Annual Report 2005 – 2006

Child Death & Serious Injury Review Committee

Government of South Australia

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ISSN 1833 9743

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Letter of Transmission

Hon Jay Weatherill MP
Minister for Families and Communities

Dear Minister

I submit to you for presentation to Parliament the 2005-2006 Annual Report of the South Australian Child Death and Serious Injury Review Committee which has been prepared pursuant to Part 7C of the *Children's Protection Act 1993.*

This report highlights the Committee's activities in fulfilling its statutory obligations subsequent to proclamation in February 2006 and under Cabinet Directions since April 2005. In compliance with the *Public Sector Management Act 1995* and the *Public Finance and Audit Act 1987* a further report concerning the management of human resources and financial issues of the Committee has been submitted as part of the Annual Report of the Department for Families and Communities 2005-2006.

Yours faithfully

Dymphna Eszenyi
Chair
Child Death and Serious Injury Review Committee

31 October 2006

Chair's Foreword

This is the second Annual Report of the Child Death and Serious Injury Review Committee and the first to be presented under Part 7C of the *Children's Protection Act 1993.*
This report concerns the deaths of children in South Australian in 2005. On behalf of the Committee I extend my condolences to the family and friends of these children and to those professionals who provided care for them.

I would like to thank my colleagues on the Committee for the attention, care and expertise which each has brought to the Committee's deliberations. I also thank the Committee's secretariat, led by Dr Sharyn Watts.

I share the Committee's hope that this report will assist policy makers and those who work with and for children in their efforts to keep children safe from harm.

Dymphna Eszenyi
Chair
Child Death and Serious Injury Review Committee

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Glossary

ABS	Australian Bureau of Statistics
Act	Children's Protection Act 1993
AEC	Adverse Events Committee - Families SA
AIHW	Australian Institute of Health and Welfare
ARIA+	ARIA stands for Accessibility/Remoteness Index of Australia. This Index is a distance-based measure of remoteness. It defines five categories of remoteness based on road distance to service centres: Major City; Inner and Outer Regional; Remote and Very Remote
CESDI	Confidential Inquiry into Sudden Deaths in Infants (Fleming et al. 2000)
Committee	Child Death and Serious Injury Review Committee
Coroner	State Coroner
CYWHS	Children, Youth and Women's Health Service
DFC	Department for Families and Communities
DTEI	Department of Transport, Energy and Infrastructure
ICD-10	International Classification of Disease (Version 10)
IMR	Infant Mortality Rate
NCCH	National Centre for Classification in Health, Brisbane
NSW CDRT	New South Wales Child Death Review Team
Queensland Commission	Queensland Commission for Children and Young People and the Child Guardian
Registrar	Registrar, Births Deaths and Marriages
SEIFA	The SEIFA (Socio-Economic Indexes for Areas) Index of Relative Disadvantage draws on a variety of personal and household characteristics (available from the 2001 Census) to rank household and socioeconomic status. In this report, IRDS scores have been divided into quintiles with quintile 1 representing areas of greatest advantage.
SIDS	Sudden Infant Death Syndrome
SUDI	Sudden Unexpected Death in Infancy
Victorian Council	Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity
WHO	World Health Organisation

Committee Members

Chair

Ms Dymphna Eszenyi

Members

Ms Jo Battersby
Until 21 03 2006

Mr George Beltchev

Mr Brian Butler

Professor Roger Byard

Ms Linda Doré

Mr Tim Goodes

Ms Di Gursansky

Dr Diana Hetzel

Ms Samantha Laubsch

Dr Nigel Stewart

Ms Alison Tucker

Ms Fiona Ward
Appointed 15 06 2006

Ms Helen Wighton

Detective Superintendent Peter Woite

Secretariat

Executive Officer

Dr Sharyn Watts

Administrative Officer

Ms Trish Rajak
Until 28 04 2006

Acknowledgements

The Committee wishes to thank the following people for their ongoing support:

Bridget Allison	Health Information Manager, National Centre for Classification in Health, Brisbane
Meg Clarke	Senior Project Officer, Injury Surveillance Unit, Epidemiology Branch, Department of Health
Jeanette Collins	Administrative Officer, Office of the State Coroner
Jane Cox	Senior Legal Officer, Legal and Governance Unit, Department of Health
Val Edyvean	Registrar, Births Deaths and Marriages
John Glover	Director, Public Health Information and Development Unit, University of Adelaide
Mark Johns	State Coroner
Ron Somers	Acting Director, Epidemiology Branch, Department of Health
Sue Walker	Associate Director, National Centre for Classification in Health, Brisbane

Executive Summary

Activities 2005-2006

The Child Death and Serious Injury Review Committee (the Committee) worked with limited powers and functions under Cabinet Directions from April 2005. In February 2006 enabling legislation was proclaimed, and the scope of the Committee's activities broadened to include the in-depth review of individual child deaths and serious injuries.

In the 2005-2006 financial year reporting period, the Committee gathered information concerning the circumstances and causes of the deaths of all children in South Australia since 1 January 2005. In this reporting period child deaths from all causes from 1 January to 31 December 2005 were screened.

As a result of these activities, the Committee has produced a report regarding the deaths of children in South Australia in 2005. This report includes findings and recommendations arising out of consideration of this information.

The Committee also reports on the process and outcomes of the in-depth reviews of child deaths that have been undertaken since February 2006.

Child Deaths 2005

One hundred and thirty-five children died in South Australia in 2005. Conditions originating in the perinatal period were the leading cause of death (32.6% of all deaths). These conditions include spontaneous premature labour, infections, haemorrhage and maternal conditions affecting the newborn. The second most common cause of death was congenital and chromosomal abnormalities (14.8% of all deaths). The majority of deaths attributed to these causes occurred in infants less than 28 days old. The third most common cause of death in 2005 was transport-related fatalities (12.6% of all deaths). These deaths occurred mainly in children aged between 15 and 17 years. Very few children died between the ages of five and nine years (six deaths). In the 15 - 17 year age group, more children died from causes such as transport-related fatalities than from natural causes.

This pattern of deaths is typical of the pattern described by child death review teams and committees in other States, with the majority of deaths occurring in infants less than one year of age, and from natural causes. Fewer children die in the middle years of childhood and more children in the 15 - 17 year age group die from external causes than from natural causes.

The Infant Mortality Rate (IMR) in 2005 was 4.6 deaths per 1000 live births.

Patterns in the prevalence of death in groups of vulnerable children support the connection between socioeconomic disadvantage and poorer health and wellbeing. Aboriginal children were three times more likely to die than non-Indigenous children. A greater proportion of the children who died in 2005 lived in areas of socioeconomic disadvantage. A number of children had previous contact with Families SA. Of particular concern were the children in this vulnerable group dying from 'sleep accidents' and in transport-related fatalities.

FINDINGS AND RECOMMENDATIONS

Findings and recommendations arising from the Committee's review of the deaths of children in 2005 are listed below.

Aboriginal Children

- The Committee wishes to highlight that a number of deaths of Aboriginal children were the result of preventable natural causes, e.g. the complications of rheumatic fever. Acute rheumatic fever and rheumatic heart disease are typically associated with overcrowding, poor living conditions and other aspects of social and economic disadvantage, as well as limited access to medical care for adequate diagnosis and treatment (Couzos & Carapetis 2003). These conditions are virtually never diagnosed in non-Indigenous Australian children (Carapetis et al. 1997).
- In addition, in 2005 Aboriginal children continued to die from serious complications arising from certain illnesses and infections. Deaths from such complications are infrequently seen in non-Indigenous children. These deaths again highlight the vulnerability of Aboriginal children and the impact of significant socioeconomic disadvantage on their health and wellbeing.
- These trends will be monitored by the Committee in coming years and relevant

recommendations will be made to prevent such deaths in the future.

Transport-related Deaths

- The Committee will continue to seek more detailed information about the circumstances and causes of transport-related fatalities to enable closer examination of these deaths. For example, details concerning road conditions, vehicle type, and potential risk factors related to drivers and passengers (such as alcohol and drug use and driver experience) are not yet known in most of these cases.
- The Committee notes the reports from child death teams and committees in other States of the incidence of driveway fatalities in those States. Based on these reports and the circumstances of deaths occurring in South Australia in 2005, the Committee plans to work in partnership with relevant agencies to determine what preventative actions can be taken in this State.
- The Committee notes the introduction of the graduated licensing scheme for new drivers which has been effective from November 2005. The Committee will continue to monitor the involvement of young drivers in transport-related fatalities to determine whether, in terms of deaths recorded on the Committee's database, this scheme has an impact on the circumstances surrounding the deaths of young drivers or passengers.
- The Committee notes the number of children in 2005 who died in transport-related fatalities who had previous contact with Families SA. The Committee will continue to monitor the circumstances and causes of similar deaths in the coming year.

Deaths from Accidental Asphyxia

- In reviewing the information concerning the circumstances of deaths from accidental asphyxia the Committee notes the association between these deaths and identifiable risk factors such as the young age of mothers and indicators of socioeconomic disadvantage. In addition, in deaths attributed to SIDS and to accidental asphyxia, the Committee was concerned by frequent reports of the presence of soft pillows or mattresses, u-shaped pillows and folded quilts in the beds or cots of these infants.
- The Committee recommends that a public health campaign for young parents be developed concerning safe sleeping. Careful consideration should be given to the ways in which this campaign is delivered both in terms of the material that is developed and the ways it is disseminated. The campaign should involve Government and non-Government agencies who deliver services to infants and their families in South Australia.
- The Committee strongly recommends that a product safety analysis be undertaken as soon as possible if the death of a child has been attributed to a product such as a bed or cot. This recommendation should apply to any deaths of infants attributed to a particular product.

Suicide

- The Committee notes the involvement of child protection, education and health services in the lives of several children prior to their death. The Committee is currently considering each of these deaths for in-depth review.
- The Committee notes with concern the over-representation of Aboriginal young men in the deaths attributed to suicide or potentially attributable to suicide and will continue to monitor the circumstances and causes of similar deaths in the coming year and where relevant make recommendations which may assist in the prevention of future deaths.

Fatal Assault and Neglect

- Once coronial and criminal investigations have been completed, the deaths of these children may be subject to in-depth review by the Committee.

Drowning

The Committee emphasises the importance of adult supervision of children where any body of water is concerned, and:

- the particular need for supervision of toddlers;
- recognition that children may not be aware of the risks associated with bodies of water; and
- recognition of the risks posed by small amounts

of water such as that in a bucket or bath tub.

Fire-related Deaths

- The Committee will await the Coroner's report of an inquiry into a number of deaths before considering recommendations.

In-Depth Review of Deaths

The Committee has conducted two in-depth reviews since February 2006. The issues identified by the Committee concern interagency exchange of information, case planning, management and monitoring, and consideration of the child in the context of their family, community and culture (See Section 3).

CONCLUSIONS

This is the first year of reporting for the Child Death and Serious Injury Review Committee and the members recognise the need to be suitably cautious in any conclusions they may draw from the information that has been made available to them. This caution is especially relevant given the relatively small number of child deaths that occur each year in South Australia. As patterns emerge in the information that is being collected, the Committee will increase its capacity to contribute to the prevention of deaths of children in South Australia.

Structure of the Annual Report

This report has been organised into four sections.

SECTION 1: ACTIVITIES, PROGRESS AND PLANS 2005-2006

This section reviews the reasons for the establishment of the Committee. It provides an overview of the Committee's activities in the financial year reporting period 2005-2006, the Committee's contribution to South Australia's Strategic Plan and a synopsis of the legislation that established the Committee's powers and functions. An outline of the Committee's aims for the coming year is also presented in this section.

SECTION 2: CHILD DEATHS SA 2005

With the agreement of the Minister for Families and Communities and in accordance with common reporting procedures, although submitting its report at the conclusion of the financial year 2005-2006, in this section the Committee reports on the deaths of children in South Australia in the 2005 calendar year.

