CHILD DEATH & SERIOUS INJURY REVIEW COMMITTEE

ANNUAL REPORT 2010–11

Government of South Australia

LETTER OF TRANSMISSION

Hon Grace Portolesi MP
Minister for Education and Child Development

Dear Minister

I submit to you for presentation to Parliament the 2010–11 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.

In compliance with the *Public Sector Act 2009* 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 2010–11.

Yours faithfully

Dymphna Eszenyi
Chair
Child Death and Serious Injury Review Committee

31 October 2011

CHAIR'S FOREWORD

This is the sixth Annual Report to be presented to Parliament under Part 7C of the Children's Protection Act 1993. In this report the Committee's reviews over six years are summarised. This aggregate summary serves to underline factors that began to be apparent from the Committee's reviews since its work began. That is:

- The need for a well-trained and well supported workforce to enhance positive outcomes for children and young people.
- The importance of good inter-agency communication that is in the interests of children and young people.
- Programs and services that can evaluate how they are making a difference to the lives of children and young people.
- The higher rate of death for those children and young people who live in the State's most disadvantaged areas.

The Committee continues to identify opportunities for prevention, for example:

- The feature most prominent in 'sleeping accidents' is that they do not occur in the sleeping environments recommended in the SIDS and Kids Safe Sleeping Guidelines.[1]
- Improving the capacity of agencies providing services to the State's most vulnerable children and their families to intervene and ameliorate the circumstances of risk in the child's life.

The Committee has been pleased to have been involved in a number of collaborative efforts to support system improvements such as:

- Legislative and regulatory changes about swimming pools, in collaboration with the SA Water Safety Committee.
- Development of SA Health's *Safe Infant Sleeping Standards* through participation in the Safe Sleeping Advisory Committee.
- Promoting changes to road infrastructure in collaboration with State and local government agencies.

Within our very limited resources we have continued to build relationships with other review bodies in Australia and New Zealand who are performing similar work. The factors and trends that we are seeing in South Australia are also apparent in those jurisdictions.

The Committee thanks the individuals and agencies who have supported and contributed to its work over the past year.

The Committee members and Secretariat extend sympathy to the families and friends of the children whose deaths have been considered during the past year.

Dymphna Eszenyi
Chair
Child Death and Serious Injury Review Committee

1 www.sidsandkids.org/safe-sleeping/ SIDS and Kids *Safe Sleeping Guidelines*. Last accessed July 2011.

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GLOSSARY

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
Act	*Children's Protection Act 1993*
AEC	Adverse Events Committee – Families SA
ARIA+	Index of Remoteness and Accessibility, Australia
CASR	Centre for Automotive Safety Research
CDSIRC	Child Death and Serious Injury Review Committee
Coroner	State Coroner SA
CYWHS	Children, Youth and Women's Health Service
DECS	Department of Education and Children's Services
ICD–10	International Classification of Disease (Version 10)
IMR	Infant Mortality Rate
IRSD	Index of Relative Socio-economic Disadvantage
MAC	Motor Accident Commission
Registrar	Registrar, Births Deaths and Marriages SA
SEIFA IRSD	Socio-Economic Indexes for Areas, Index of Relative Socio-economic Disadvantage (IRSD)
SIDS	Sudden Infant Death Syndrome
SUDI	Sudden Unexpected Death in Infancy
UHV	Universal Home Visit
WHO	World Health Organization

ACKNOWLEDGEMENTS

The Committee wishes to thank the following individuals and organisations for making themselves available to support the Committee's work:

- Children, Youth and Women's Health Service Mortality Committee, SA Health
- Epidemiology Branch, SA Health, especially Ms Meg Clarke, Senior Project Officer
- Kidsafe SA
- Maternal, Perinatal and Infant Mortality Committee, SA Health
- National Centre for Health Information Research and Training, Brisbane, especially Ms Sue Walker, Associate Director and Mr Garry Waller, Senior Classification Officer
- Research Unit, Business Affairs from the Department for Families and Communities who provide technical support and advice on statistics to the Secretariat
- Organisational Development and Business Technology team from the Department for Families and Communities who provide advice and technical support to the Secretariat
- Queensland Commission for Children and Young People and Child Guardian who currently host the meetings of the Australian and New Zealand Child Death Review and Prevention Group, and the representatives attending the Group's meetings for sharing insights gained from their own jurisdictions
- Registrar, Births Deaths and Marriages, Ms Val Edyvean and staff
- SA Health Safe Sleeping Advisory Committee
- SIDS and Kids South Australia
- State Coroner, Mr Mark Johns and staff
- Women's and Children's Hospital Records Management team
- Chief Executives and Senior Officers from the Department of Education and Children's Services, the Department for Families and Communities and SA Health for contributing to the Committee's understanding of service delivery in their departments.
- Ms Yolanda Lopez for her diligence and professionalism in preparation of the report.

COMMITTEE MEMBERS

Chair

Ms Dymphna Eszenyi

Membership 2010–11

Professor Roger Byard	
Mr Daniel Cox	
Ms Angela Davis	
Ms Dianne Gursansky	
Ms Janine Harvey	*from 27/01/2011*
Dr Diana Hetzel	
Mr Barry Jennings	*from 01/07/2010*
Ms Sandra Miller	*from 01/07/2010*
Mr Tom Osborn	*from 24/06/2010*
Ms Michelle Papillo	*from 01/07/2010*
Ms Dana Shen	
Dr Nigel Stewart	
Ms Helen Wighton	
Ms Elizabeth Wilson	*from 01/07/2010 until 31/12/2010*

Executive Officer

Dr Sharyn Watts

Senior Project Officer

Ms Rosemary Byron-Scott

Administration and Information Officer

Ms Melanie Kydd

EXECUTIVE SUMMARY

This is the sixth annual report of the Child Death and Serious Injury Review Committee to be tabled in Parliament.

Purpose and Establishment

The Child Death and Serious Injury Review Committee contributes to efforts to prevent death or serious injury to South Australia's children. It was established by the *Children's Protection Act 1993 (the Act)* in February 2006.

The Committee reviews the circumstances and causes of deaths and serious injuries to children and makes recommendations to Government for changes to legislation, policies and procedures that may help prevent similar deaths or serious injuries.

Activities

Throughout 2010–11 the Committee continued to analyse information about the circumstances and causes of all the deaths of children in South Australia and to monitor, promote and support systemic changes to improve outcomes for children and young people.

This Annual Report contains information about the deaths of children in South Australia from 1 January 2010 – 31 December 2010. In addition this report also sets out summaries of information now available for the six year period 2005–10.

Systemic issues are addressed in the Committee's in-depth reviews. In 2010–11 these reviews focused on children under the Guardianship of the Minister, vulnerable infants and Aboriginal children and raised issues concerning case management, worker training and supervision, re-unification policies, discharge processes and follow-up. The Committee also conducted a review into drowning deaths associated with issues about swimming pool legislation.

Highlights from the 2010–11 Annual Report

The death rate for South Australian resident children for the period 2005–10 was 33.2 deaths per 100 000 children. In 2010 the death rate for resident South Australian children was 32.8 per 100 000 children – a rate similar to previous years.

Across the 2005–10 reporting period, infants younger than one year had the highest death rate of all age groups and most of these deaths were attributed to conditions that began during pregnancy or occurred at or around birth.

In 2010, Aboriginal children were once again over represented in the deaths of South Australian children. They comprised 9% of the total number of children who died and the death rate was 65.5 deaths per 100 000 Aboriginal children. In the 2005–2010 period, the death rate for Aboriginal children was 95.5 deaths per 100 000 Aboriginal children; nearly three times the death rate for non-Aboriginal children.

The Committee has undertaken several reviews concerning both Aboriginal infants and children and continues to monitor recommendations made about health, child protection, education and mental health services.

As in previous years, after setting aside deaths from illness or disease, more children died in transport crashes than in any other circumstances. The Committee has sought information about the best ways in which to improve the safety of children and young people as drivers, passengers and pedestrians including changes proposed to the Graduated Licensing Scheme.

The Committee again noted co-sleeping as a common risk factor in the circumstances of the deaths of a number of infants younger than one year who died suddenly and unexpectedly. The Committee has contributed to the development of SA Health's South Australian Safe Infant Sleeping Standards[2] and will continue to seek opportunities that ensure all infants have a safe place to sleep.

