as being due to SIDS, was included in the analysis. This allowed analysis of use of the SIDS terminology by forensic pathologists in infants of different ages.

Findings

Table 1 presents a summary of unexplained child deaths identified on the NCIS by State/Territory and Case Year. A total of 805 relevant deaths were found on the NCIS, reported to a coroner around Australia between July 2000 and May 2007.

Table 1: SIDS and unexplained deaths of infants aged 0 to 23 months by State/Territory and Case Year

Case year	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
2000*	1	27	2	N/A	4	2	14	11	61
2001	3	46	6	47	11	6	21	22	162
2002	3	56	8	34	8	5	34	11	159
2003	3	46	4	25	8	4	13	15	118
2004	2	35	4	19	5	4	21	18	108
2005	2	47	4	28	6	4	19	13	123
2006**	0	34	6	8	4	4	15	2	73
2007**	0	0	0	0	0	1	0	0	1
Total	14	291	34	161	46	30	137	92	805

* From 1 July 2000.

** May be an under representation of the actual number of relevant deaths due to some cases not yet having the medical cause of death field(s) completed on the NCIS.

Due to the recent nationally agreed definition of SIDS, cases identified on the NCIS have been reviewed on the basis of the terminology used in the medical cause of death.

Tables 2 and 3 below shows that the majority of infant deaths (more than 60%) where the cause of death was unknown or undetermined were classified as being due to SIDS. Approximately 30% of cases were classified as having an undetermined or unascertained cause of death. The remaining 10% of cases were classified as a combination of the above or classified using other terminology.

Table 2: Unexplained infant deaths by terminology in Medical Cause of Death fields and State/Territory

Cause of death	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
SIDS	7	202	13	110	2	24	109	22	489
Undetermined	3	36	19	44	25	1	2	8	138
Unascertained	4	17	0	1	0	3	26	57	108
Undetermined (SIDS)	0	15	2	2	18	0	0	0	37
Other	0	19	0	4	1	1	0	4	29
Unascertained (SIDS)	0	2	0	0	0	1	0	1	4
Total	14	291	34	161	46	30	137	92	805

Definition of SIDS:

In March 2004, the National SIDS Pathology Workshop in held in Canberra agreed upon the following definition of SIDS:

The sudden and unexpected death of an infant under 1 year of age, with onset of the lethal episode apparently occurring during sleep, that remains unexplained after a thorough investigation including performance of a complete autopsy, and review of the circumstances of death and the clinical history.

*Table 3: Unexplained infant deaths by terminology in Medical Cause of Death fields and State/Territory (percentages)**

Cause of death	ACT %	NSW %	NT %	QLD %	SA %	TAS %	VIC %	WA %	Total %
SIDS	50.0%	69.4%	38.2%	68.3%	4.4%	80.0%	79.6%	23.9%	60.7%
Undetermined	21.4%	12.4%	55.9%	27.3%	54.3%	3.3%	1.5%	8.7%	17.1%
Unascertained	28.6%	5.8%	0.00%	0.6%	0.00%	10.0%	19.0%	62.0%	13.4%
Undetermined (SIDS)	0.0%	5.1%	5.9%	1.2%	39.1%	0.0%	0.0%	0.0%	4.6%
Other	0.0%	6.5%	0.0%	2.5%	2.2%	3.3%	0.0%	4.3%	3.6%
Unascertained (SIDS)	0.0%	0.7%	0.0%	0.0%	0.0%	3.3%	0.0%	1.1%	0.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Frequencies above 50% have been highlighted.*

From Table 3 it can be seen that in the Northern Territory and South Australia, most unexplained infant deaths are termed 'undetermined' rather than SIDS. Western Australia tends to use the term 'unascertained' most frequently.

Instances where SIDS was mentioned in the cause of death were further analysed by the age group of the deceased. As would be expected according to the nationally agreed definition, Table 4 demonstrates that the majority of deaths classified as being due to SIDS involved infants aged 0-12 months of age.

Table 4: Reference to SIDS in the Medical Cause of Death fields by age range of deceased and case year

Case Year	0-3 mths	4-6 mths	7-9 mths	10-12 mths	13-15 mths	16-18 mths	19-21 mths	22-23 mths	Total
2000*	31	11	5	0	0	0	1	0	48
2001	78	26	5	1	0	0	0	0	110
2002	69	22	6	4	0	0	0	0	101
2003	40	20	4	1	0	0	0	0	65
2004	33	18	4	2	0	1	0	2	60
2005	69	15	5	1	0	1	0	0	91
2006**	36	12	2	4	0	0	0	0	54
2007**	1	0	0	0	0	0	0	0	1
Total	357	124	31	13	0	2	1	2	530

* From 1 July 2000.

** May be an under representation of the actual number of relevant deaths due to some cases not yet having the medical cause of death field(s) completed on the NCIS.

Table 5 presents the total number of cases where the term SIDS (either alone or in conjunction with other terminology) was mentioned in the medical cause of death. The term SIDS was used to explain the deaths of more than 50% of coronial cases of unexplained infant death in Tasmania, Victoria, New South Wales, Queensland and the Australian Capital Territory. Conversely, in South Australia, the Northern Territory and Western Australia, less than 50% of coronial deaths of infants where the cause of death was unknown were classified as being due to SIDS.