SECTION 3: IN-DEPTH REVIEWS 2005-2006

Since the Committee's enabling legislation was proclaimed in February 2006, the members have been able to undertake the in-depth review of certain cases of child death. The report presented in this section outlines the review process, the cases the Committee has identified for review, and a synopsis of the recommendations arising out of the reviews it has undertaken.

SECTION 4: REFERENCES

This section provides details concerning methodological issues, discussion of definitional issues referred to in Section 2 and a bibliography

Section 1

Activities, Progress and Plans 2005 – 2006

Section 1: Activities, Progress and Plans

1.1 ESTABLISHMENT

A key recommendation of the Layton Report *Our best investment: a State plan to protect and advance the interests of children* was the establishment of the Child Death and Serious Injury Review Committee. The purpose of this Committee was to review cases of child deaths or serious injuries and, through these reviews, to identify legislative or administrative means of preventing future deaths or injuries.

In April 2005 at the recommendation of the Minister for Families and Communities, Cabinet issued directions informally establishing a Child Death and Serious Injury Review Committee in anticipation of its establishment by statute. It gave the interim committee specific powers and functions, reporting obligations and disclosure principles, and a membership with knowledge, experience and expertise in a range of relevant areas including child forensics, psychology, advocacy, health, justice and Aboriginal and youth issues.

The interim committee operated under these directions until it was formally established by statute in February 2006 and the Chair and members were officially appointed by the Governor.

From its inception, the Committee has been assisted by a small secretariat located within the Department for Families and Communities.

The Committee's administrative, financial and human resource management is overseen by this department.

Funding from the *Keeping them Safe* initiative was allocated for the establishment of the Committee.

1.2 COMMITTEE ACTIVITIES

Section 52P of the Act requires the Committee to meet at least five times in each year. From 1 July 2005 to 30 June 2006 the Committee met on ten occasions.

1.2.1 April 2005 - February 2006

During this period, before its formal establishment, the interim Committee:

- developed a set of guiding principles;
- developed guidelines and processes for the collection, storage and retrieval of confidential and sensitive information;
- established a review process and methodology;
- defined key terms, including 'serious injury';
- developed memoranda of understanding and protocols for the release of information about children who had died or suffered serious injury with key Government agencies including:
  - Department for Families and Communities;
  - Department of Health and its incorporated health units;
  - South Australian Police;
  - Births, Deaths and Marriages; and
  - Department of Education and Children's Services.
- developed a database for the storage and analysis of information about the circumstances and causes of child deaths and serious injuries in South Australia, from which to identify trends and patterns in deaths and serious injuries that can be used to support recommendations for statutory or administrative change;
- commenced the collection and analysis of information concerning the circumstances and causes of child deaths from 1 January 2005;
- made recommendations to the Minister about the content of establishing legislation; and
- developed ongoing links with similar interstate and international committees.

1.2.2 February 2006 - July 2006

During this period the Committee functioned under the new Part 7C of the Act (see Section 1.3 Legislation) and:

- commenced screening all cases of child death from 1 January 2005 to the present;
- considered the eligibility of all screened cases for in-depth review and chose eligible cases; and
- completed the in-depth review of two cases of child deaths.

1.3 LEGISLATION

The legislation establishing the Committee is contained in Part 7C of the Act. Part 7C was inserted into the Act by the *Children's Protection (Keeping them Safe) Amendment Act 2005*. It came into operation on 1 February 2006.[1]

Reference:

1 The Children's Protection Act 1993 can be accessed at the following web-link: http://www.parliament.sa.gov.au/Catalog/legislation/Acts/c/1993.93.un.htm

In summary, the legislation authorises the Committee to:

- maintain a database of the circumstances and causes of child death or serious injury that occurs in South Australia;
- review child deaths and serious injury with the aim of identifying legislative or administrative means of preventing such deaths or injuries in the future;
- request any person to produce a document that is relevant to a review;
- enter into arrangements with other Government agencies for the release of information relevant to a review;
- recommend legislative or administrative change based on its reviews;
- monitor the implementation of its recommendations; and
- maintain links with similar bodies interstate and overseas;

The Committee is not required to individually review all cases of child death or serious injury and may not undertake a review if this would compromise any ongoing criminal investigation or coronial inquiry. However, it should review cases:

- where there are indications of abuse or neglect; or
- where the child or a member of the child's family has been the subject of a child protection notification in the past three years; or
- where the child was under the guardianship of the Minister or was in the care of a Government agency; or
- that have been referred to it by the Coroner.

The information acquired by the Committee cannot be disclosed to any person and is not required to be disclosed under the *Freedom of Information Act 1991.*

The Committee must report to the Minister for Families and Communities as required and annually. The Minister must table the Committee's annual report in Parliament.

1.4 THE COMMITTEE'S CONTRIBUTION TO SOUTH AUSTRALIA'S STRATEGIC PLAN

Objective Two of South Australia's Strategic Plan focuses on improving quality of life and the wellbeing of the community and of individuals. The Committee's recommendations, which arise out of monitoring the trends and patterns in child deaths and the in-depth review of certain cases of child deaths, aim to improve the health and wellbeing of South Australia's children. In particular:

- Over the coming years the Committee will monitor trends in the Infant Mortality Rate and may make recommendations which aim to contribute to the reduction of this rate.
- The Committee notes the goal of South Australia's Strategic Plan to achieve a reduction in road fatalities of 40 percent by 2010. The Committee will continue to monitor and comment on the trends in transport-related fatalities, in order to contribute to this goal.

One of the key points in Objective Six of South Australia's Strategic Plan is improving Aboriginal wellbeing with priority actions to improve Aboriginal health outcomes and life expectancy. In both its monitoring and in-depth review functions, the Committee will continue to comment on the circumstances and causes of the deaths of Aboriginal children, and where relevant will make recommendations that contribute to the prevention of deaths in the future.

1.5 FUTURE PLANS

1.5.1 Serious Injuries

In 2005-2006 the Committee has not reported on the incidence of serious injuries to children or reviewed in-depth cases of serious injury. The Committee is aware that this work will add considerably to its ability to contribute to the prevention of harm to children in South Australia. Once further resources are obtained, the Committee will commence work in this area.

1.5.2 Ongoing Activities

In the coming financial year, 2006-2007, the Committee will continue to fulfill its statutory obligations by monitoring the trends and patterns in the deaths of children in South Australia and through the in-depth review of certain cases of child death. The Committee will make recommendations arising out of these activities and will monitor and report on the outcomes of the recommendations it made in the previous year.

Section 2

Child Deaths South Australia 2005

Section 2: Child Deaths SA 2005

2.1 WHY REPORT ON CHILD DEATHS?

This section of the Committee's report describes the circumstances and causes of the deaths of children (aged between zero and 17 years) in South Australia from 1 January 2005 to 31 December 2005.

The prevention of deaths and serious injury to children from causes that are amenable to change is a significant step towards improving the health and wellbeing of children in South Australia. Opportunities for prevention can be identified through the systematic collection and analysis of morbidity and mortality data. Improvements to child-focused systems and services and changes to policies or practices can assist in the prevention of further deaths and injuries, and contribute to reducing human and financial costs to the community and to Government.

The majority of deaths of children are from 'natural' causes such as diseases and infections, genetic conditions and cancer. Some of these deaths may be preventable. Deaths from 'external' causes such as transport-related fatalities, suffocation and suicide also offer opportunities for prevention and the circumstances and causes of these deaths are considered in more detail in this section of the report.

For this first report, the Committee's ability to identify patterns and trends of child death and serious injury is limited because:

- Trends and patterns in the deaths of children usually emerge over a period of years. The Committee's database only dates back to the beginning of 2005.
- Trends and patterns in the deaths of children are usually identified when there are a significant number of deaths from a particular cause or related to particular circumstances. In South Australia, where the number of children under 18 years of age is less than 350 000, the total number of deaths of children in any one year will always be relatively small both in a statistical sense and in comparison with the number of deaths that occur in other States.

Although the Committee is not precluded from making recommendations regarding the prevention of deaths resulting from particular causes or circumstances, these limitations need to be acknowledged.

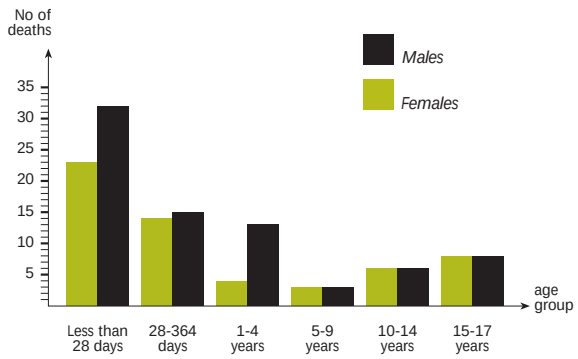
The Committee also recognises the need to review the circumstances and causes of individual deaths in the context of interstate and international knowledge about similar deaths. For example although only one child may die in an all terrain vehicle fatality in South Australia in any one year, this would not preclude the Committee from recommending preventative action if national and international trends confirmed the need for such action.

The *Social Health Atlas of South Australia* (Glover et al. 2006) may assist by providing a context to the information presented in Sections 2 and 3 of this report.

2.2 OVERVIEW OF CHILD DEATHS 2005

Between January and December 2005, 135 children died in South Australia. Seventy-seven of the 135 were males. Figure 1 shows the number of children who died by sex and age group.

Figure 1: Child deaths by sex and age, South Australia 2005*



** Source: Child Death and Serious Injury Review Committee database*

Figure 1 shows that the majority of deaths were of infants aged less than 28 days (40.7%). This follows the same pattern of deaths seen nationally and in other States and Territories. The lowest percentage of child deaths was in the 5-9 year age group (4.4%). In younger age groups, more males than females died however, in the 5-9, 10-14 and 15-17 year age groups, equal numbers of males and females died.

2.2.1 Death Rates

Of the 135 children who died in South Australia, thirteen were usually resident outside the State. Death rates, excluding these thirteen children from the analysis, are given in Table 1.

Table 1: Child death rates (per 100 000 children) by sex and age, South Australia 2005*

Age	Female		Male		Total	
at Death	No.	Rate	No.	Rate	No.	Rate [2]
Under 1	33	391.0	42	474.0	75	433.6
1 - 4	4	11.6	12	33.3	16	22.7
5 - 9	3	-	3	-	6	6.3
10 - 14	4	8.1	6	11.6	10	9.9
15 - 17	8	27.1	7	22.2	15	24.5
ALL AGES	52	31.0	70	39.6	122	35.4

**Source: Child Death and Serious Injury Review Committee database*

The overall death rate for children under 18 years of age in South Australia in 2005 was 35.4 deaths per 100 000 children. The death rate for males was 39.6 deaths per 100 000 male children. The death rate for females was slightly lower (31.0 deaths per 100 000 female children). The highest death rate occurred for children aged less than one year (433.6 deaths per 100 000 children of this age).

These rates are comparable to the rates reported in other States. For example the death rate for children in NSW in 2004 was 34.1 deaths per 100 000 children (NSW Child Death Review Team 2005, *Annual Report 2004*), with a higher rate reported for males (37.9 deaths per 100 000 male children) compared to females (30.0 deaths per 100 000 females).

Infant Mortality Rate

The survival rate of infants in their first year of life is commonly viewed as an indicator of the general health and wellbeing of a population. A low infant mortality rate is a major contributor to increased life expectancy.

Eighty-four children under one year of age died in South Australia in 2005. This includes the deaths of nine infants who usually resided outside the State.

The Infant Mortality Rate (IMR) is defined as the number of deaths per 1000 live births between birth and exactly one year of age. Including the deaths of children normally resident outside the State in this calculation, the Infant Mortality rate was 4.6 deaths per 1000 live births[3].

2.2.2 Causes of Death

In any one year, there will be significant fluctuations in the number of children who die from a particular cause in South Australia. These fluctuations are to be expected given the relatively small numbers of deaths that occur in this State.

Overall, nearly 70 percent of deaths in 2005 were attributed to natural causes. Over 30 percent of deaths occurred in children less than one year of age from conditions originating in the perinatal period, making these conditions the leading cause of death of all children in South Australia in 2005. Most of these deaths occurred in the first four weeks of life. These conditions include spontaneous premature labour, infections, haemorrhage and maternal conditions affecting the newborn.