The Committee has sought to monitor, promote and support systemic changes to improve outcomes for children and young people based on its recommendations from the 2010–11 reviews and previous reviews. Services to vulnerable infants, inter-agency collaboration, case management practices, neglect and cumulative harm and the development of workers' competence and confidence are some of the areas where the Committee will continue to monitor the progress of change.

2 www.sahealth.sa.gov.au/wps/wcm/connect/a965e20048a319a3bafcfe7675638bd8/4858+Safe+Sleeping+Standards.V9.2.PROOF.PDF?MOD=AJPERES&CACHEID=a965e20048a319a3bafcfe7675638bd8 SA Health *SA Safe Infant Sleeping Standards*. Last accessed October 2011.

SECTION 1:
CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

S52T – Database

The Committee will maintain a database of child deaths and serious injury cases and their circumstances.

S52S – Functions of the Committee

a) to review cases in which children die or suffer serious injury with a view to identifying legislative or administrative means of preventing similar cases of death or serious injury in the future.

Children's Protection Act, 1993

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

1.1 Child Deaths South Australia 2005–10

Between 2005 and 2010, 747 children died in South Australia. Seven hundred and three of these children were residents in the State at the time of their death and 44 died in South Australia but their usual residence was outside of the State. In 2010, 119 children died in South Australia; two children were not resident at the time of their death (Table 1).[3]

*Table 1: Rates of child deaths, South Australia 2005–10**

Year	All children		Resident children	
	Number	Rate[1] per 100 000	Number	Rate[1] per 100 000
2005	135	**38.7**	122	**35.0**
2006	120	**34.3**	111	**31.7**
2007	124	**35.3**	118	**33.5**
2008	120	**34.0**	111	**31.4**
2009	129	**36.4**	124	**34.9**
2010	119	**33.4**	117	**32.8**
2005–10	**747**	**35.3**	**703**	**33.2**

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

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

The death rate for all children who died in South Australia during 2005–10 (six years) was 35.3 deaths per 100 000 children. The death rate for resident children was 33.2 deaths per 100 000 children.

In 2010, 119 children died in South Australia; 117 were resident in South Australia at the time of their death. The death rate for all children was 33.4 deaths per 100 000 children and for resident children the death rate was 32.8 deaths per 100 000 children. The 2010 rates are slightly lower than the 2005–10 rates.

Further demographic information about the deaths of children in South Australia in 2005–10 can be found in Table 2.

3 The Committee's information is based on all deaths of children up to 18 years of age recorded by the Office of Births, Deaths and Marriages, regardless of the weight or length of gestation of the infant.

*Table 2: Demographics of child deaths, South Australia 2005–10**

	2005	2006	2007	2008	2009	2010	2005–10	Rate[1] per 100 000 2005–10
TOTAL	**135**	**120**	**124**	**120**	**129**	**119**	**747**	**35.3**
Sex								
Female	58	70	41	47	57	42	315	30.5
Male	77	50	83	73	72	77	432	39.9
Age Group								
Infants (<1 year)	84	64	81	71	71	73	444	383.4[2]
1–4 years	17	19	15	12	17	14	94	21.1
5–9 years	6	12	4	12	4	7	45	7.9
10–14 years	12	6	8	5	13	8	52	8.6
15–17 years	16	19	16	20	24	17	112	29.6
Cultural Background								
Aboriginal	17	11	12	11	11	8	70	95.5
Contact with Families SA								
Families SA	31	31	29	26	33	31	181	
Usual residence								
Outside SA	13	9	6	9	5	2	44	
Socioeconomic Background (SEIFA IRSD)[3]								
Most disadvantaged SEIFA 5	28	25	36	35	33	35	192	44.0
SEIFA 4	30	26	27	16	32	28	159	38.4
SEIFA 3	29	22	19	26	21	24	141	36.2
SEIFA 2	14	21	17	18	20	20	110	27.7
Least disadvantaged SEIFA 1	21	17	18	16	18	10	100	24.6
Remoteness (ARIA+)[3]								
Major City	70	71	80	78	80	77	456	31.5
Inner Regional	20	14	13	14	26	21	108	41.9
Outer Regional	16	18	14	12	14	16	90	35.0
Remote and Very Remote	16	8	10	7	4	3	48	58.2

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

2 The infant mortality rate is calculated per 100 000 live births. See Section 4.11.

3 One child who died in 2007 has not yet been assigned a place of residence.

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

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

FINDINGS – *Child Deaths South Australia 2005–10*

- For the period 2005–10, the death rate for all children who died in South Australia and for resident children only has fluctuated but no trend was found for all children (p=0.54) or resident children (p=0.94).
- Aboriginal children were 2.8 times more likely to die than non-Aboriginal children (95.5 deaths per 100 000 Aboriginal children, 33.2 per 100 000 non-Aboriginal children).
- Children younger than one year and young people 15–17 years had a higher rate of death in comparison to those children aged between 1–15 years. Male children were at greater risk of death than female children.
- Children who lived in areas of greatest disadvantage (SEIFA 5) had a higher rate of death than those who lived in areas of least disadvantage (SEIFA 1): 44.0 vs 24.6 deaths per 100 000 children.
- Living in a rural or remote area increased a child's risk of death in comparison to metropolitan residence (58.2 deaths per 100 000 children in remote and very remote areas, 31.5 deaths per 100 000 children in metropolitan Adelaide).
- In the period 2005–10, 181 (24%) of children or their families had had contact with Families SA, a rate of 8.6 deaths per 100 000 children. Contact with Families SA may indicate the increased vulnerability of a child.

1.1.1 Infant Mortality Rates

The infant mortality rate[4] for 2005–10 was 3.8 deaths per 1000 livebirths. Although there has been fluctuation in individual years the infant mortality rate has remained consistent over the years 2005–10: 4.6 (2005), 3.4 (2006), 4.1 (2007), 3.6 (2008), 3.6 (2009) (p=0.54).

In 2010 there were 73 deaths of children aged younger than one year in South Australia; the infant mortality rate was 3.7 deaths per 1000 livebirths.

Information about infant mortality in South Australia is recorded in a number of different statistical collections including the Australian Bureau of Statistics, the South Australian Maternal, Perinatal and Infant Mortality Committee and this Committee. Each collection has slightly different ways of registering and recording the deaths of infants, consequently the infant mortality rates will differ, although the overall trends are consistent.

1.2 Cause of Death and Age

Over the period 2005–10, 494 of the 747 deaths (66.1%) were attributed to illness or disease. The death rate for illness or disease was 23.4 deaths per 100 000 children, compared to 9.1 deaths per 100 000 for deaths attributed to external causes or 2.8 deaths per 100 000 children for deaths attributed to Sudden Infant Death Syndrome (SIDS) and undetermined causes.

4 The Infant Mortality Rate (IMR) is calculated according to the deaths of children younger than one year old per 1000 livebirths in the same year (See section 4.11).

*Table 3: Causes of child deaths by age group, South Australia 2005–10**

Cause of death	Infants <1 year	1–17 years	Total	Rate[1] per 100 000
2010				
Illness or Disease	58	22	80	22.4
SIDS and Undetermined Causes	14	0	14	3.9
External Causes	1	24	25	7.0
TOTAL	**73**	**46**	**119**	**33.4**
2005–2010				
Illness or Disease	357	137	494	23.4
SIDS and Undetermined Causes	52	8	60	2.8
External Causes	35	158	193	9.1
TOTAL	**444**	**303**	**747**	**35.3**

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

Most deaths attributed to SIDS or undetermined causes were in children younger than one year.[5]

Deaths of older children during this six year period were more frequently due to external causes. These causes include deaths in transport crashes, from fatal assault, suicide and drowning.

In 2010 all deaths from SIDS and undetermined causes in 2010 were infants younger than one year.

1.3 Deaths Due to Illness or Disease

Over the period 2005–10, 494 deaths were attributed to illness and disease and in 2010, 80 deaths were attributed to these causes (Table 4).

Causes of death from illness or disease include infections, cancer, nervous system diseases such as epilepsy, and diseases of the respiratory system such as asthma. Also included are deaths arising from conditions associated with pregnancy, labour and birth and from congenital conditions such as heart malformations or chromosomal abnormalities. Some of these conditions are associated with chronic ill health which increases vulnerability to infections such as pneumonia or are associated with medical or surgical interventions that increase vulnerability to secondary illnesses such as sepsis.

5 See Section 4.5.7 for an explanation of 'SIDS' and 'undetermined causes'.

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

Table 4 provides further demographic details about deaths from illness and disease for the period 2005–10 and for 2010.