Table 5: Reference to SIDS in the Medical Cause of Death fields by State/Territory

Case State/Territory	SIDS listed in cause of death	Percentage of total death
TAS	25	83.33%
VIC	109	79.56%
NSW	219	75.26%
QLD	112	69.56%
ACT	7	50.00%
NT	15	44.12%
SA	20	43.48%
WA	23	25.00%
Total	530	65.84%

CORONIAL COMMENTS AND RECOMMENDATIONS

Most coronial recommendations made in relation to SIDS since July 2000 have focussed on SIDS risk factors and community and parental education/awareness about these risks (reproduced below).

Coronial comment: TAS Coroner Christopher Webster, September 2006

'SIDS recommendations, endorsed by the Royal Australian College of Practitioners and the "Sids and Kids Safe Sleeping Program", advise that there is an increase in risk where a infant or toddler bed sharing with an adult may get caught under bedding or between the wall and bed, fall out of bed or are rolled upon by someone who sleeps very deeply or is affected by drugs or alcohol, or their mothers smoke. This also extends to bed sharing with other children or pets. There is further risk involved where the infant was born pre-term or is small for its gestational age.'

Coronial comment: Deputy NT Coroner Helen Roberts, September 2006

'There is a great deal of debate in the relevant literature about bedsharing. Some studies have demonstrated bedsharing to be a risk factor only where mothers smoke; others have found a statistical correlation even with nonsmoking mothers. Mention is made in some studies of increased risk where parents have used alcohol or drugs, or are overtired; and where multiple family members share the bed. In addition, there are references to appropriate bedding – avoiding soft surfaces such as doonas and so on.

All of these matters to which I have been referring– bedsharing, smoking, unsafe sleeping areas – are not 'causes' of death, but 'risk factors' which have been identified as having a statistical correlation with infant deaths. The SIDS and KIDS Safe Sleeping brochure explains that while the cause of infant deaths may not necessarily be known, what is known are some ways to reduce the risk. The current SIDS and KIDS Safe Sleeping brochure for parents specifically advises that babies should sleep on their backs, sleep with their faces uncovered, and that cigarette smoke is bad for babies. It mentions that bedsharing with smoking mothers is considered to increase the risk of unexpected infant death (although the aetiology of this is not clear).'

Coronial Recommendation: WA Deputy State Coroner Evelyn Vicker, September 2005

'I recommend the extremely useful brochures provided by SIDS and Kids as to the risk factors involved with sharing a bed or couch with a newly born baby be strengthened to ensure parents understand it is not the fact of sleeping close to their babies which may be the problem but rather the additional risk factors which may on occasion be cause for concern... This could probably best be done by the use of pictorial diagrams.

I recommend there be initial and ongoing education of midwives as to the fact the current data indicates there may be risk factors of which they should advise parents while they are still in hospital with their babies. This could be achieved by SIDS and Kids developing an educational package which could be delivered to prospective midwives and also going into hospitals to provide refresher courses.

This should ensure consistency of information being provided to parents, the absence of which appears to have been a problem in the past.

I recommend the ongoing emphasis on sensitive but thorough investigations of scenes of death and autopsies to enable pathologists to truly try and elucidate the risk factors involved with bed sharing and the sudden unexpected death of infants and the education of parents as to the necessity for investigation.

Parents need to be educated the public and community interest in preventing infant deaths extends to other members of their own family as well as the community at large.'

**Want to know more about SIDS?
Visit the SIDS and Kids Website:**

<http://www.sidsandkids.org/>

The National SIDS Council of Australia, trading as SIDS and Kids, is a high-profile and well-respected not-for-profit organisation. It comprises a National Office based in Melbourne with the National Research and Programs Unit largely based in Canberra, and nine Member Organisations (MOs) based in other States and Territories.

Over the past 14 years SIDS and Kids, through their health promotion program SIDS and Kids Safe Sleeping, has been instrumental in reducing the infant mortality rate. (Source: SIDS and Kids website; edited for this publication).

Further reading:

For an international perspective on SIDS, visit the American SIDS Institute online at <http://sids.org>.

Future publications:

In a follow up bulletin scheduled for later in 2007 (to be co-authored with the Victorian Institute of Forensic Medicine), will provide a detailed analysis of the presence of the following risk factors for unexplained and SIDS infant deaths in Victoria:

- Parental smoking
- Parental drug/alcohol user
- Type of bed/sleeping arrangement
- Season in which the death occurred

About this publication and the National Coroners Information System:

This publication is part of a series of information bulletins on different topics of interest produced by the NCIS Unit.

The NCIS is a database of coronial information containing case detail information from the coronial files of all Australian States and Territories, with the data set commencing from 1 July 2000 (from January 2001 for Queensland data).

The NCIS is managed by the Victorian Institute of Forensic Medicine (VIFM) on behalf of a number of State and Federal Government funding agencies.

More information about the NCIS including links to other publications of interest can be found on-line at www.ncis.org.au.