Congenital and chromosomal abnormalities accounted for a further 14.8 percent of deaths, making this the second most common cause of death in 2005. All of these deaths occurred in infants aged between zero and four years.

The third most common cause of death for children in South Australia was transport-related fatalities. These fatalities accounted for 12.6 percent (17 deaths) of all deaths. Nearly half the children who died in transport-related fatalities were aged between 15 and 17 years (8 deaths). These deaths included both on and off road incidents, for example children as passengers, drivers, pedestrians and cyclists - and also incidents that involved other vehicles such as 'all terrain' vehicles and those that occurred in driveways or on private properties.

Table 2 (overpage) gives details of the ICD-10[4] causes of death codes for all children who died in South Australia in 2005 taking into account their age group.

2.2.3 Age Patterns and Causes of Death

The majority of children died in the first 28 days of life and over half of the deaths that occurred in 2005 were in the first year of life (62.1%). Very few children died between the ages of five and nine years (4.4%). Details concerning deaths in each age group are discussed below.

Under 28 days

Fifty-five children aged less than 28 days died. Fifty-four of these deaths were from natural causes, with conditions originating in the perinatal period the leading cause of death.

Reference:

2 See Section 4.1 'Methodological Issues' for details concerning the calculation of crude death rates. These rates have been calculated using the ABS population projections for 2005.

3 This rate was calculated using information about live births in 2005 in SA supplied by the South Australian Maternal, Perinatal and Infant Mortality Committee of the Department of Health. This committee provides a detailed annual report concerning the deaths of infants under one year of age. See Section 3.3 'Other Agencies Involved in Reviewing the Deaths of Children in South Australia'.

4 See Section 4.1.2 'Coding for Cause of Death' for an explanation of ICD-10 cause of death codes.

Table 2: Causes of child deaths (ICD-10) by age, South Australia 2005*

ICD-10 Chapter Description	< 28 days	28 days to 1 year	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total ICD-10 code	% ICD-10 code
Natural Causes								
A00-B99 Certain infections and parasitic diseases	1	2					3	2.2
C00-D48 Neoplasms			2	1	3	2	8	5.9
E00-E90 Endocrine, nutritional and metabolic diseases	1	1[a]	2	1			5	3.7
G00-G99 Diseases of the nervous system		1	3	1			5	3.7
I00-I99 Diseases of the circulatory system					1	1	2	1.5
J00-J99 Diseases of the respiratory system		3					3	2.2
K00-K93 Diseases of the digestive system				1			1	0.7
M00-M99 Diseases of the musculoskeletal system and connective tissue					1	1	2	1.5
P00-P96 Certain conditions originating in the perinatal period	39	5					44	32.6
Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities	13	4	3				20	14.8
Total number of deaths from natural causes	***54***	***16***	***10***	***4***	***5***	***4***	***93***	***68.9***
SIDS and undetermined causes								
R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified		5	1				6	4.4
External causes of morbidity and mortality								
V01-V99 Transport accidents			3	1	5	8	17[b]	12.6
W20-W49 Exposure to inanimate mechanical forces				1			1	0.7
W65-W74 Accidental drowning and submersion		1			1		2	1.5
W75-W84 Other accidental threats to breathing	1	5					6	4.4
X00-X09 Exposure to smoke fire and flames			2				2	1.1
X60-X84 Intentional self harm						1	1	0.7
X85-Y09 Assault		2	1				3	2.2
Y10-Y34 Event of undetermined intent					1	3	4[c]	3.0
Total number of deaths from external causes	*1*	*8*	*6*	*2*	*7*	*12*	*36*	*26.7*
TOTAL (deaths per age group)	**55**	**29**	**17**	**6**	**12**	**16**	**135**	**100**
% (deaths per age group)	**40.7**	**21.4**	**12.5**	**4.4**	**8.9**	**11.9**	**100**	

a The Committee will report on this death in Section 2.4.4 'Fatal Assault and Neglect'.

b The Committee will report on two of these deaths in Section 2.4.6 'Fire-Related Deaths'.

c The Committee will report on these deaths in Section 2.4.3 'Suicide'.

** Source: Child Death and Serious Injury Review Committee database.*

Twenty-eight days to one year

Deaths in this age group accounted for 21.4 percent of all deaths in 2005. Conditions originating in the perinatal period and congenital malformations and chromosomal abnormalities accounted for the majority of deaths from natural causes (16 deaths) and these are the leading causes of death in this age group. Five of the eight deaths from external causes were attributed to accidental threats to breathing. Sudden Infant Death Syndrome (SIDS) accounted for three deaths. A death attributed to SIDS generally indicates that no identifiable cause of death can be found.

One to four years

Seventeen children died in this age group, accounting for 12.5 percent of all deaths. Deaths from natural causes were the leading cause of death (10 deaths). Six children died from external causes, with transport-related deaths the most prevalent cause (3 deaths).

Five to nine years

The smallest number of children died in this age group (6 deaths, 4.4%). This small number of deaths makes comparisons between natural and external causes of death inadvisable.

Ten to fourteen years

Twelve children (8.9%) died in this age group, with similar numbers dying from natural and external causes. The deaths of three of the five children attributed to natural causes were from neoplasms (tumours or new growth in a body tissue, which may be benign or malignant). The leading external cause of death was transport-related fatalities.

Fifteen to seventeen years

Transport-related fatalities were the leading cause of death in this age group (8 out of 16 deaths). The number of deaths from all external causes (12 deaths) is far greater than the number from natural causes (3 deaths) in this age group. With only a small number of deaths from natural causes, there is no discernable pattern. The Committee will report on the three deaths from undetermined intent in the Section 2.4.3 'Suicide' as members considered the causes and circumstances surrounding these deaths to be similar.

2.2.4 Deaths of Children Usually Living Outside South Australia

The Registrar, Births Deaths and Marriages recorded the place of residence for 13 children who died in South Australia as being outside of the State. This comprised approximately ten percent of the deaths of children in South Australia for 2005.

The place of usual residence for the majority of these children (7 children) was the Northern Territory. Other children were normally residents of Victoria, NSW, and Western Australia. One child was normally resident outside Australia.

Eleven children died from natural causes and of these deaths, eight children were less than one year of age. With the exception of one transport-related fatality, all of these deaths occurred in South Australian hospitals.

These deaths will be noted in the relevant sections of the report.

2.3 DEATHS OF VULNERABLE CHILDREN

The legislation that underpins the work of the Committee recognises that there are certain groups of South Australian children who are vulnerable and at greater risk of poorer health and wellbeing. Such groups include Aboriginal children, children who are known to the child protection system within Families SA (formerly Children, Youth and Family Services) and children who are under the Guardianship of the Minister or who are or have been, in care.

2.3.1 Aboriginal Children

In South Australia, the substantially poorer health and wellbeing of Aboriginal people is well documented (South Australian Government. 2003; Australian Bureau of Statistics and Australian Institute of Health & Welfare 2005). Key social and economic indicators such as poverty, employment, housing, education, imprisonment and health show that Aboriginal people are at significantly higher risk of disadvantage compared with non-Aboriginal South Australians (South Australian Government. 2003). This is the result of many underlying causes, including the intergenerational effects of forced separations from family and culture, and the lasting impacts of colonisation and discrimination (Hetzel et al. 2004).

As a consequence, Aboriginal people are at greater risk of poorer life outcomes, and there has been substantial evidence for decades that the health of Aboriginal children is significantly worse than that of the non-Indigenous child population (ABS and AIHW, 2005). This is exemplified by the higher infant mortality rate that has been reported for Aboriginal infants - 9.4 deaths per 1000 live births - more than double the rate for the overall South Australian population.

In 2005, 17 children died who were identified by the Registrar as Aboriginal. This represents 12.5 percent of the total number of deaths of children in this year.

The rate of death among Aboriginal children is estimated to be 110.17 deaths per 100 000 Aboriginal children aged between zero and 17 years. Based on these rates, an Aboriginal child is three times more likely to die than a non-Aboriginal child [5].

Aboriginal Children - Age, Sex and Cause of Death

Over half of these children were under one year old at the time of death (9 deaths). Five were in the 15 - 17 year age group. A greater number of male Aboriginal children died than female Aboriginal children (12 deaths, 70.6%) and this was the case in all age groups. This is a considerably higher proportion of deaths amongst males when compared to the overall percentage of males who died in 2005 (57%). Table 3 gives the cause of death by age for Aboriginal children.

Table 3: Deaths of Aboriginal children by age and cause, South Australia 2005*

Cause	<1	1-4 years	5-14 year	15-17 years	Total
Natural causes	5	1	2	2	10
SIDS and Undetermined	1				1
External causes	3			3	6
TOTAL	9	1	2	5	17

** Source: Child Death and Serious Injury Review Committee database*

Over half of the deaths of Aboriginal children (10 deaths) in 2005 were from natural causes, and half of these deaths (5 deaths) occurred in children less than one year old. In total, nine of the 17 deaths from all causes were children in this age group. Very few Aboriginal children died in the middle years of childhood. Five Aboriginal children aged between 15 and 17 years died, from various causes.

The Committee wishes to highlight that a number of deaths of Aboriginal children were the result of preventable natural causes, e.g. the complications of rheumatic fever. Acute rheumatic fever and rheumatic heart disease are typically associated with overcrowding, poor living conditions and other aspects of social and economic disadvantage, as well as limited access to medical care for adequate diagnosis and treatment (Couzos & Carapetis 2003). These diseases are a significant problem in the Indigenous Australian population of central Australia, among children in particular. In contrast, they are virtually never diagnosed in non-Indigenous Australian children (Carapetis et al. 1997).

In addition, Aboriginal children continued to die from serious complications arising from certain illnesses and infections. Deaths from such complications are infrequently seen in non-Indigenous children. These deaths again highlight the vulnerability of Aboriginal children and the impact of significant socioeconomic disadvantage on their health and wellbeing.

Aboriginal Children - Place of usual residence

Four of the 17 Aboriginal children who died were recorded by the Registrar to be usually resident in the Northern Territory. All of these deaths occurred at major public hospitals in Adelaide to which these children had been referred for further medical treatment.

Aboriginal Children - Socioeconomic disadvantage - SEIFA

The SEIFA (Socio-Economic Indexes for Areas) Index of Relative Disadvantage draws on a variety of personal and household characteristics (available from the 2001 Census) to rank household and socioeconomic status. The SEIFA Index placed all 13 children in the two quintiles (a quintile represents approximately one fifth of the population) of greatest disadvantage (Quintile 4 - 7 children; Quintile 5 - 6 children). Eight children or members of their family had contact with Families SA in the previous five years.

2.3.2 Children Living in Remote Areas - ARIA+

ARIA stands for Accessibility/Remoteness Index of Australia. This Index is a distance-based measure of remoteness. It defines five categories of remoteness based on road distance to service centres: Major City, Inner and Outer Regional, Remote and Very Remote. The Very Remote category indicates very little accessibility of goods, services and opportunities for social interaction. Therefore, the ARIA+ Index is an indicator of the degree of geographic remoteness of an area and is a more accurate indicator of disadvantage than subjective labels such as 'rural' or 'country'.

Table 4 shows the number and percentage of children who died in each area of accessibility/remoteness (excluding the deaths of 13 children who were not normally resident in the State). Death rates have been calculated using population estimates for each area.

Reference:

5 The relative risk of death for an Aboriginal child is 3.37, $p<0.0003$. 95% confidence intervals 1.89 - 5.98. The death rate excludes the deaths of children not normally resident in the State.

It can be seen from Table 4 that the majority of children who died in South Australia in 2005 lived in highly accessible areas. Although the death rates from Major Cities through to Remote areas show slight increases, these differences are not statistically significant.