*Table 4: Demographics of child deaths attributed to illness or disease, South Australia 2005–10**

	2010	2005–10	Rate[1] per 100 000 2005–10
TOTAL	**80**	**494**	**23.4**
Sex			
Female	27	214	20.7
Male	53	280	25.9
Age Group			
Infants (<1year)	58	357	308.3[2]
1–4 years	7	46	10.3
5–9 years	5	28	4.9
10–14 years	5	30	4.9
15–17 years	5	33	8.7
Cultural Background			
Aboriginal	7	40	54.6
Contact with Families SA			
Families SA	15	93	
Usual residence			
Outside SA	2	32	
Socioeconomic Background (SEIFA IRSD)[3]			
Most disadvantaged SEIFA 5	23	118	27.0
SEIFA 4	18	111	26.8
SEIFA 3	18	91	23.3
SEIFA 2	13	73	18.4
Least disadvantaged SEIFA 1	6	68	16.7
Remoteness (ARIA+)[3]			
Major City	57	317	21.9
Inner Regional	11	68	26.4
Outer Regional	9	53	20.6
Remote and Very Remote	1	23	27.9

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

2 The infant mortality rate is calculated per 100 000 live births. See Section 4.11.

3 South Australian residents only included. The death of one child in 2007 has not yet been assigned a place of residence.

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

FINDINGS – *Deaths Due to Illness or Disease*

- The death rate due to illness and disease was 23.4 deaths per 100 000 children for the period 2005–10. Although the death rate has fluctuated over the individual years recorded by the Committee no trend was found; 25.2 (2005), 19.7 (2006), 23.3 (2007), 24.3 (2008), 25.1 (2009) and 22.4 (2010) (p=0.75).
- Aboriginal children were 2.5 times more likely to die from illness and disease than non-Aboriginal children: 54.6 deaths per 100 000 for Aboriginal children, 22.2 per 100 000 for non-Aboriginal children.
- Children younger than one year had a high rate of death from illness and disease in comparison to older children and comprised 72% of all deaths from illness and disease.
- Male children were at greater risk of death from illness and disease than female children.
- Children who lived in areas of greatest disadvantage (SEIFA 5) had a higher rate of death due to illness and disease than those who lived in areas of least disadvantage (SEIFA 1), 27.0 vs 16.7 deaths per 100 000 children.
- Living in a rural or remote area increased a child's risk of death from illness and disease in comparison to metropolitan residence (27.9 deaths per 100 000 in remote and very remote areas, 21.9 deaths per 100 000 children in metropolitan Adelaide).
- In the period 2005–10, of the children who died from illness or disease, 93 (19%) of these children or their families had had contact with Families SA, a rate of 4.4 deaths per 100 000 children. Contact with Families SA may indicate the increased vulnerability of a child.

1.3.1 Causes of Death from Illness or Disease

During the 2005–10 period, the most frequent cause of death from illness and disease was related to conditions that occurred during or become apparent in the late stages of pregnancy or the early weeks of life. The cause of death for children with these conditions was primarily associated with prematurity and its complications. Children also died as a consequence of birth defects and the results of lack of oxygen to the brain (Table 5).

*Table 5: Causes of child deaths attributed to illness or disease, South Australia 2005–10**

Cause of death	2010	2005–10	Rate per 100 000 2005–10
Certain conditions originating in the perinatal period	36	205	9.7
Congenital malformations, deformations and chromosomal abnormalities	15	129	6.1
Disease of the nervous system	11	49	2.3
Cancer	3	47	2.2
All other causes of illness and disease and cause not yet known	15	64	
TOTAL	**80**	**494**	**23.4**

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

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

Irrespective of the age of death, conditions originating in the perinatal period and birth defects have their origin prior to or around the time of birth. In the period 2005–10, the rate of death for males who died from either of these conditions was 17.3 deaths per 100 000 children, and for females was 14.2 deaths per 100 000 children.

Seventy-eight percent of deaths from these conditions occurred in infants younger than 28 days and the death rate associated with these conditions for Aboriginal children was 30.0 deaths per 100 000 estimated population.

The South Australian Birth Defects Register publishes a comprehensive annual report of the epidemiology of birth defects in South Australia.[6]

Deaths attributed to nervous system diseases

In the period 2005–10, there were 49 children who had an underlying cause of death involving the nervous system: 5 deaths (2005), 10 (2006), 8 (2007), 4 (2008), 11 (2009) and 11 (2010). Thirty-two of the 49 deaths were in children aged 1–17 years with conditions including cerebral palsy, neurodegenerative disorders and severe epilepsy.

Fourteen children lived in regional or remote locations. The rate of death in Aboriginal children was 2.8 times higher than in non-Aboriginal children: 6.8 deaths per 100 000 Aboriginal children compared to 2.4 deaths per 100 000 non-Aboriginal children.

Deaths attributed to overwhelming infections

The Committee has noted that a small number of infants younger than one year of age have continued to die from overwhelming infections: 5 deaths (2005), 1 (2006), 1 (2007), 0 (2008), 3 (2009) and 4 (2010). Conditions included pneumococcal infection, enteroviral myocarditis, E coli sepsis, meningicoccal infection, adenovirus infection, cytomegalovirus infection, viral myocarditis, methicillin resistant staphylococcus aureus and respiratory syncytial virus.

The deaths of eleven infants who died from overwhelming infections were classified as sudden and unexpected deaths in infancy (SUDI).

Cancers

In this six year period, there were 47 deaths due to cancer of various forms. For further information on deaths from cancer, see the SA Cancer Registry Annual report.[7]

1.3.2 Deaths from Illness or Disease of Infants Younger than One Year

Of the 494 children who died from illness and disease between 2005 and 2010, 357 were infants younger than one year of age. Almost half of these infants died within one day. The two most common categories of death for these infants were conditions which originated during pregnancy, labour and at birth and conditions attributed to congenital and chromosomal abnormalities (Table 6).

6 www.wch.sa.gov.au/services/az/other/phru/documents/2007_sabdr_annual_report.pdf SA Health *South Australian Birth Defects Register Annual Report*. Last accessed September 2011.

7 www.health.sa.gov.au/pehs/PDF-files/CancerReport2007-sahealth-20100728.pdf SA Health *South Australian Cancer Registry Annual Report*. Last accessed September 2011.

*Table 6: Causes of infant deaths attributed to illness or disease, South Australia 2005–10**

	2010	2005–10
Sex		
Female	18	156
Male	40	201
Age Group		
Less than 1 day	24	160
1 day to less than 1 week	10	62
1 week to less than 28 days	7	48
28 days to less than 1 year	17	87
Causes of Death		
Certain conditions originating in the perinatal period	36	203
Congenital malformations, deformations and chromosomal abnormalities	11	105
All other causes of illness and disease	11	49
TOTAL	**58**	**357**

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

Details were obtained from perinatal death certificates for all infants who died before 28 days of age. The number of infants who had a birth weight less than 400 grams or a gestation less than 20 weeks were included in the Committee's information as follows: 13 (2005), 5 (2006), 5 (2007), 11 (2008), 8 (2009), 9 (2010). It should be noted that 21 of the 284 infants younger than 28 days of age were missing information about their birth weight. Life is considered to be present at birth when the infant breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles.[8]

The South Australian Maternal, Perinatal and Infant Mortality Committee publishes a comprehensive annual report that details the deaths of infants up to one year of age from all causes. Detailed information about causes of death in this age cohort is available in the infant mortality publications produced by the Pregnancy Outcome Unit of SA Health.[9]

8 www.sahealth.sa.gov.au/wps/wcm/connect/990ec78047edf7be9d739df22c7c1033/MatPeriInfant+Mortality+SA+2009-Operations-POU-20110815.pdf?MOD=AJPERES&CACHEID=990ec78047edf7be9d739df22c7c1033 SA Health *Maternal, Perinatal and Infant Mortality Committee. Maternal, Perinatal and Infant Mortality in South Australia, 2009*. Adelaide: SA Health, Government of South Australia, 2011. Last accessed September 2011.