Table 4: Child deaths by geographic remoteness, South Australia 2005*

ARIA + category	Number of deaths	%	Death Rate
Major City	70	57.4	31.0
Inner Regional	20	16.4	34.7
Outer Regional	16	13.1	40.3
Remote	8	6.6	47.3
Very Remote	8	6.6	133.8
TOTAL	122	100	

** Source: Child Death and Serious Injury Review Committee database.*

The high death rate in Very Remote areas must be interpreted with caution. It will be necessary for the Committee to gather data over several years in order to track and analyse these associations.

2.3.3 Children Living in Areas of Socioeconomic Disadvantage - SEIFA

The SEIFA (Socio-Economic Indexes for Areas) Index of Relative Disadvantage draws on a variety of personal and household characteristics (available from the 2001 Census) to rank household and socioeconomic status.

Table 5 gives the frequency and percentages of deaths in each SEIFA quintile where quintile 1 represents the most relatively advantaged populations (excluding the deaths of 13 children who were not normally resident in the State). Two deaths occurred in remote Aboriginal communities for which there is no postcode. These deaths were allocated to quintile 5.

Table 5: Child deaths & SEIFA quintiles of socio-economic disadvantage, SA 2005*

Quintile	Frequency	Percentage
1	21	17.2
2	14	11.5
3	29	23.8
4	30	24.6
5	28	23.0
TOTAL	122	100.0

** Source: Child Death and Serious Injury Review Committee database.*

Of the 122 children who died in South Australia (excluding the 13 children not normally resident in the State), nearly half lived in areas of relative socioeconomic disadvantage, as represented by quintiles 4 and 5 of SEIFA.

2.3.4 Children who had Contact with Families SA

The Department for Families and Communities (DFC) offers a range of services to people in the community, including emergency financial assistance, individual and family support, counselling (e.g. personal, financial) crisis care (including after hours care) and child protection. Children and their families who use the services of DFC are often socioeconomically disadvantaged (Glover et al. 2006).

Families SA is an agency of the Department for Families and Communities. One of this agency's key roles is protecting children from abuse and harm. In South Australia there is a legal requirement that certain professional and community workers must report suspected child abuse. Families SA receives reports about children at risk through their District Centres and the Child Abuse Report Line, which operates 24 hours every day.

Of the 135 children who died in 2005, 35 of these children or a member of their family had contact with Families SA in the previous five years. For 15 of these children, contact involved notifications to Families SA concerning child protection issues. For a further 11, these notifications concerned other members of their family (siblings, step siblings, parents). In nine cases, the most recent contact with Families SA involved requests for financial assistance only.

Table 6 gives details concerning the causes of death of these children.

Table 6: Child deaths and contact with Families SA by age and cause of death, SA 2005*

Cause of death	<1	1-4 years	5-14 year	15-17 years	Total
Natural causes	8	2	3	3	16
SIDS and Undetermined	2				2
External causes	5	1	6	5	17
TOTAL	15	3	9	8	35

** Source: Child Death and Serious Injury Review Committee database*

Almost equal numbers of children died from natural (16 deaths) and external causes (17 deaths). The majority of deaths occurred in children under one year old.

Of concern is the number of deaths in this group of children from sleep accidents. Three of the five children in the overall population known to have died as the result of 'sleep accidents' (smothering and suffocation due to unsafe sleep environments) had previous contact with Families SA. The Committee makes comment on this issue in the section of the report that considers such accidents (Section 2.4.2 'Accidental Deaths').

In addition, the number of children aged between 10 and 17 years who had contact with Families SA and died in transport-related fatalities (6 deaths) is also noted. In subsequent years, the Committee will continue to monitor the circumstances and causes of these deaths to determine whether there are underlying preventable risk factors that may be common to each case.

2.3.5 Summary - Deaths of Vulnerable Children

Patterns in the prevalence of death in groups of vulnerable children support the connection between socioeconomic disadvantage and poorer health and wellbeing. Aboriginal children were three times more likely to die than non-Indigenous children. Of particular concern were the indications that Aboriginal children were still dying from preventable diseases and morbid conditions that are rarely recorded as causes of death for non-Indigenous children.

A greater proportion of the children who died in 2005 lived in areas of socioeconomic disadvantage. A number of children had previous contact with Families SA. Of particular concern were the children in this vulnerable group who died from 'sleep accidents' and in transport-related fatalities. These trends will be monitored by the Committee in coming years.

2.4 PATTERNS OF DEATH FROM EXTERNAL CAUSES

2.4.1 Transport-Related Deaths

Transport-related fatalities were the leading external cause of death for children in South Australia in 2005. Fifteen children died in transport-related incidents in 2005[6]. This accounts for 11 percent of the total number of deaths from all causes in 2005 and for nearly half of the 36 deaths from external causes in this year.

In their most recent Annual Reports, both the NSW Child Death Review Team (2005) and the Queensland Commission for Children and Young People (2005) also recorded transport-related fatalities as the leading external cause of death.

Transport-Related Deaths - Age, Sex and Aboriginal Status

Over half of the children who died in transport-related fatalities were aged between 15 and 17 years (8 deaths). Three children in the one to four year age group died in transport-related fatalities and four children aged between five and 14 years died from this cause. Eight of the 15 children who died were male. One child was identified as Aboriginal.

Transport-Related Deaths - Circumstances of Death

In considering the circumstances of 11 deaths involving single or multiple vehicle collisions, the following factors were common to two or more of these incidents:

- Nine children were passengers. The South Australian Department for Transport, Energy and Infrastructure's (DTEI) road crash database indicates that between 2000 and 2004, the majority of children who died (52%) were passengers in transport-related fatalities.
- Two children were drivers. The DTEI road crash database indicated that over the five-year period 2000-2004, young people as drivers constituted the second largest group of fatalities. Transport SA's Road Crash Facts 2003 identified several attributes of young drivers that appear to contribute to their higher risk of road crashes. These attributes included lack of experience; risk taking behaviour; the use of older vehicles with fewer safety features; speeding; and peer pressure. This report also indicated that young men are over-represented in these fatalities. In the five-year period referred to above, 19 of the 25 driver fatalities were of young men.
- In two cases there was no evidence of seatbelts having been worn. In both of these incidents, the child was thrown from the vehicle. Of deaths involving either drivers or passengers, DTEI figures indicated that in 15 (19.2%) of the fatalities occurring between 2000-2004, the child who died was not wearing a restraint at the time of the crash.
- The majority of incidents occured in regional or rural locations.

Other transport-related incidents considered by the Committee involved driveways, level crossings, all terrain vehicles and light aircraft. There were no deaths of children as pedestrians or pedal cyclists recorded in 2005.

Reference:

6 This figure is two less that that reported in Table 2, the ICD-10 coding of causes of death as the Committee reports on two of these deaths in Section 2.4.6 'Fire-Related Deaths'.

Further analysis of these incidents is not yet possible, as access to relevant information is dependent on the completion of criminal and coronial investigations.

Usual residence - One death was of a child not usually resident in South Australia.

Transport-Related Deaths - Findings and Recommendations

- The Committee will continue to seek more detailed information about the circumstances and causes of transport-related fatalities to enable closer examination of these deaths. For example, details concerning road conditions, vehicle type, and potential risk factors related to drivers and passengers (such as alcohol and drug use and driver experience) are not yet known in most cases.
- The Committee notes the reports from other child death registers of the incidence of driveway fatalities in these States. The NSW Child Death Review Team 2005 *(Annual Report, 2004)* reported the deaths of three children aged between one and four years in driveway fatalities. They note a pattern of low speed driveway accidents has consistently been identified in this and previous NSW reports. The Queensland Commission 2005 *(Annual Report, 2004)* recorded eight driveway fatalities - seven children aged between one and four years and one child aged under one year. Based on these reports and the circumstances of deaths occurring in South Australia in 2005, the Committee plans to work in partnership with relevant agencies to determine what preventative actions can be taken in this State.
- The Committee notes the goal of South Australia's Strategic Plan to achieve a reduction in road fatalities of 40 percent by 2010. The Committee will continue to monitor and comment on the trends in the transport-related fatalities they record and where relevant make recommendations, in order to contribute to this goal.
- The Committee notes the introduction of the graduated licensing scheme for new drivers which has been in effect since November 2005. The graduated system has demonstrated success in other States in reducing fatalities for young drivers. The Committee will continue to monitor the involvement of young drivers in transport-related fatalities to determine whether, in terms of deaths recorded on their database, this scheme has an impact on the circumstances surrounding the deaths of young drivers.

2.4.2 Accidental Deaths [7]

Excluding deaths attributed to motor crashes, fires or drowning, child deaths from unintentional injuries most commonly include suffocation, strangulation and choking, falls and poisoning. Byard (2004) presented statistics from 369 cases of accidental death in children aged between zero and 16 years from 1963-1996. When deaths from transport-related-related crashes, drowning and fire-related events are excluded, cot/bed asphyxia accounted for 40 of the remaining 93 deaths during this period.

Six children died from accidental causes in 2005. Five children, all under one year of age, died from accidental asphyxia which occurred during sleep. One child died as the result of a crushing accident.

Accidental Asphyxia - 'Sleep Accidents'

The Committee has attributed the deaths of five infants under one year of age to suffocation or smothering. All five are listed in the Section 2.5 'SUDI' and have been included in the examination of the socioeconomic and risk factors associated with *explained* SUDI deaths (Section 2.5.1).

Accidental Asphyxia - Age, Sex and Aboriginal Status

These infants were aged between eight and 31 weeks. Three infants were aged between four and six months. Three infants were female and one infant was identified as Aboriginal.

Accidental Asphyxia - Circumstances of Death

Many of the 'unsafe sleep environment' risk factors that have been identified as modifiable risk factors for SIDS are those which may also reduce the incidence of accidental asphyxia amongst infants (Byard 2004; Fleming et al. 2000). These risk factors include:

- prone or 'side' sleeping;
- heavy wrapping of infants, in particular head covering (this may occur accidentally, especially if an infant 'doona' is used in the bed);
- use of pillows; and
- co-sleeping.

Reference:

7 This section reports on accidental deaths excluding those attributed to motor crashes, fires and drowning.

Relevant factors that have been identified in relation to *explained* deaths of infants include: young age at death (<1 month); peak incidence in winter months; low birth weight and shorter gestation; young mothers; indicators of socioeconomic disadvantage such as parents with less education and parents receiving income support; illness of the infant in the 24 hours before death; and maternal smoking (Fleming et al. 2000).

Identifiable risk factors for the five deaths reported here included:

Season - Four of these deaths occurred in the winter months (June - August).

Co-sleeping - Sometimes referred to as 'over-laying', these situations usually involve infants being placed to sleep under bed clothes with sleeping adults, but can also include infants who have died when their mother has fallen asleep whilst breast-feeding. The identifiable risks for overlaying are not clear except that the risk may be greater if the sleeping adults are fatigued, intoxicated, sedated or over weight (Byard, 2004; Fleming et al. 2000).

Beds, cots and bedding - The four deaths which occurred in bassinettes or cots were notable because of the presence of soft mattresses, soft pillows and u-shaped pillows and numerous blankets or quilts in the bed. The mattresses and pillows were of primary concern in the suffocation or smothering of these infants as was the use of non-standard beds.

Illnesses - The parents of all five infants reported cold or flu-like symptoms in the days or weeks prior to the infant's death. Two had been seen by a medical practitioner for these symptoms in the days before their death, but no child was taking prescribed medication.

Age of mothers - Three of these mothers were aged between 18 and 21 years.

Socioeconomic disadvantage - All five children lived in areas considered to be areas of relative socioeconomic disadvantage, with two children each at quintiles 3 and 5 and one at quintile 4. Three families had previous contact with Families SA for child protection issues or financial aid.

Accidental Asphyxia -
Findings and Recommendations

- In reviewing the information concerning the circumstance of the deaths from accidental asphyxia the Committee notes the association between these deaths and identifiable risk factors such as the young age of mothers and indicators of socioeconomic disadvantage. In addition, in deaths attributed to SIDS and to accidental asphyxia, the Committee was concerned by frequent reports of the presence of soft pillows or mattresses, u-shaped pillows and folded quilts in the beds or cots of these infants.
- The Committee recommends that a public health campaign for young parents be developed concerning safe sleeping. Careful consideration should be given to the ways in which this campaign is delivered both in terms of the material that is developed and the ways it is disseminated. The campaign should involve Government and non-Government agencies who deliver services to infants and their families in South Australia.
- The Committee strongly recommends that a product safety analysis be undertaken as soon as possible if the death of a child has been attributed to a product such as a bed or cot. This recommendation should apply to any deaths of infants attributed to a particular product.

2.4.3 Suicide

In any report concerning suicide, the issue of definition is crucial. The majority of studies concerning suicide rates will usually conclude that because of definitional issues, the rates of suicide in any community are under-reported. The focus of these definitional issues is often whether it can be clearly established that the person intended to kill themselves. In this section, the Committee considers deaths where intent was established and deaths where intent was not established but careful examination of the circumstances of the death indicated a probable intention to die. Further discussion of this issue can be found in Section 4.3 'Definition: Suicide'.

The Committee considers that five deaths in 2005 were attributable to suicide.

Suicide - Age, Sex and Aboriginal Status

Four children were aged between 15 and 17 years and one child was aged between 10 and 14 years. Four were male and two were identified as Aboriginal young men living in remote areas of South Australia.

Suicide - Circumstances of Death

In four of these cases the mode of death was hanging. Three incidents occurred in the child's home. Only one child clearly expressed an intent to commit suicide.

In considering these deaths, the Committee notes the following factors common to two or more cases:

- alcohol and/or drug use (cannabis and petrol-sniffing);
- prior incidents of self-harm or unsuccessful attempts at suicide;
- the role of precipitating events such as problems at school and at home;
- stress in key relationships with family members, peers and boy or girl friends;
- notifications to child protection agencies;
- prior admission to hospital for self-harm/attempted suicide;
- reports of 'sadness' or depression from those close to the child.

In 1999 a literature review was undertaken by Cantor at al. as part of the Australian Government's National Youth Suicide Prevention Strategy. This review considered the evidence available concerning the risk factors for suicide in young people and came to the following conclusion:

'The account that emerges suggests that suicidal behaviours in young people are frequently the end point of adverse life sequences in which multiple risk factors combine to encourage the development of suicidal behaviours.' (Cantor et al. 1999 p 245)

The risk factor domains identified in this review are reflected in those that were common to two or more of the deaths reported in this section.

Suicide - Findings and Recommendations

- The Committee notes the involvement of child protection, education and health services in the lives of several children prior to their death. The Committee is currently considering each of these deaths for in-depth review.
- The Committee notes with concern the over-representation of Aboriginal young men in the deaths attributed to suicide. The Committee considers that the circumstances of these deaths of Aboriginal children in remote areas of the State highlights the cumulative impact of historic dispossession, socioeconomic disadvantage, discrimination and isolation, fewer opportunities for employment and other opportunities and a lack of services for young people living in remote Aboriginal communities (Tatz 2001). Other studies (ABS and AIHW 2005) have reported that for Aboriginal males aged between zero and 24 years, the rate of death from intentional self-harm is three times the corresponding age-specific rate for non-Indigenous males. The Committee is aware of the work currently being undertaken in the Far North of South Australia by numerous Government agencies that aim to improve the lives of people in these Aboriginal communities.
- The Committee will continue to monitor the circumstances and causes of similar deaths in the coming year and where relevant make recommendations to prevent future deaths.

2.4.4 Fatal Assault and Neglect

Fatal assault of children has generally been defined as *'the death of a child from acts of violence perpetrated upon him or her by another person.'* (Lawrence, 2004; p 842). Lawrence and Irvine (2004) note that little attention has been paid to fatal neglect and as a consequence, there is no commonly accepted theoretical framework that defines or explains this cause of death. These issues are discussed further in Section 4.3 'Definition: Fatal Assault and Neglect'.

Four children died as the result of fatal assault or neglect in 2005.

Fatal Assault and Neglect - Age, Sex and Aboriginal Status

Three of these infants were male and aged approximately eight weeks. The remaining child was aged between one and two years. One infant was identified as Aboriginal.

Fatal Assault and Neglect - Circumstances of Death

In terms of the typology of cases of fatal assault (see Section 4.3 'Definition: Fatal Assault and Neglect') the deaths from fatal assault reported here can be classified as cases of 'fatal child abuse.' The children dying from fatal neglect did not appear to have had their basic needs met.

Factors common to two or more of these deaths included:

- The young age of the infants. In Australia, as in other countries, deaths of children from fatal assault are rare; however young children are commonly identified as the age-group at greatest risk (Lawrence, 2004; Byard, 2004).

- These infants were in the care of either a parent or parents, including single mothers, biological and de facto parents.
- The majority of parents were young - under 25 years of age.
- Parental substance use problems.
- Extensive contact with child protection systems in the months preceding the infant's death.
- Transience - families had often moved several times in the years or months preceding the death.

Fatal Assault and Neglect - Findings and Recommendations

- Once coronial and criminal investigations have been completed, the deaths of these children may be subject to in-depth review by the Committee.

2.4.5 Drowning

Drowning can occur in as little as five centimetres of water and common locations include swimming pools, beaches, dams, rivers and lakes. Drowning can also occur in bath tubs, tanks and buckets, ponds and water features.

There were two drownings recorded in 2005. One was recorded as an explained sudden unexpected death in infancy (Section 2.5 'Sudden Unexpected Death in Infancy).

Drowning - Age, Sex and Aboriginal Status

One child was under one year of age, the other was in the 15-17 year age range.

Drowning - Circumstances of Death

The circumstances of these deaths were diverse. Neither occurred in rural areas, but both were in a home environment.

Reports from other child death registers highlight that the risk of drowning is greater when children are young. For example, 16 children drowned in NSW in 2004 (NSW Child Death Review Team 2005 Annual Report 2004). Ten of these 16 fatalities were of children aged between one and four years. The Queensland Commission (2005) noted 20 drownings over the 18 month period of their report and 14 of these were of children in the one-four year age group. The Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity (2005) reported eight deaths from drowning in 2004 for children aged between zero and 14 years. Six of these children were under the age of five. Swimming pools, natural bodies of water, dams and garden ponds were all noted as the location for drowning. Each of these reports identified issues such as supervision and pool fencing as key issues in prevention of drowning.

Planning SA notes that cases of near drowning are also a significant issue in any State and that for every drowning death in the zero to five year age group, there are approximately three to four children admitted to hospital as a result of an immersion accident. Studies have shown that between five and 20 percent of children who are admitted to hospital as a result of an immersion accident suffer some form of mild to severe brain damage.

Drowning - Findings and Recommendations

Although the number of drownings in 2005 was low, the Committee would like to emphasise the importance of adult supervision of children where any body of water is concerned, especially:

- the particular need for supervision of toddlers;
- recognition that children may not be aware of the risks associated with bodies of water; and
- recognition of the risks posed by small amounts of water such as that in a bucket or bath tub.

2.4.6 Fire-Related Deaths

Fire-related deaths of children appear to be rare in South Australia. The Queensland Department of Emergency Services' Strategic Management and Policy Unit (1998) conducted research into fire fatality trends across Australia between July 1991 and June 1996. Across this five-year time period, the deaths of three children in South Australia are recorded. Deaths of children in house fires appear to be the most common cause of fire-related deaths both in South Australia (Byard, Lipsett and Gilbert, 2000) and in other States (NSW Child Death Review Team 2005; Queensland Commission 2005).

The Committee has recorded four deaths of children in South Australia in 2005 as fire-related deaths because of the similarities in the circumstances in which all four children died. All four deaths occurred on the day of the fires that swept through the Port Lincoln area of South Australia in January 2005.

Two children were in the one to four year age group, and two were in the 10-14 year age group. Two were male and two were female.

The Coroner is currently conducting an inquiry into the causes and circumstances of these deaths.

Fire-Related Deaths - Findings and Recommendations

- The Committee will await the Coroner's report of an inquiry into a number of deaths before considering recommendations.

2.5 SUDDEN UNEXPECTED DEATHS IN INFANCY [8]

In any given year, there are a substantial number of infants under one year of age who die suddenly and unexpectedly, and for whose death no immediate cause can be found. Currently these deaths may be assigned to the category of 'sudden unexpected death in infancy' (SUDI). This definition has been described as an 'umbrella' term that is used for all sudden unexpected deaths of infants under one year of age. In some cases autopsy findings and/or the close scrutiny of the circumstances surrounding the death may result in a cause of death being determined. In other cases however, despite thorough examination of all known factors, no cause can be attributed to the death. Deaths that remain unexplained after investigation may be attributed to 'sudden infant death syndrome' (SIDS) or may remain undetermined.

In 2005, 18 infants aged between seven days and 365 days died suddenly and unexpectedly. One infant under seven days of age died suddenly and unexpectedly and the Committee has attributed this death to an undetermined cause.

Table 7: Child deaths attributed to SUDI, South Australia 2005*

SUDI classification	Number of deaths
EXPLAINED	
Natural causes	6
'Sleep accidents' (smothering and suffocation)	5
Other explained causes (drowning and fatal assault)	2
Total of explained deaths	13
UNEXPLAINED	
SIDS 1A and 1B [9]	3
Undetermined	3
Total of unexplained deaths	6
TOTAL	19

** Source: Child Death and Serious Injury Review Committee database*

Table 7 gives details concerning the numbers of children who died suddenly and unexpectedly in 2005 and the causes attributed to their death.

Thirteen children died from *explained* causes. Six infants died from natural causes (infections and congenital malformations), five from 'sleep accidents', and two from other *explained* causes. Sociodemographic and risk factors relevant to this group of explained deaths are given below (Section 2.5.1 'Deaths from *Explained* Causes'). Five children died from *unexplained* causes including three deaths attributed to SIDS and three to undetermined causes. Deaths attributed to SIDS are examined in more detail in Section 2.5.2 'Deaths from *Unexplained* Causes'.

2.5.1 Deaths from *Explained* Causes

Despite the various causes of death included in the *explained* category of deaths, the CESDI studies (Fleming et al. 2000) identified a number of different risk factors associated with the deaths of infants from *explained* causes compared with a group of surviving infants matched for age. These factors included young age at death (<1 month); peak incidence in winter months; low birth weight and shorter gestation; young mothers; indicators of socioeconomic disadvantage such as parents with less education and parents receiving income support; illness of the infant in the 24 hours before death; and maternal smoking.

Deaths from Explained Causes - Age, Sex and Aboriginal Status

Age at death for these infants ranged from seven days to 49 weeks. Six of the 13 infants died in the first two months of life. Seven of these infants were female. Two children were identified as Aboriginal.

Deaths from Explained Causes - Identifiable Risk Factors

Socioeconomic disadvantage - Twelve of the thirteen infants lived in areas of relative disadvantage (Quintile 3 - 6 infants; Quintile 4 - 4 infants; and, Quintile 5 - 2 infants). These rankings appear to reflect the trend that Byard (2004) and Fleming et al. (2000) have commented on regarding the level of socioeconomic disadvantage that is often associated with SUDI.

Reference:

8 Section 4.4 'Definition: Sudden Unexpected Death in Infancy and Sudden Infant Death Syndrome' outlines the ways in which the Committee classifies deaths as SUDI and the reasons for this system of classification.

9 Table 10 (Section 4.4 'Definition: SUDI and SIDS') outlines the classification system for SIDS.

Illness - Of all the risk factors identified by Fleming et al. (2000), they considered that the illness of infants that was severe enough to warrant medical attention in the 24 hours before they died, to be of particular importance. Byard (2004) and the reports from other child death review teams (e.g. NSW Child Death Review Team 2005, *Annual Report 2004*) identified illness prior to the sudden unexplained death of a child as a common factor in SUDI deaths that was worthy of further exploration.

In this group of deaths, three children had symptoms of illness immediately prior to their death that resulted in their hospitalisation. These symptoms were ultimately associated with the cause of death. The parents of seven infants described their child as having had various cold and flu-like symptoms, or problems with reflux in the weeks prior to the death. Four of these parents had sought medical advice for these symptoms. None of these infants were taking prescribed medications at the time of their death.