9 Ibid

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

ACTIONS – *Causes of Death From Illness or Disease*

- Through its correspondence and liaison with Children, Youth and Women's Health Service (CYWHS) the Committee has sought to establish the progress CYWHS has made to deliver services to vulnerable infants and their families. Discussion has focused on achieving a continuous transition from antenatal services, through hospital stay to community-based postnatal services for infants and their families.
- The Committee has met with Disability SA to discuss the needs of children with disabilities. The Committee will monitor how the implementation of the new service delivery model for children meets the needs of vulnerable families and children with severe disabilities.
- Hypernatraemia was a factor in the death of a child with gastroenteritis. The Committee supports the recommendations of the CYWHS Mortality Committee for inclusion in the patient administration system of an e-flag for an abnormal or critical laboratory test. This flag would alert health professionals to the existence of a critical laboratory test result at the time of discharge from hospital.

1.4 Deaths Due to SIDS and Undetermined Causes

In the period 2005–10, 60 deaths have been attributed to SIDS or undetermined causes. The death rate for these deaths was 2.8 deaths per 100 000 children. In 2010, 14 deaths were attributed to SIDS and undetermined causes. The rate for deaths attributed to these causes in 2010 was 3.9 deaths per 100 000 children; a higher rate than the rate for the six year period. Rates and demographic details associated with these deaths are provided in Table 7.

*Table 7: Demographics of child deaths attributed to SIDS or undetermined causes, South Australia 2005–10**

	2010	2005–10	Rate[1] per 100 000 2005–10
TOTAL	**14**	**60**	**2.8**
Sex			
Female	5	26	2.5
Male	9	34	3.1
Age Group			
Infants (<28 days)	2	7	6.1[2]
Infant 28 days – 1 year	12	45	38.9[3]
1–17 years	0	8	0.4
Cultural Background			
Aboriginal	1	9	12.3
Contact with Families SA			
Families SA	7	28	
Usual residence			
Outside SA	0	0	
Socioeconomic Background (SEIFA IRSD)[4]			
Most disadvantaged SEIFA 5	7	27	6.2
SEIFA 4	1	7	1.7
SEIFA 3	2	9	2.3
SEIFA 2	2	8	2.0
Least disadvantaged SEIFA 1	2	9	2.2
Remoteness (ARIA+)[4]			
Major City	9	38	2.6
Inner Regional	2	12	4.7
Outer Regional	3	8	3.1
Remote and Very Remote	0	2	2.4

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

2 The mortality rate is calculated per 100 000 live births surviving 28 days.

3 The infant mortality rate is calculated per 100 000 live births. See Section 4.11.

4 South Australian residents only included. The death of one child in 2007 has not yet been assigned a place of residence.

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

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

FINDINGS – *Deaths Due to SIDS and Undetermined Causes*

- For each of the years in the six year reporting period there has been an average, but statistically non-significant increase of 12% in the number of deaths attributed to SIDS and undetermined causes in infants younger than one year. This increase needs to be considered alongside the decline in the number of deaths attributed to accidental suffocation in the same time period (see Section 1.5.3). These deaths share a common set of risk factors associated with unsafe sleeping environments.
- The risk factors present in these deaths have remained consistent over the six year reporting period; of particular concern is the elevated risk associated with poorer socioeconomic circumstance.
- In the period 2005–10, 28 (47%) of the children who died from SIDS or undetermined causes or their families had had contact with Families SA, a rate of 1.3 deaths per 100 000 children. Contact with Families SA may indicate the increased vulnerability of a child.

Causes for the increase in the number of deaths attributed to SIDS and undetermined causes have been discussed with Professor Roger Byard who has suggested that there may have been changes to the ways in which a cause is attributed these deaths.[10] These changes have been recognised internationally by the American Academy of Pediatrics (2011).[11] The Committee will explore further with Professor Byard the ongoing impact of these changes.

During 2005–10 there were eight children over one year of age whose cause of death was not determined, four were young children who died suddenly and unexpectedly in their sleep. The remaining four were of various ages and died in diverse circumstances but with no post mortem evidence that could determine the cause of death.

10 Professor Roger Byard, CDSIRC committee member and Marks Chair of Pathology University of Adelaide, Personal communication October 2011.

11 http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2285 *SIDS and other sleep related infant deaths.* Last accessed October 2011.

1.4.1 Deaths due to SIDS and Undetermined Causes 2010

In 2010 the unexplained deaths of infants younger than one year were all attributed to undetermined causes, except one death attributed to SIDS and one that was 'unascertained' where the circumstances suggested previous physical abuse. Other factors to note in these 14 deaths were:

- The youngest infant to die from undetermined causes or SIDS was 2 days old and the oldest was 9 months.
- Co-sleeping was a risk factor in 7 deaths; bed coverings and/or soft sleeping surfaces were noted in 4 of these cases.
- In 12 cases one or both parents or carers smoked cigarettes, cannabis or both. In 2009, at the request of the Committee, a question concerning the presence of smokers in the household was added to the form used by SA police to gather information about sudden unexplained infant deaths. This addition has enabled the identification of smoking in the households of infants dying from SIDS and undetermined causes.
- No infant was placed to sleep in a face down position – the majority were placed to sleep on their back; a few were placed to sleep on their side, but only two infants were found in the same sleeping position – most were found face down or on their side.

ACTIONS – *Deaths Due to SIDS and Undetermined Causes*

- Co-sleeping continues to be a consistent risk factor identified in the deaths of infants. The Committee acknowledges the importance of attachment between parents and infants and the ways in which this can be achieved but still does not consider co-sleeping to be a safe way to promote a close bond between parents and babies. The risk of death from co-sleeping is significant.
- The Committee warned about the use of baby slings, especially for very young babies and recommended the guidelines recently published by the Australian Competition and Consumer Commission.[12]
- The Committee continued to promote and support the SIDS and Kids safe sleeping guidelines, with particular emphasis on campaigns targeted at more difficult to reach populations.

12 www.accc.gov.au/content/index.phtml/itemId/988112 ACCC *Baby slings safety alert.* Last accessed July 2011.

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1.5 Deaths Due to External Causes

In the period 2005–10, there were 193 deaths of children attributed to external causes (Table 8) 25 of these in 2010.

External causes of death encompass deaths from fatal assault and suicide and non-intentional deaths resulting from transport crashes, drowning and various kinds of accidents such as falls, poisoning and suffocation. This category of death also includes deaths from health-system-related adverse events. The criteria the Committee used to classify deaths into each of these categories are detailed in Section 4.5 *The Committee's Classification of Cause of Death*.

*Table 8: Demographics of child deaths attributed to external causes, South Australia 2005–10**

	2010	2005–10	Rate[1] per 100 000 2005–10
TOTAL	**25**	**193**	**9.1**
Sex			
Female	10	75	7.3
Male	15	118	10.9
Age Group			
Infants (<1year)	1	35	30.2[2]
1–4 years	7	43	9.7
5–9 years	2	15	2.6
10–14 years	3	22	3.6
15–17 years	12	78	20.6
Cultural Background			
Aboriginal	0	21	28.7
Contact with Families SA			
Families SA	9	60	
Usual residence			
Outside SA	0	12	
Socioeconomic Background (SEIFA IRSD)[3]			
Most disadvantaged SEIFA 5	5	47	10.8
SEIFA 4	9	41	9.9
SEIFA 3	4	41	10.5
SEIFA 2	5	29	7.3
Least disadvantaged SEIFA 1	2	23	5.7
Remoteness (ARIA+)[3]			
Major City	11	101	7.0
Inner Regional	8	28	10.9
Outer Regional	4	29	11.3
Remote and Very Remote	2	23	27.9

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

2 The infant mortality rate is calculated per 100 000 live births. See Section 4.11.

3 South Australian residents only included. The death of one child in 2007 has not yet been assigned a place of residence.

Source: Child Death and Serious Injury Review Committee database

FINDINGS – *Deaths Due to External Causes*

- The death rate attributed to external causes was 9.1 deaths per 100 000 children for the period 2005–10.
- There has been an 11% decrease in the number of deaths on average over the individual years recorded by the Committee; 11.7 (2005), 12.0 (2006), 8.8 (2007), 7.4 (2008), 7.9 (2009) and 7.0 (2010). This average decrease reduces to 5% when deaths from SIDS and undetermined causes were included. See Section 1.4
- For both the 2010 and the 2005–10 period, males were more likely to die than females from external causes, and young people aged 15–17 years had the highest death rate of any age group (20.6 deaths per 100 000 children).
- No Aboriginal children died from external causes in 2010 but over the period 2005–10 Aboriginal children were 3.4 times more likely than non-Aboriginal children to die due to external causes: 28.7 deaths per 100 000 Aboriginal children, 8.4 deaths per 100 000 non-Aboriginal children.
- Children who lived in areas of greatest disadvantage (SEIFA 5) had a higher rate of death attributed to external causes than those who lived in areas of least disadvantage (SEIFA 1), 10.8 deaths vs 5.7 deaths per 100 000 children.
- Living in a rural or remote area increased a child's risk of death in comparison to living in a metropolitan residence (7.0 deaths per 100 000 children in metropolitan Adelaide compared to 27.9 deaths per 100 000 in remote and very remote areas).
- In the period 2005–10, of the children whose deaths were attributed to external causes, 60 (31%) of these children or their families had had contact with Families SA, a rate of 2.8 deaths per 100 000 children. Contact with Families SA may indicate the increased vulnerability of a child.

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Table 9 provides details about the deaths attributed to external causes in 2010 and for 2005–10.

*Table 9: External causes of child deaths by age and cause of death, South Australia 2005–10**

Cause of death	Infants < 1 year	1–9 years	10–17 years	Total
2010				
Transport	0	4	9	13
Accidents	1	1	1	3
Suicide	0	0	4	4
Other causes (drowning, fatal assault, fire-related deaths)	0	4	1	5
TOTAL	**1**	**9**	**15**	**25**
2005–2010				
Transport	5	16	57	78
Accidents	15	7	8	30
Fatal assault or neglect	7	13	8	28
Suicide	0	0	20	20
Drowning	3	13	2	18
Health- system-related adverse events	5	5	3	13
Fire-related	0	4	2	6
TOTAL	**35**	**58**	**100**	**193**

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

Transport crashes accounted for 78 deaths (40.4%) attributed to external causes between 2005 and 2010; the majority of these deaths occurred in the 10–17 year age group. All suicide deaths occurred in this age group. In contrast, the majority of accidental deaths were infants younger than one year of age. Young children 1–9 years more commonly died from causes such as fatal assault, neglect or drowning. Further details concerning each of these causes of death can be found in the following sections of the report.

1.5.1 Transport

Between 2005 and 2010, 78 children or young people[13] have died in transport incidents.

Transport deaths include deaths arising from incidents involving a device used, or designed to be used for, moving people or goods from one place to another. These incidents may involve pedestrians and include railway or water transport. Incidents may occur on public highways or places other than a public highway.

13 In this report 'young people' are children younger than 18 years.

*Table 10: Child deaths attributed to transport incidents by age and sex, South Australia 2005–10**

Year	Infants <1 year	1–4 years	5–9 years	10–14 years	15–17 years	Total	Rate[1] per 100 000
2005	0	3	1	3	8	15	4.3
2006	1	2	1	0	7	11	3.1
2007	2	1	0	3	10	16	4.6
2008	1	1	3	0	6	11	3.1
2009	1	0	0	1	10	12	3.4
2010	0	2	2	3	6	13	3.6
Sex							
Females	4	2	4	6	15	31	3.0
Males	1	7	3	4	32	47	4.3
TOTAL	**5**	**9**	**7**	**10**	**47**	**78**	**3.7**

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11

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

FINDINGS – *Transport*

- The death rates for transport incidents have fluctuated over the six year period but no trend was found (p=0.7).
- The greatest number of deaths, in any year, occurred in young people 15–17 years of age. This group represented over half the total number of deaths (60.3%).
- Between 2005 and 2010, the greatest number of transport deaths were of young men 15–17 years of age (41%).
- The death rate in 2010 was 3.6 deaths per 100 000 children.

Transport deaths 2010

Thirteen children died in eleven transport incidents in 2010; three children died in one incident. Seven were males. Four children died in pedestrian incidents, six as passengers and three young people as drivers.

The pedestrian deaths of young children highlighted the need for adult supervision and vigilance in and around the family home. In two incidents, young children were considered to be safe and supervised in a home environment, but had moved quickly and quietly at times when adult supervision had lapsed.

The pedestrian deaths of young people raised issues about pedestrian safety in inner city areas where young people drink and socialise. The circumstances of another death suggest the need for investigation into the use of pedestrian controls around bus stops.

Six children and young people died as passengers in motor vehicles. Only one young person was not wearing a seat belt and died when ejected from the vehicle. Two other young people died in circumstances where they were in the company of several friends in a vehicle driven by a 'P' plate driver. Both had spent time socialising for several hours and excessive speed was a factor in both separate crashes.

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None of the three young people who were driving a motor vehicle at the time of their death had been consuming alcohol prior to the crash. Speed and driver inexperience were the main factors in the circumstances of their deaths.

There was an equal distribution of incidents in rural and metropolitan locations.

Four incidents occurred at weekends and seven during the week including one on a major public holiday.

Incidents involving toddlers and children all occurred during the day: 8.00 – 16.00 hours; whereas the incidents involving young people occurred in the evening or in the early morning.

ACTIONS – *Transport*

- The Committee wrote to Farmsafe and Kidsafe SA about keeping children safe in rural areas. Kidsafe SA indicated that they have an ongoing role in providing training for health professionals in rural areas about child safety.
- The Committee has consulted with the Centre for Automotive Safety Research (CASR)[14] about ways to improve the safety of pedestrians and to reduce road fatalities amongst young people. Based on its research, CASR recommended several broad systemic changes:
  - A speed limit of 40 kph in designated areas is one of the most effective ways to reduce pedestrian fatalities.
  - The use of purpose-designed bollards at bus stops and pedestrian crossings can both protect pedestrians from injury and 'channel' their attention to, and passageway across, roadways. Median strips are also an effective pedestrian safety measure.
  - Immediately available and well-documented ways to reduce road fatalities amongst young people are to increase the driving age to 18 years and the use of both a night curfew and passenger restrictions in the Graduated Licensing Scheme.
- The Committee supports community campaigns to increase awareness of 'drink walkers.'
- The Committee has written to the Motor Accident Commission requesting information about campaigns addressing toddlers and driveway safety.

14 http://casr.adelaide.edu.au Last accessed August 2011.

1.5.2 Suicide

The Committee has attributed the deaths of 20 young people to suicide in the 2005–10 period.

The Committee classifies a death as suicide where the intent of the child was clearly established. It also attributes a death to suicide if careful examination of coronial, police, health and education records indicates a probable intention to die.

*Table 11: Child deaths attributed to suicide, South Australia 2005–10**

Year	2005	2006	2007	2008	2009	2010	Total
TOTAL	5	5	0	2	4	4	20

Source: Child Death and Serious Injury Review Committee database

FINDINGS – *Suicide*

- The deaths of 20 young people have been attributed to suicide between 2005 and 2010. With one exception, all have been 15–17 years old.
- Fourteen of these young people were male (70%) and 4 were young Aboriginal men (20%).
- The mechanism of death in 17 cases (85%) was hanging. Two deaths were attributed to poisoning. Events most commonly occurred at the young person's place of residence.

Suicide deaths 2010

All four young people whose deaths were attributed to suicide in 2010 were male. On the basis of the information reviewed by the Committee these common themes were identified:

- The mechanism of death in three cases was hanging and all events occurred at the young person's place of residence,
- In three cases, the event appears to have been planned by the young person. Suicide notes were found and there was no-one else present at the time of the event.
- Three young people had either attempted suicide previously and/or had a history of self-harming behaviours,
- Three of these young people were described as having increasingly problematic relationships with parents or carers, and with peers both at work and at school. Violent altercations between the young person and their parents were described in two cases,
- Drug use, depression, psychosis and intellectual disability were identified in all or some of these young people's lives, and
- Various services had been involved with these young people including Families SA, Disability SA, Women's and Children's Hospital, private mental health practitioners and SA police.

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ACTIONS – *Suicide*

- More detailed information will be sought about the lives of these young people and will be included in the Committee's in-depth review of the 10 deaths attributed to suicide between 2008–10.
- In 2008 the Committee recommended the development of a State-wide suicide prevention strategy for young people and continues to monitor, support and promote the development of such a strategy. See Section 2.4.2.
- The Committee's in-depth review of the 10 deaths occurring in 2005–06 recommended better resourcing so that young people can access the supports they need, long term supports for the families of young people who may be vulnerable and better communication between agencies.

1.5.3 Accidents

A total of 30 deaths have been the result of accidents in the six year reporting period and three deaths were the result of accidents in 2010.

Accidents exclude deaths attributed to transport incidents, fires or drowning and are also referred to as deaths from unintentional injuries, accidents most commonly include suffocation, strangulation and choking, falls and poisoning.