2.5.2 Deaths from *Unexplained* Causes - SIDS

The numbers of infant deaths attributed to SIDS has fallen both nationally and in South Australia over the past decade. The ABS *SIDS Information Paper (2003)* notes a 57 percent reduction in the number of SIDS deaths when a comparison is made between the 1981-1990 period and the 1991-2000 period. They attribute this fall to the introduction of the National SIDS and Kids Reduce the Risk program.

Although acknowledging that there has been a genuine reduction in the number of deaths attributed to SIDS, others suggest that the more comprehensive definition of SIDS may also account for a portion of this reduction. They point to the concomitant increase in the number of deaths attributed to causes such as accidental asphyxia and to 'undetermined' causes (Byard, 2004).

The deaths of three infants were attributed to SIDS.

SIDS - Age, Sex and Aboriginal Status

These infants were aged between three and eight months. Two were males.

SIDS - Identifiable Risk Factors

The following characteristics of infants may predispose them to SIDS: being male; prematurity; high birth order and low birth weight; an extended stay in hospital; history of minor respiratory and gastro-intestinal illness in the days leading up to death; age between two and four months; and, a history of poor prenatal care.

In addition maternal smoking, the young age of mothers and socioeconomic disadvantage have been associated with increased risk of SIDS. Section 2.4.2 'Accidental Deaths' lists the risk factors for SIDS in the infant's sleep environment.

There were no commonalities across various factors such as seasonality or the time and duration of the last sleep for these three infants. With such a small number of deaths, it is not surprising that no pattern was discernable.

Sleep position - None of these infants had been placed to sleep on their stomachs. Two were found in the position they had been placed to sleep (side or back) and one child's position had changed from back to stomach.

Bedding - Of note in each of these deaths were the descriptions of items of bedding such as a soft mattress or various quilts folded to make a mattress, various pillows (including a 'baby' u-shaped pillow) and the number of blankets both over and under these infants that were in the cot at the time of death.

Birth weight and length of gestation - No information was available for these infants. In future, the Committee will consider requesting the health records for these infants, in addition to the coronial information usually available.

Socioeconomic disadvantage - SEIFA ratings indicated that all three infants lived in areas of greatest disadvantage.

Sudden Unexpected Deaths of Infants - Findings and Recommendations

- The Committee will continue to monitor the deaths of children attributed to SUDI and SIDS and to seek more information concerning these deaths.
- The Committee notes the bedding described in the deaths of children attributed to SIDS. The findings and recommendations presented in the Section 2.4.2 'Accidental Deaths' are relevant to this issue.

Section 3

In-depth Review of Child Deaths

Section 3: In-depth Review of Child Deaths

3.1 COMMITTEE'S POWERS AND FUNCTIONS

The proclamation of Part 7C of the Act in February 2006 has enabled the Committee to undertake the in-depth review of cases of child death and serious injury.

The powers and functions of the Committee are unique for a number of reasons:

- The Committee has the dual functions of keeping a database of the circumstances and causes of child deaths and of conducting in-depth reviews. In other Australian jurisdictions these functions have been spilt between organisations and Committees.
- The Committee's focus is not only the deaths of children 'known' to the child protection system, but also includes any child who may have died from actual or suspected abuse or neglect; in circumstances that may suggest systemic changes could be made to prevent similar deaths; children in detention; or cases referred by the Coroner.
- The Committee also has a legislative responsibility for the in-depth review of cases where a child has been seriously injured and survived. No other Child Death Committee in Australia undertakes this function.

3.2 IN-DEPTH REVIEW PROCESS

3.2.1 Eligibility

Diagram 1 (Section 4.1 'Methodological Issues') outlines the decision pathway for determining how cases screened by the Committee will be considered for in-depth review. In general, the Committee's screening teams determine whether the cases that fall into their jurisdiction should be taken to the full committee for possible in-depth review.

Under the Act there are two criteria for considering whether a case is reviewable. These criteria are outlined in Section 1.3 'Legislation'.

In accordance with Section 52S (4) of the Act, once a case has been selected for in-depth review, the Committee must then seek the advice of South Australian Police and the Coroner to ascertain whether an in-depth review process might interfere with criminal or coronial investigations. If there are no investigations pending or in process, then the Committee can proceed with its review.

3.2.2 Purpose

The Act defines the purpose of the Committee's reviews and can be generally described as identifying trends and patterns in cases of child death and serious injury; the review of policies practices and procedures designed to prevent such deaths and injuries; and to provide an objective basis for the Committee's recommendations.

Information can be requested from any person if the Committee considers that they may hold documents relevant to the review.

3.2.3 Reporting Requirements

The Act requires the Committee to report periodically to the Minister regarding its activities. The Committee submits a report to the Minister at the conclusion of each in-depth review. This report provides details of the case that has been reviewed including a synopsis of all relevant documents and records and the Committee's comments on the information in these documents. The report contains the Committee's recommendations regarding systemic issues that may contribute to the prevention of similar deaths in the future.

The Act requires that the Committee monitor the implementation of its recommendations. The Committee will report on this function in subsequent Annual Reports.

3.2.4 Conflict of Interest

The issue of conflict of interest is outlined in Section 6H(1) or 6H(5) of the *Public Sector Management Act.*

3.3 OTHER AGENCIES REVIEWING DEATH OR SERIOUS INJURY TO CHILDREN IN SOUTH AUSTRALIA

In addition to the South Australian Police and the Coroner, other agencies involved in investigating the deaths of children in South Australia include:

3.3.1 Maternal, Perinatal and Infant Mortality Committee

The Maternal, Perinatal and Infant Mortality Committee was established in 1985. Its terms of reference *(South Australian Health Commission Act s15)* are to advise the Chief Executive of the Department of Health on the pattern and causation of maternal, perinatal and infant deaths in the State and to recommend preventative actions including the education and training of medical and nursing professionals.

3.3.2 Families SA's Adverse Events Committee

The Adverse Events Committee was established in July 2004. This committee examines systemic issues in

relation to the deaths or serious injuries of children and young people who have been or are currently involved with Families SA via a Youth Court order, because their case was open at the time of the event or because of other involvements. The Committee also has the discretion to review serious events that have resulted in children and young people being at risk of significant harm. It focuses only on Families SA's policy, practice and systems issues.

A protocol has been developed for the release of information from the Adverse Events Committee to the Child Death and Serious Injury Review Committee. Where possible, the Committee will not commence its review into the death or serious injury of a child whose case is the subject of review by the Adverse Events Committee until that review has been completed. Once completed, the Adverse Events Committee report is released to the Committee.

3.3.3 Other Child Death or Serious Injury Review Processes in South Australia

The *Layton Report* (2003) identified several other ways in which the deaths or serious injuries of children may be reviewed in South Australia:

- anaesthetic deaths of children are reviewed for quality assurance purposes by the Faculty of Anaesthesia in the Royal Australasian College of Surgeons;
- individual death reviews may be conducted by staff in hospitals, some of which have paediatric services;
- the Injury Surveillance Unit of the Department of Health collects data on childhood accidents via the Accident and Emergency Departments of some public hospitals.

3.4 CURRENT ACTIVITIES

Since February 2005 the Committee has screened all cases of child death in 2005. At the initial level of screening, 134 of the 135 children who died in 2005 were considered by the Committee to be eligible for review under the Act i.e. the incident resulting in their death occurred in South Australia and/or they were normally resident in the State at the time of their death. One child was not normally resident in the State and the events leading up to this infant's death occurred outside South Australia.

Once this initial eligibility for review was established, the Committee considered the suitability of each case for review under Section 52S (3) of the Act.

Table 8 (overpage) outlines the cases considered eligible for review under S52S (3), by age of the child at death. The table also gives the current status of each case in the review process.

The majority of cases considered by the Committee for review had contact with Families SA in the three years preceding their death. Some children were receiving services from this agency ('open' cases) at the time of their death, others had been closed but contact had occurred in the previous three years. In the older age group causes of death were predominantly related to self-inflicted harm, whereas in younger age groups cases of fatal assault or neglect predominate.

As indicated in the final column, the Committee has reviewed two of these cases and the recommendations arising from these cases are discussed below. In the majority of cases, the Committee is awaiting the completion of criminal or coronial investigations before proceeding with their review. One case has been referred to the Committee by the Coroner for review.

3.5 SUMMARY OF ISSUES IDENTIFIED BY THE COMMITTEE

3.5.1 Interagency Issues

The Committee found that key opportunities for integrated and pro-active intervention were missed. These missed opportunities could be attributed to three main causes:

- ***Interagency exchange of information*** - In the cases reviewed, a number of agencies held significant information about the child and/or their family. However, key opportunities for the exchange of this information were missed or went unrecognised. The Committee acknowledges that there may be many reasons for these missed opportunities that are not documented in the information available to the members when undertaking these reviews. Legislation may prohibit exchange of information. Guidelines that define the boundaries for information exchange, both between or within organisations may be absent, misunderstood or not used. Training for workers that defines and promotes exchange of information may not be available. In the worst case scenario, the necessity for the exchange of information between agencies may not be recognised, at either a policy or an individual case level.

The recommendations arising out of the Committee's reviews highlight the need for consideration of

changes to policies or procedures both between and within organisations that will promote the exchange of information and ensure that key opportunities for such exchange are not over-looked.

- ***Case planning, management and monitoring*** - The Committee found that interagency case management and monitoring was absent or poorly undertaken by agencies involved in the provision of services to the child and their family. As such each agency was often unaware of the involvement of others in the lives of the child and family. Lack of awareness resulted in fragmented care and service that was inappropriate and/or not focused on the needs of the child as a whole person. Thus, opportunities to influence positively the child's wellbeing and development were missed, to the detriment of the child and their family.

This issue is closely related to the first issue of exchange of information. Integrated and pro-active case management and monitoring would by necessity require the exchange of information by all agencies providing services to a child and their family. The Committee recommended that a key agency be designated to assume responsibility for planning, management and monitoring of all service delivery to a child and their family. This would include responsibility for case conferencing to ensure all information about the child and their family is known and considered and responsibility for ensuring that case plans were implemented and evaluated.

- The child in context - The Committee found that key issues concerning the child, their family, their community and their culture were sometimes not considered in assessing risk and resilience and in developing case plans. As a consequence services were not delivered in ways that the child or their family found acceptable or could utilise. If information was exchanged between agencies and effective case management assured, these issues would not be overlooked.

3.5.2 Agency Issues

The Committee considered documents provided by a number of key agencies when undertaking its reviews. At the conclusion of these reviews, the Committee noted a number of issues relating to the information provided:

- ***Families SA*** - To inform its reviews, the Committee considered case notes, information downloaded from the electronic record of contact between clients and Families SA (the Client Information System) and the reviews undertaken by Families SA's Adverse Events Committee. The Committee noted the difficulties involved in the delivery of services to children and their families in rural and remote areas. The Committee's recommendations highlighted the need for the provision of services that were based on more accurate assessment of 'risk' and which recognised key issues for the child and their family (see above). The Committee also considered the ways in which the Adverse Events Committee could improve its review of the services that Families SA provided to a child and their family.
- ***Health Services*** - Where relevant the Committee obtained health records concerning cases for review. The Committee noted the efforts made by some health agencies to ensure the health and wellbeing of the children in their care. However, the recommendations concerning interagency exchange of information, interagency case planning and the lack of recognition of contextual and cultural issues for some children were prompted by their review of these records.
- ***South Australian Police*** - The Committee noted the diligence and thoroughness of the investigations undertaken by South Australian Police. They recommended broadening the scope of the protocol used to undertake the investigation into sudden unexpected deaths of infants to include the deaths of all children under 18 years of age.
- ***Department of Education and Children's Services*** - The recommendations regarding interagency exchange of information and case planning were prompted by the review of these records.