*Table 12: Accidental child deaths by age, South Australia 2005–10**

	2005	2006	2007	2008	2009	2010	Total
Accidental deaths – infants < 1 year old	6	5	2	1	0	1	15
Accidental deaths – 1–17 years	1	1	6	4	1	2	15
TOTAL	**7**	**6**	**8**	**5**	**1**	**3**	**30**

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

FINDINGS – *Accidents*

- Between 2005 and 2010, half of the accidental deaths were infants younger than one year old. Fourteen of these deaths were attributed to suffocation or asphyxia; these infants were placed to sleep in unsafe sleeping environments.
- Males accounted for 70% of the accidental deaths between 2005 and 2010.
- There has been a decline in the number of accidental deaths in the six year reporting period, which appears primarily due to a decline in deaths of infants younger than one year being attributed to suffocation.

Accidental infant deaths 2005–10

In 14 of the 15 accidental infant deaths, the cause of death was suffocation or asphyxia.

- Four infants died sleeping on a lounge or couch – two were co-sleeping with a parent.
- Six infants were found lying face down on a soft sleeping surface such as a pillow or multiple layers of bedding. None of these infants were sleeping in an Australian Standards cot.
- Only two infants were placed to sleep face down; most were placed to sleep on their back or side.

Accidental deaths of children 1–4 years 2005–10

The circumstances of accidental deaths of these children most commonly involved entrapment resulting in neck compression and hanging.

- Two children were caught in blind cords when placed in their cot next to a window.
- Other entrapment hazards included a bike helmet, a shopping trolley and open filing cabinet drawers.

Accidental deaths of young people 15–17 years 2005–10

Over the six year reporting period, the deaths of six young men resulted from accidents.

- Two young men died in falls and three died from some kind of accidental poisoning.
- Four deaths, from various causes, occurred when young people were in the company of their peers. These four deaths involved risk-taking behaviours.

ACTIONS – *Accidents*

- The Committee supports SIDS and Kids safe sleeping messages, especially with a wider focus on carers such as fathers and grandparents.
- The Committee maintains a productive relationship with Kidsafe SA and supports the 'Home Safety Checklist'[15] and will continue to highlight concerns about particular issues with them.

15 www.gtp.com.au/kidsafesa/inewsfiles/4986%20checklist%200-4%20FS%20V2proof%20Final.pdf Kidsafe SA Inc *Home Safety Checklist*. Last accessed August 2010.

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1.5.4 Fatal Assault

During 2005–10, the Committee attributed 28 deaths to either fatal assault or neglect. Two deaths were attributed to fatal assault in 2010.

The Committee characterises a fatal assault as *the death of a child from acts of violence perpetrated upon him or her by another person* (Lawrence, 2004; p 842). The definition of neglect encompasses both chronic neglect and single incidents of neglect and includes a carer's failure to provide for the child's basic needs, abandonment, inadequate supervision and refusal or delay in the provision of medical care (NSW Child Death Review Team, 2003, p 15). See Section 4.5.5 for further details.

*Table 13: Child deaths attributed to fatal assault and neglect, South Australia 2005–10**

	2005	2006	2007	2008	2009	2010	Total
Cause of death							
Assault	2	5	1	3	4	2	17
Neglect	2	2	0	0	1	0	5
Other Causes[1]	0	2	0	2	2	0	6
TOTAL	**4**	**9**	**1**	**5**	**7**	**2**	**28**

1 Other causes include suffocation, poisoning and incineration.

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

Based on the information so far available to the Committee, 17 deaths have been attributed to fatal assault, and five to neglect. The deaths of the majority of children younger than four years of age in this category have been attributed to some form of fatal assault; in five of these young children, there was evidence of previous injuries. Other mechanisms of death included suffocation, poisoning and incineration. The majority of alleged perpetrators were parents.

FINDINGS – *Fatal Assault*

- The number of deaths attributed to fatal assault or neglect has fluctuated over the six year period from one death in 2007, to nine in 2006.
- Almost twice the number of males compared to females have died (18 deaths, 64.3%) and children younger than four years old account for 70% (19 deaths) of all deaths.

ACTIONS – *Fatal Assault*

- During 2010–11 the Committee conducted in-depth reviews into the deaths of three infants whose deaths were attributed to some form of assault. Recommendations addressing key issues such as the lack of services available to support vulnerable families, the training and supervision of frontline workers and interagency collaboration can be found in Sections 1.7.3, 4 and 5.
- The Committee will continue to take these issues into account when it considers other cases of fatal assault in greater detail once prosecution and coronial processes have been concluded.

1.5.5 Drowning

Between 2005 and 2010, 18 children drowned; the majority of drownings occurred in private swimming pools. Other locations included: a water tank, a fish pond, a bath tub and bodies of water such as rivers and the sea. Two children drowned in 2010.

*Table 14: Child deaths attributed to drowning, South Australia 2005–10**

	2005	2006	2007	2008	2009	2010	Total
TOTAL	2	5	4	2	3	2	18

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

FINDINGS – *Drowning*

- Between 2005 and 2010, half of the children who drowned (9 deaths) were between 1–4 years old.
- Seven of the nine 1–4 year olds drowned in the family swimming pool. In 4 of these 7 drownings, the pool gate had been left open.

The deaths of 1–4 year olds occurred after it was wrongly assumed that they were being supervised and there was no access to the pool.

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ACTIONS – *Drowning*

- The Committee completed an in-depth review into the drowning deaths of 4 young children and made recommendations about swimming pool safety (see Section 1.7.2).
- The Committee has submitted a letter to the Medical Journal of Australia concerning the quality of information about drownings that is available for closer scrutiny in South Australia.

1.5.6 Fire-related Deaths

Six fire-related deaths were recorded in the 2005–10 period; one in 2010. Four of these deaths were associated with the Port Lincoln bush fires in 2006 and have been subject to a coronial inquest.[16] Two deaths occurred in vehicles – a motor car and a caravan in circumstances suggesting that the child and/or their siblings had access to a lighter or matches and were not under adult supervision.

1.5.7 Health-System-Related Events

No health-system-related deaths were recorded in 2010, although 13 deaths were attributed to these causes in previous years.

1.6 Vulnerable Groups of Children

Poor social and economic circumstances adversely affect health throughout life. Children who live in poverty, are Aboriginal or geographically isolated are more likely to be at risk of poorer health and wellbeing. The deaths of the children in these vulnerable populations are examined in more detail in the following sections. It should be noted that some children fall within more than one of these vulnerable populations.

1.6.1 Contact with Families SA

Children or their families may have been in contact with Families SA for reasons not directly related to child safety issues. For example they or their families may have sought or received financial assistance from Families SA. Families SA also receives notifications from various sources that children are or may be at risk.

The Australian Institute of Health and Welfare[17] recorded an increase in the number of child protection notifications in South Australia, from 17 473 in 2004–5 to 23 221 in 2008–09, and a decrease to 20 298 in 2009–10 which was noted to coincide with the introduction of Families SA's C3MS client information system. Throughout the period 2005–10, the death rate based on the Committee's definition of contact with Families SA, has remained relatively stable: 8.9 per 100 000 children (2005), 8.9 (2006), 8.3 (2007), 7.4 (2008), 9.3 (2009) and 8.7 (2010) (p=0.94).

Infants younger than one year old have the highest death rate of all ages; they are also the age group who are subject to the highest rate of substantiation of child protection concerns in any year, both in South Australia and nationally[18] (Table 15).

16 www.courts.sa.gov.au/courts/coroner/findings/findings_2007/Wangary_Fires_Inquest.pdf *South Australian Coronial Inquest 2007 Wangary Fires.* Last accessed July 2011.

17 www.aihw.gov.au/publication-detail/?id=6442475488&tab=2 AIHW 2011 *Child protection Australia 2009–10.* Child welfare series no. 51. Cat. no. CWS 39. Canberra: AIHW. Last accessed October 2011.