Table 8: Eligibility for in-depth review, 2005

Age Group	Cause of death [a]	Involvement with Government Agencies	Section under which the case is reviewable	Current status in the review process
Under 1	Fatal abuse, with evidence of previous abuse.	Not known to Families SA. Health service involvement in the weeks preceding death.	S52S (3) (a)	Currently awaiting completion of coronial and criminal investigations.
	Fatal neglect.	Child/family contact with Families SA in the previous three years. Child under Guardianship of the Minister in the days preceding death.	S52S (3) (a), (c) and (d)	Currently awaiting completion of coronial and criminal investigations.
	Accidental asphyxia.	Child/family contact with Families SA in the previous three years.	S52S (3) (c)	Currently awaiting completion of coronial investigations.
1 - 4 years	Fatal abuse with evidence of previous abuse.	Child/family contact with Families SA in the previous three years.	S52S (3) (a) and (c)	Currently awaiting completion of coronial and criminal investigations.
	Morphine toxicity.	Child/family contact with Families SA in the previous three years.	S52S (3) (d) Case referred to the Committee by the Coroner	Currently awaiting release of information from the Coroner.
10 - 14 years	Potential suicide.	Child/family contact with Families SA in the previous three years.	S52S (3) (c)	Review completed.
	Transport-related fatality.	Child/family contact with Families SA in the previous three years.	S52S (3) (c)	Currently awaiting completion of coronial and criminal investigations.
15 - 17 years	Potential suicide.	Not known to Families SA.	S52S (3) (b)	Currently awaiting the release of health records.
	Potential suicide.	Child/family contact with Families SA in the previous three years.	S52S (3) (c)	Currently awaiting completion of coronial investigations.
	Potential suicide.	Not known to Families SA.	S52S (3) (b)	Currently under review.
	Potential suicide.	Child/family contact with Families SA in the previous three years. Previous admission to hospital for self-harming behaviour.	S52S (3) (b) & (c)	Currently awaiting completion of coronial investigations.
	Transport-related fatality.	Child/family contact with Families SA in the previous three years. This child was on a Youth Court order at the time of death.	S52S (3) (c)	Currently awaiting completion of coronial investigations.
	Fatal medical condition.	Child/family contact with Families SA in the previous three years. Health service also involved in care.	S52S (3) (c)	Review completed.

a As determined by the Committee

Section 4

References

Section 4: References

4.1 METHODOLOGICAL ISSUES

4.1.1 Access to Data

Diagram 1 (opposite) indicates the key sources of information available to the Committee concerning the deaths of children in South Australia and illustrates the processes the Committee uses to screen and review this information.

The Registrar, Births, Deaths and Marriages (the Registrar)

The Committee currently holds a protocol with the Registrar for the release of information concerning the deaths of children and young people in South Australia. Under the terms of this protocol the Registrar, on a monthly basis, releases information to the Committee regarding the deaths of children in South Australia.

The State Coroner (the Coroner)

Under an arrangement with the Coroner, information is released to the Committee for each reportable death[10] of a child under 18 years of age.

Families SA

The Committee has protocols for release of information with the Department for Families and Communities, which includes Families SA, for information concerning services that may have been received by a child or member of their family from Families SA.

4.1.2 Coding for Cause of Death

In this report, all deaths have been coded using the World Health Organisation's International Classification of Diseases (Version 10: ICD-10). Using this coding system the underlying cause of death is considered the primary cause of death for classification. The primary cause of death is defined as '(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury'. The WHO have agreed that the most effective public health objective is to prevent the precipitating cause from operating and with this in mind have determined this coding convention.[11]

Coding of deaths for this report has been undertaken by the National Centre for Classification in Health - Brisbane (NCCH-Brisbane) under a contractual arrangement and with the agreement of the Minister for Families and Communities, the Registrar, and the Coroner. NCCH-Brisbane also undertake coding of deaths for the Queensland Child Death Review Team and the Committee believes that this arrangement will help to facilitate the consistency required to compare causes of death and death rates across States.

It should be noted that there may be some discrepancies between the ICD-10 code assigned to a death, which is based on the underlying cause of death, and the section of the report where the Committee may chose to report on a death. These discrepancies will be noted.

4.1.3 Aboriginal and Torres Strait Islander Status

The information received from the Registrar, has an Aboriginal or Torres Strait Islander indicator for each case. The Committee has determined that, in the absence of any other form of reliable indicator of ATSI status, this indicator will be used.

4.1.4 Usual Place of Residence

The information received from the Registrar indicates the 'last place of residence' for each case. This information is taken to indicate the child's usual place of residence for review and reporting purposes. The Committee acknowledges that this information may have been variously interpreted by the person giving the information and may not reflect a consistent definition of a person's usual residence.

The Committee will indicate the number of cases where the information from the Registrar shows that the child's last place of residence was outside South Australia. Where relevant, this information will be noted.

4.1.5 Reporting Period

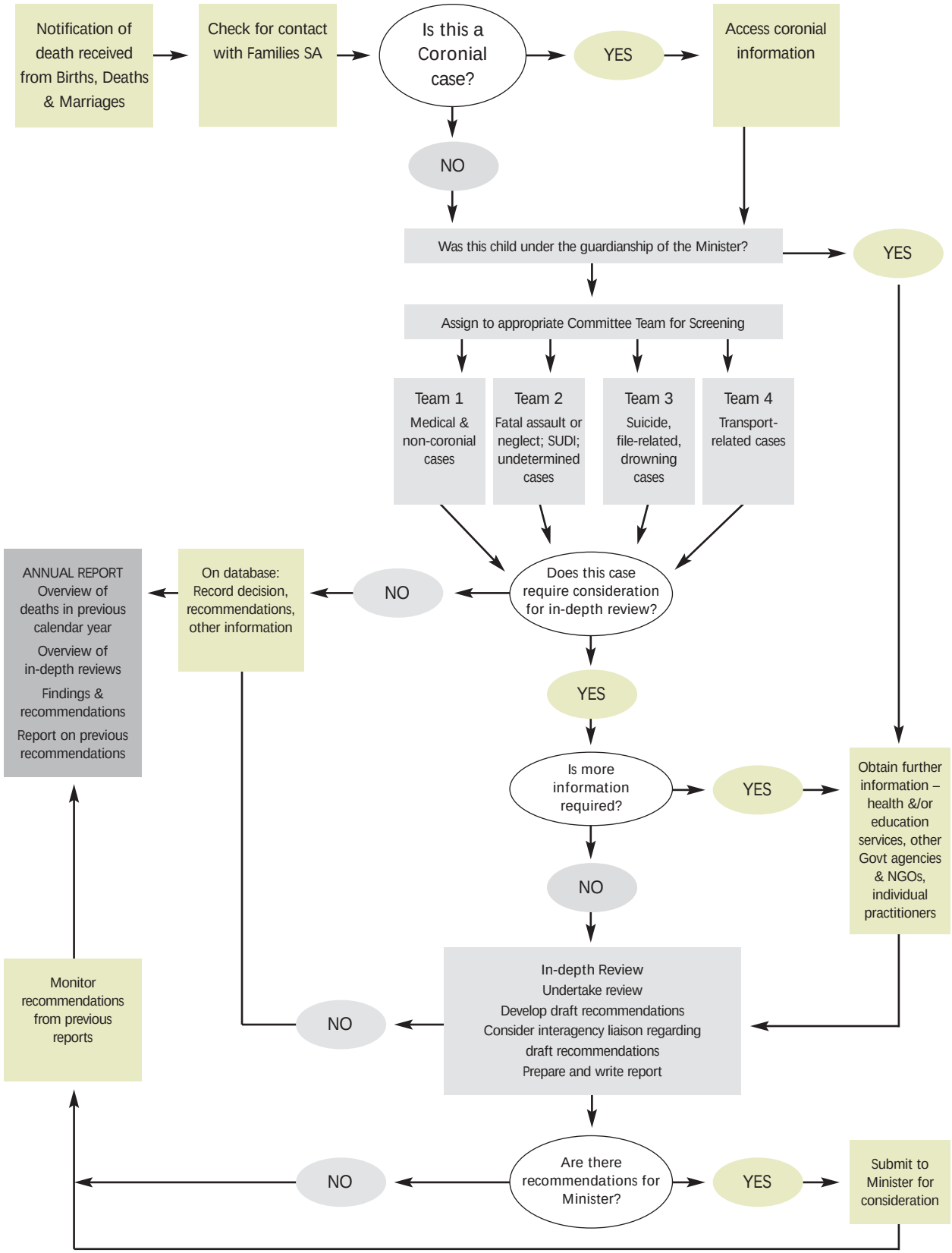
Section 52W of the Act outlines the reporting responsibilities of the Committee. It requires the Committee to report periodically to the Minister, and also to provide an annual report on the performance of its statutory functions during the preceding financial year.

References:

10 Deaths that are reportable to the Coroner are those indicated in Part 1 of the *Coroner's Act 2003*

11 Extracted from ICD-10 Second Edition, 2005, 4. Rules and guidelines for mortality and morbidity coding.

Diagram 1: Committee's screening and review process



4.1.6 Deaths Included in the Report

The Committee considered the two common ways of reporting on deaths - either through the date of registration of the death with the Registrar or the date of the child's death. It was decided that for ease of understanding, the date of death would be used as the marker for its inclusion in the data set for that year.

4.1.7 ARIA+ Index of Remoteness and Accessibility

ARIA stands for Accessibility/Remoteness Index of Australia. This Index is a distance-based measure of remoteness. It defines five categories of remoteness based on road distance to service centres: Major City, Inner and Outer Regional, Remote and Very Remote. The Very Remote category indicates very little accessibility of goods, services and opportunities for social interaction. ARIA+ Index is an indicator of the degree of geographic remoteness of an area and is a more accurate indicator of disadvantage than subjective labels such as 'rural' or 'country'.

4.1.8 SEIFA Index of Socioeconomic Disadvantage

The SEIFA (Socio-Economic Indexes for Areas) Index of Relative Disadvantage (IRDS) draws on a variety of personal and household characteristics (available from the 2001 Census) to rank household and socioeconomic status. The IRSD is calculated to show the relativity of areas to the Australian average for the particular set of variables which compromise it. This average is set at 1000. Scores below 1000 indicate areas with relatively disadvantaged populations under this measure, and scores above 1000 indicate areas with relatively advantaged populations. In this report SEIFA scores are divided into five quintiles, with the most advantaged populations represented in quintile one.

4.1.9 Storage and Analysis of Information

Information concerning the circumstances and causes of child deaths in South Australia for 2005 is stored in the prototype database developed in conjunction with the Epidemiology Branch of the Department of Health. This database has been developed using EPI-INFO. EPI-INFO is a 'public shareware' program which allows for the customisation of data entry and analysis. This program has been designed and is supported by the Centers for Disease Control and Prevention (USA).

In January 2006, work commenced on the development of the permanent database. The permanent database is a custom built Windows application, utilising the Microsoft .NET 2.0 Framework and SQL Server 2005 database, designed for use in a Microsoft Windows environment.

4.1.10 Death Rates

Crude death rates have been calculated using ABS population projections (ABS, 2005). Rates are not calculated when there are less than four deaths. Given the small numbers of deaths of children in South Australia, this is often the case.

A further consideration in calculating crude death rates for this population was the high number of children who died in South Australia but whose usual residence was outside of the State in 2005. These deaths were excluded from the calculation of crude death rates.

The Infant Mortality Rate is calculated according to the deaths of children less than one year old per 1000 live births in the same year.

The crude death rate for Aboriginal children was calculated using an estimate of the Aboriginal population (11,800 children) for 2004 based on the 2001 Census figures and the five year age-grouped estimates of this population for 2004 provided by the Australian Bureau of Statistics. This estimate was provided by the Social Inclusion Strategy and Research Division of the Department for Families and Communities.

4.2 DEFINITION: SUICIDE

'Worldwide, the reliability of suicide reporting is questionable and examination of the validity of suicide as a construct is even more dubious. …ambivalence of some degree is probably in most, if not all suicides. …In practice self-destructive behaviour is classified on a categorical basis even though reality might favour a dimensional approach.'
(Cantor, Neulinger, Roth and Spinks, 1999)

In any report concerning suicide, the issue of definition is crucial. The majority of studies concerning suicide rates will usually conclude that because of definitional issues, the rates of suicide in any community are under-reported. These definitional issues are usually focused on proof of intent.