18 Ibid

*Table 15: Demographics of child deaths and contact with Families SA, South Australia 2005–10**

	2010	2005–10	RATE[1] per 100 000
TOTAL	**31**	**181**	**8.6**
RATE per 100 000	**8.7**		
Sex			
Female	10	69	6.6
Male	21	112	10.4
Age Group			
Infants (<1year)	15	86	74.3[2]
1–4 years	7	31	7.0
5–9 years	2	12	2.1
10–14 years	2	21	3.4
15–17 years	5	31	8.2
Cultural Background			
Aboriginal	4	40	54.6
Usual residence			
Outside SA	0	4	
Socioeconomic Background (SEIFA IRSD)[3]			
Most disadvantaged SEIFA 5	11	64	14.7
SEIFA 4	12	54	13.0
SEIFA 3	6	32	8.2
SEIFA 2	2	17	4.3
Least disadvantaged SEIFA 1	0	10	2.5
Remoteness (ARIA+)[3]			
Major City	22	102	7.0
Inner Regional	4	25	9.7
Outer Regional	5	32	12.4
Remote and Very Remote	0	18	21.8

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

2 The infant mortality rate is calculated per 100 000 live births. See Section 4.11.

3 South Australian residents only included. The death of one child in 2007 has not yet been assigned a place of residence.

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

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Contact with Families SA and causes of death

Although there is a community tendency to focus on causes of death such as fatal assault in this group of vulnerable children, the figures presented for the 2005–10 time period, show different patterns in the causes of death across three age groups.

*Table 16: Child deaths and contact with Families SA by age and cause of death, South Australia 2005–10**

	Infants < 1 year	1–9 years	10–17 years	Total
2010				
Cause of death				
Illness or Disease	8	4	3	15
Undetermined Causes	7	0	0	7
External Causes	0	5	4	9
TOTAL	**15**	**9**	**7**	**31**
2005–2010				
Illness or Disease				
Conditions in the perinatal period	30	0	0	30
Congenital and chromosomal abnormalities	14	4	2	20
Cancers	0	8	5	13
All other illness or disease and causes not yet known	9	9	12	30
Illness or Disease	**53**	**21**	**19**	**93**
Undetermined Causes	**24**	**3**	**1**	**28**
External Causes				
Transport	1	4	14	19
Fatal assault/neglect	2	7	3	12
Accidents	6	2	3	11
Suicide	0	0	10	10
All other external causes	0	6	2	8
External Causes	**9**	**19**	**32**	**60**
TOTAL	**86**	**43**	**52**	**181**

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

FINDINGS – *Contact with Families SA*

- In the six years 2005–10; illness and disease accounted for 93 (51%) of the deaths of children whose families had had contact with Families SA. Fifty-three of these deaths (57%) were infants younger than one.
- Six infants younger than one year died from accidental causes 6 deaths) and 24 deaths were attributed to undetermined causes. The predominant risk factor in the circumstances of theses deaths was unsafe sleeping conditions. Deaths in these circumstances are preventable.
- In 10–17 year olds, deaths from external causes such as transport crashes and suicide reflect the vulnerabilities that exist in this age group. Deaths from external causes in this age group are almost double those from illness or disease.

The nature of vulnerability

Key issues that prompted notification to Families SA for children who died in 2010, showed that these children were living in families facing many challenges that may have heightened the vulnerability of these children in the years prior to their death. The most commonly occurring issues were:

- Unstable family relationships (55%),
- Financial difficulties (39%),
- Family violence (30%),
- Parent(s) with alcohol and other drug problems (30%),
- Parent(s) with mental health problems (26%), and
- Problems with housing (26%).

For half of these children, their families faced at least three of these issues.

ACTIONS – *Contact with Families SA*

The Committee uses its in-depth review process to identify systemic issues in Families SA's service delivery and to make recommendations for change. The key issues identified in these reviews have included:

- Risk assessment and the role of professional judgment.
- Case management as the vehicle for comprehensive service delivery.
- Recruitment, training, support and supervision of new Families SA workers.
- Interagency collaboration with health, education and disability services and especially in relation to the delivery of services to vulnerable infants and their families.
- Collaboration with and support for Aboriginal workers both within Families SA and located in other government and non-government services.
- Services for children under Guardianship of the Minister, in particular reunification policies and practices, the provision of health and therapeutic services and the transition of young people from Guardianship.
- In 2011–12 the Committee plans to commence an in-depth review focussing on the deaths of very young infants whose parents have been under the Guardianship of the Minister.

These issues are reflected in the in-depth reviews detailed in Section 1.7 that were undertaken in 2010–11 and in the Committee's efforts to monitor, promote and support change (Section 2).

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1.6.2 Aboriginal Children

Seventy Aboriginal children died in South Australia between 2005 and 2010. The death rate was 95.5 deaths per 100 000 Aboriginal children. Eight Aboriginal children died in 2010. The death rate in 2010 was 65.5 deaths per 100 000 Aboriginal children. This rate of death is twice the rate for non-Aboriginal children.

*Table 17: Demographics of deaths of Aboriginal children, South Australia 2005–10**

	2010	2005–10
TOTAL	**8**	**70**
RATE per 100 000	**65.5**	**95.5**
Sex		
Female	4	29
Male	4	41
Age Group		
Infants (<1year)	6	39
Infant Mortality Rate [1]per 1000 livebirths	9.7	11.2
1–4 years	0	6
5–9 years	0	3
10–14 years	1	7
15–17 years	1	15
Cultural Background		
Aboriginal	4	40
Usual residence		
Outside SA	2	17
Socioeconomic Background (SEIFA IRSD)[2]		
Most disadvantaged SEIFA 5	3	30
SEIFA 4	1	14
SEIFA 3	2	5
SEIFA 2	0	4
Least disadvantaged SEIFA 1	0	0
Remoteness (ARIA+)[2]		
Major City	3	22
Inner Regional	0	0
Outer Regional	3	14
Remote and Very Remote	0	17

1 The Infant Mortality Rate is calculated per 1000 live births. See Section 4.11

2 South Australian residents only included.

Source: Child Death and Serious Injury Review Committee database

FINDINGS – *Aboriginal Children*

- Aboriginal children were 2.8 times more likely to die than non-Aboriginal children (95.5 deaths per 100 000 Aboriginal children, 33.2 for non-Aboriginal children).
- There has been an 11% decrease in the number of deaths on average over the individual years recorded by the Committee; 139.2 (2005), 90.1 (2006), 98.3 (2007), 90.1 (2008), 90.1 (2009) and 65.5 (2010). This average decrease reduces slightly to 9% when deaths from Aboriginal children resident in South Australia only were considered.
- Aboriginal infants younger than one year had a higher rate of death than non-Aboriginal infants in the period 2005–10 (11.2 deaths per 1000 Aboriginal children, 3.6 for non-Aboriginal children).
- Nearly 60% of children or their families had had contact with Families SA in the 3 years prior to their death.
- The majority of Aboriginal children who died came from the State's most disadvantaged areas, but were evenly distributed between city, regional and remote areas of the State.

Aboriginal children and causes of death

The cause of death for seven of the eight children who died in 2010 was illness or disease; this was also the cause of death for 40 of the 70 children who have died between 2005 and 2010.

*Table 18: Deaths of Aboriginal children by age and cause of death, South Australia 2005–10**

Cause of death	Infants < 1 year	1–9 years	10–17 years	Total
2010				
Illness or Disease	5	0	2	7
Undetermined Causes	1	0	0	1
External Causes	0	0	0	0
TOTAL	**6**	**0**	**2**	**8**
2005–2010				
Illness or Disease	27	6	7	40
Undetermined Causes	8	1	0	9
External Causes	4	2	15	21
TOTAL	**39**	**9**	**22**	**70**

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

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

Twenty-seven (67%) of the 40 deaths attributed to some kind of illness or disease during 2005–10 were infants younger than one year. The main causes of these deaths were associated with conditions occurring in the perinatal period, often associated with extreme prematurity and may reflect difficulties in maternal health or antenatal care. Transport incidents accounted for seven of the deaths from external causes. The deaths of four young Aboriginal people were attributed to suicide and four were the result of accidents.

Aboriginal children who were not resident in South Australia

In the 2005–10 period, 17 Aboriginal children who died were not normally resident in South Australia at the time of their death. The majority of these children died from illness or disease in South Australian hospitals. Twelve of these children were normally resident in the Northern Territory. These deaths reflect cross-border medical care arrangements whereby seriously ill children are brought from Northern Territory to South Australia for high level medical care.