The NSW Child Death Review Team conducted a retrospective study of suicide and risk taking in young people (NSW Child Death Review Team and NSW Centre for Mental Health, 2003). They considered the deaths of 187 children who had died between 1996 and 2000. Their definition of suicide was 'any self-

inflicted injury resulting in death where it is established by a coronial inquiry that the death resulted from a deliberate act by the individual with the intention of taking his or her own life.'

In the NSW definition, not only must the notion of intent be established, but it must be recognised as such by a coronial inquiry. Cantor et al. (1999) wrote to all State coroners concerning their use of the term suicide in their findings and found that the majority of coroners at that time did not use formal suicide verdicts and all States and Territories were inherently conservative in suggesting that deaths were intentionally self-inflicted. They comment that 'in most States and Territories, coroners are under pressure to refrain from using the term suicide even with clear-cut suicides of adults.'(p 14)

Definitions of suicide have usually been shaped by the coding conventions used by the World Health Organisation's International Classification of Diseases. According to the rules of this system of coding deaths, there must be substantiated information from a coroner or forensic pathologist that the harm was intentionally self-inflicted before a death will be coded as suicide. In addition it would appear that an even higher requirement for proof of intent is often required before recording the death of a child as suicide.

The Queensland Commission (2005), in their discussion of this issue commented that this view is based on the belief that children and young people may not have the intellectual, emotional or mental capacity to fully understand what the result of their actions will be. They also identified the social stigma that is often attached to the notion that a person may have chosen to kill themselves as being one that is deliberately avoided by not 'naming' a death as suicide.

In 2005 the Committee included cases in Section 2.4.3 ‘Suicide’ where the intent of the child was clearly established, but also those where intent may not have been established. The Committee based its decision on careful examination of all the evidence available at the time. This evidence may have included post mortem information, information from South Australian Police and health and education records.

4.3 DEFINITION: FATAL ASSAULT AND NEGLECT

4.3.1 Fatal Assault

The NSW Child Death Review Team (2003) in their study of fatal assault noted that the deaths of children from fatal assault are usually classified according to identified patterns and profiles that include:

- the age of the child;
- the relationship of the child to the perpetrator;
- the intent of the perpetrator;
- the circumstances surrounding the incident.

The typology of fatal abuse of children as proposed by Lawrence (2004) is outlined below. This typology appears to be used as a basis for classification by other child death review teams (e.g. NSW and Queensland) when considering these types of deaths. Lawrence (2004) proposes six categories of fatal assault but initially indicates that in any category consideration must be given to whether the assault was 'familial or non-familial.' Mouzos (2000) has indicated that the majority of children up until the age of 14 are killed by someone known to them - most often a family member. The deaths of older children in contrast, are usually non-familial and involve friends, acquaintances or strangers (Lawrence and Fattore, 2004).

The six categories of fatal assault proposed by Lawrence (2004) include:

1. ***Neonaticide*** - this type of death involves the killing of an infant by the mother within 24 hours of birth. Byard (2004) notes that these deaths usually occur when mothers are very young, single and poorly educated and may have concealed their pregnancy. He considered neonaticides difficult to investigate because injuries may not be evident and proof of live birth may not be possible.
2. ***Fatal child abuse, 'battered baby' or non-accidental injury*** - deaths falling into this category include those where the child is killed by one major assault or a series of assaults over time. In these deaths children are commonly punched, hit, kicked, shaken or thrown and children less than one year old are particularly at risk.
3. ***Family dispute and murder-suicide*** - these deaths are also referred to as 'domestic homicide.' The termination of the parental relationship may result in the death of one or more family members and may also involve the perpetrator, usually male, taking their own life.
4. ***Psychiatric illness of the offender*** - these deaths are causally related to the psychiatric illness of the perpetrator. The killing of the child is deliberate and there is no history of physical abuse.

5. ***Fatal sexual assault*** - these deaths occur after a sexual assault.

6. ***Teen fatal assault*** - these deaths are distinguishable by the age of the child and also because they are usually perpetrated by acquaintances, boyfriends or strangers. In many respects, these deaths are considered to more closely resemble adult homicides. Lawrence and Fattore (2004) note that this does not imply these deaths are homogenous in nature.

4.3.2 Fatal Neglect

Tomison (1995) defines neglect as 'any serious act of omission or commission which, within the bounds of cultural tradition, constitutes a failure to provide conditions that are essential for the healthy physical and emotional development of a child.' This definition is more likely to give rise to an understanding of neglect as being chronic and long term. However, Margolin (1990) notes that in the majority of cases of fatal neglect considered in their study '…the caregiver was simply not there at a critical moment.' (p. 309)

The NSW Child Death Review Team (2003, p 15) proposed the following parameters to define fatal neglect:

'…resulting from an act of omission by a parent or carer that involves:

1. refusal or delay in providing medical care;
2. failure to provide basic needs such as food, liquids, clothing and shelter;
3. abandonment; or
4. inadequate supervision.'

This team developed a screening process that would facilitate the identification of cases of fatal neglect and assist with the determination of cases of inadequate supervision. Factors considered in the screening process (adapted from Rosenberg, 1994) include:

- age/developmental stage of the child;
- period of time left unsupervised;
- circumstances in which the child was unsupervised - assessment of the potential hazard and how obvious the danger was to the carer;
- physical and mental condition of the carer;
- previous history of chronic supervision neglect;
- acceptability of parental behaviour within a cultural context;
- whether the neglect was causal or related to any coexisting poverty.

The NSW Ombudsman's Review Team *(Annual Report 2004)* further refined this definition to avoid the inclusion of single incidents of oversight or omission in supervision. They argued that in the context of reviewing agencies' policies and procedures, single incidents of supervisory neglect are less relevant. They noted that they would continue to consider the ways in which their team defined fatal neglect.

The Committee will continue to consider potential cases of neglect in the light of these definitions and especially with regard to the issue of inadequate supervision and, when information is available and if considered relevant, they will take into account the factors outlined in the screening process outlined by NSW Child Death Review Team (2003).

However in making a final decision regarding whether a death is considered as fatal neglect or due to other causes, the Committee will also take into account the ways in which their categorisation of the death will contribute to recommendations concerning the prevention of future deaths. Given that the Committee can make recommendations at both a broad public policy level and at the level of systemic change to agencies' policies and procedures, this becomes a critically important issue.

4.4 DEFINITION: SUDDEN UNEXPECTED DEATH IN INFANCY AND SUDDEN INFANT DEATH SYNDROME

Knowledge and understanding of SUDI and SIDS has grown considerably in the past 20 years. However there is still considerable scope for misclassification which appears to have arisen out of variations in the definition of SUDI and SIDS. These definitions are still the subject of ongoing debate.

4.4.1 Sudden Unexpected Death in Infancy

At the Ninth International SIDS Conference held in Japan this year the International Society for the Prevention and Study of Infant Death (ISPID) Pathology Working Group discussed the confusion surrounding the definition of SUDI and agreed to adopt the definition formulated by the Confidential Inquiry into Stillbirths and Deaths in Infancy (CESDI - Fleming et al. (2000). Table 9 gives this definition.

Table 9: Definition of sudden unexpected death in infancy

Age range: between 7 and 365 completed days of life (i.e. Post-perinatal infant deaths).

Criteria for inclusion:

- deaths that were unexpected and unexplained at autopsy (i.e. those meeting the criteria for SIDS);
- deaths occurring in the course of an acute illness that was not recognised by carers and/or by health professionals as potentially life-threatening;
- deaths occurring in the course of a sudden acute illness of less than 24 hours' duration in a previously healthy infant, or a death that occurred after this if intensive care had been instituted within 24 hours of the onset of the illness;
- deaths arising from a pre-existing condition that had not been previously recognised by health professionals;
- deaths resulting from any form of accident, trauma or poisoning.

Source: Confidential Inquiry into Stillbirths and Deaths in Infancy 2004

The Committee has considered this recommendation and has agreed to adopt this definition of SUDI, however the Committee will include the deaths of infants less than seven days old. These deaths will be noted.

4.4.2 Sudden Infant Death Syndrome

The definition of SIDS has undergone several modifications in the past decade. Recently Krous, Beckwith, Byard et al. (2004) have proposed a further redefinition of SIDS. This definition has been adopted by other Child Death Review Teams nationally (e.g. the Queensland Commission and Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity both used this definition in their most recent Annual Reports) and is being considered for use by other Australian teams and committees. The Committee will also use this definition in classifying SIDS. The details of the definition are given in Table 10 (overpage).

4.4.3 The Committee's Parameters for the Reporting of SUDI and SIDS

Table 11 outlines the deaths that will be included in this section by using these parameters to define SUDI and SIDS.

Table 11: Committee's parameters for reporting SUDI and SIDS

KNOWN OR EXPLAINED CAUSES OF DEATH

- Disease or illness.
- Accidents (including 'sleep' accidents such as suffocation and smothering; drowning and transport-related accidents).
- Fatal assault.

UNKNOWN OR UNEXPLAINED CAUSES OF DEATH

- SIDS.
- Unclassified Sudden Infant Death (USID)/Undetermined.

Table 10: Definition of sudden infant death syndrome

General Definition of SIDS

SIDS is defined as the sudden unexpected deaths of an infant <1 year of age, with onset of the fatal 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.

Category IA SIDS: Classic features of SIDS present and completely documented

Category IA included deaths that meet the requirements of the general definition and also all of the following requirements.

Clinical

- > 21 days and < 9 months of age.
- Normal clinical history including term pregnancy (gestational age > 37 weeks).
- Normal growth and development.
- No similar deaths among siblings, close genetic relatives (uncles, aunts or first degree cousins), or other infants in the custody of the same caregiver.

Circumstances of Death

- Investigations of the various scenes where incidents leading to death might have occurred and determination that they do not provide an explanation for the death.
- Found in a safe sleeping environment, with no evidence of accidental death.

Autopsy

- Absence of potentially fatal pathologic findings. Minor respiratory system inflammatory infiltrates are acceptable; intrathoracic petechial haemorrhage is a supportive but not obligatory or diagnostic finding.
- No evidence of unexplained trauma, abuse neglect or unintentional injury.
- No evidence of substantial thymic stress effect (thymic weight < 15g and/ or moderate/severe cortical lymphocyte depletion). Occasional 'starry sky' macrophages or minor cortical depletion is acceptable.
- Negative results of toxicologic, microbiologic, radiologic, vitreous chemistry and metabolic screening studies.

Category IB SIDS: Classic features of SIDS present but incompletely documented

Category IB includes infant deaths that met the requirements of the general definition and also meet all of the criteria for category IA except that investigation of the various scenes where incidents leading to death might have occurred was not performed and/ or >1 of the following analyses were not performed: toxicologic, microbiologic, radiologic, vitreous chemistry or metabolic screening studies.

Category II SIDS

Category II includes infants that meet category I except for > 1 of the following.

Clinical

- Age range outside that of category IA or IB (i.e. 0-21 days or 270 days (9 months) through to first birthday).
- Similar deaths among siblings, close relatives or infants in the custody of the same caregiver that are not considered suspect for infanticide or recognised genetic disorders.
- Neonatal or perinatal conditions (e.g. those resulting from pre-term birth) that have resolved by the time of death.

Circumstances of Death

- Mechanical asphyxia or suffocation caused by overlaying not determined with certainty.

Autopsy

- Abnormal growth or development not thought to have contributed to death.
- Marked inflammatory changes or abnormalities not sufficient to be unequivocal causes of death.

Unclassified sudden infant death

Includes deaths that do not meet the criteria for category I or II SIDS, but for which alternative diagnoses of natural or unnatural conditions are equivocal, including cases where autopsies were not performed.

Post resuscitation cases

Infants found in extremis who are resuscitated and later die ('temporarily interrupted SIDS') may be included in the aforementioned categories, depending on the fulfilment of relevant criteria.

Source: Krous, Beckwith, Byard et al 2004

4.5 REFERENCES

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