ACTIONS – *Aboriginal Children*

- In 2010–11 the Committee reviewed the death of a young Aboriginal infant (see Section 1.7.3) and made recommendations about child protection and health services, and the inter-agency collaboration that is necessary to provide services to vulnerable Aboriginal families with complex needs.
- In 2009–10 the Committee reviewed the deaths of six very young Aboriginal infants and made recommendations about better services for Aboriginal families, especially Aboriginal women. The Committee continues to monitor the efforts being made by SA Health to provide these services (see Section 2.2.2).
- In 2008–9 the Committee made particular recommendations concerning Aboriginal children with disabilities and the need for careful case planning and the issue of premature case closure.
- The Committee has made recommendations about access to services in rural and remote areas including health, education, child protection and mental health services and continues to monitor the progress of these recommendations, particularly in relation to the development of SA Health's State-wide suicide prevention strategy (see Section 2.4.2).

1.6.3 The Impact of Socioeconomic Disadvantage – SEIFA IRSD

Table 2 highlighted the distribution pattern of socioeconomic disadvantage and death. Fifty percent of the children who died lived in the State's most disadvantaged areas (SEIFA 4 and 5) compared to 30% of deaths which occurred in the least disadvantaged areas of the State. Rates of death, which take into account the population of children in each quintile, were also highest in SEIFA 4 and 5 (44.0 and 38.4 per 100 000 children).

The impact of disadvantage on death is accentuated in the SEIFA IRSD for the two vulnerable groups of children (Tables 15 and 17). Two thirds of children who died and who

had had contact with Families SA lived in the State's most disadvantaged areas and there was an increase in the rate of child death with increasing disadvantage in this vulnerable population. Forty-four of the 53 Aboriginal children who died and were resident in South Australia lived in areas of most disadvantage.

In the CDSIRC 2009–10 Annual Report, an increase in deaths in the south east country region was noted. Investigation of the cause of death, distribution of the deaths and timing of deaths was undertaken and it was concluded that this increase was due to chance.

1.6.4 The Impact of Geographical Remoteness – ARIA+

The Accessibility and Remoteness Index of Australia or ARIA+[19] is a distance-based measure which defines five categories of remoteness based on road distance to major service centres. Categories are determined by reference to postcode (AIHW, 2004). The categories are: major city, inner regional, outer regional, remote and very remote.

The higher rate of deaths in remote and very remote areas suggested that services are harder to access in these areas (Table 2).

1.7 In-Depth Reviews 2010–11

Part 7C of the Act gives the Committee authority to undertake the in-depth review of cases of child death and serious injury. The objective of such reviews is the identification of desirable changes in legislation, policies, practices or procedures that will reduce the likelihood of deaths or serious injuries in similar circumstances. The Committee has adopted a process for the identification of cases for review and for the conduct of the review (see Section 4.3).

In 2010–11 the Committee submitted five in-depth reviews to the Minister for Families and Communities. One review considered serious injury and five children under guardianship of the Minister. Other reviews concerned the deaths of four children in drowning accidents and there were three individual reviews of cases of infant deaths.

1.7.1 In-Depth Review: Children under Guardianship of the Minister

Children entering into Guardianship do so because the Youth Court decides that their need for care and protection cannot be supplied by their parents. It is expected that Guardianship will provide them with a degree of protection and nurture that promotes immediate and marked improvement across all areas of their health and wellbeing.

The Committee reviewed cases of 5 children under Guardianship with a view to assessing the nature and severity of serious injury sustained by those children both before and after coming under the Minister's care.

19 See Section 4.1.8 for more details.

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1.7.1 In-Depth Review: Children under Guardianship of the Minister *(continued)*

Submission Date July 2010

Issues Arising from the Review

The impact of short term, multiple care arrangements and repeated attempts at re-unification highlighted the need for Families SA to improve comprehensive case planning and management processes.

There was evidence of Families SA and other agencies striving for the best outcome for these children on a number of fronts including physical health, sometimes their emotional health, their educational achievements, and working with foster carers to help manage challenging behaviours.

There was no evidence of a systematic or common approach to the collection and recording of information about each child. The case files were voluminous, repetitive and lacked regular summaries which would have allowed a reader to determine the cumulative progress of the child, the child's needs in overcoming the trauma of abuse and neglect and what was needed to support the child's development in all other domains.

A critical gap in the collecting and recording of information was the absence of any formal, holistic assessment of each child's wellbeing (health, development, learning, socialisation and social supports, cultural and spiritual needs, and impact of trauma) on entry into guardianship, at regular periods through the guardianship period, and on transition from guardianship to independent adulthood. The lack of progressive assessment of all of a child's needs meant that appropriate resources to meet those needs were not then applied.

Recommendations

That Families SA establish a planned process for children under guardianship to assess, monitor and respond to the therapeutic and developmental needs of each child, and so ensure that their learning, socialisation, relationship, health and emotional needs are met throughout the period of guardianship. This process should be underpinned by a child-centred case management, not case work, approach which ensures the wellbeing of each child under the Minister's care.

That Families SA initiate an independent and regular quality audit of a sample of case files for children under guardianship of the Minister to monitor child wellbeing outcomes, practice quality and adherence to policies and operational procedures for these children. Such an audit might cover 10% of all cases, for example, and would complement existing internal audit and quality measures undertaken by Families SA.

That Families SA monitor the implementation of its policy on reunification with families of origin for children under guardianship, to determine if the application of the policy is in line with current research and to monitor the effects of reunification and attempted reunification on children under Guardianship.

1.7.2 In-Depth Review: Drowning

This in-depth review included an overview of the circumstances of all drowning deaths in South Australia since 2005, but focused on the circumstances of deaths of under fours in private swimming pools.

Submission Date December 2010	**Year of Death** 2007–08

Issues Arising from the Review

Necessity for close and constant supervision of children around all bodies of water.

Pool fencing that is compliant, maintained and utilised correctly ie keeping pool gates closed.

Recommendations

The Minister support efforts of the South Australian Government to promote, enforce and monitor isolation pool fencing.

The Minister write to the Minister for Urban Development and Planning indicating her support and requesting information concerning the current status of changes to building code regulations which will enforce isolation pool fencing and compliance legislation.

The Minister support any across Government efforts to develop appropriately targeted media campaigns about swimming pool safety, especially in relation to ensuring that swimming pool gates remain closed at all times and the importance of supervision.

1.7.3 In-Depth Review: Vulnerable Infant, Aboriginality, Complex Cases

Cases involving Aboriginal children or young people are often complex, with intergenerational issues of abuse and neglect evident in the family's history. This kind of complexity can place new born infants at high risk. In such complex cases there needs to be very clear understanding about which agency is managing the case and each agency's responsibilities. Aboriginal services or workers need appropriate support, supervision and resources to help them provide services to these families.

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

1.7.3 In-Depth Review: Vulnerable Infant, Aboriginality, Complex Cases *(continued)*

Submission Date June 2011	**Year of Death** 2005

Issues Arising from the Review

The issues highlighted in this review were consistent with those identified in previous reviews of infant deaths, from various causes including fatal assault, accidental suffocation and in this instance, neglect. The issues were:

- Assessment and support of vulnerable families in the ante-natal period.
- Assessment and case management of vulnerable infants prior to their discharge from hospital.
- Collaboration between agencies who support vulnerable families.
- Long-term support for vulnerable families.
- Training and supervision of Families SA workers in the management of complex cases.
- SA Health processes for the management of vulnerable families before and after discharge from hospital.
- There are policies, procedures and guidelines in place concerning the assessment and management of high risk infants, but Families SA needs to improve practice leadership and interagency collaboration to put in place case management structures supporting this vulnerable family.
- Families SA's existing case management structure was not well enough developed to ensure appropriate and timely services were provided by the Aboriginal support service.
- SA Health had not established appropriate supervision and support needed by the Aboriginal workers or the Aboriginal support agency.

Recommendations

Families SA have appropriate training programs in place for new workers based on a clear set of competency standards which must be met and that these competencies are aligned with the degree of complexity in the cases they are given to manage.

Families SA have appropriate training programs in place for supervisors and senior practitioners based on a clear set of competency standards which align with the types of supervision they provide to new workers.

Families SA ensure it has policies in place so that complex cases are not allocated to workers with less than the predetermined level of competency.

SA Health have policies in place which ensure the appropriate management and supervision of Aboriginal workers who are required to manage complex and high risk cases. These policies should include guidelines about appropriate levels of accountability.

Families SA and SA Health have very clear and agreed protocols with Aboriginal support services which outline case management responsibilities and guidelines for levels of support needed for Aboriginal workers who are involved in the management of complex and difficult cases. The Committee recommends that case management remains with the government agency.

1.7.4 In-Depth Review: Vulnerable Infant, Case Management, Worker Training and Supervision

The Committee recognised that this death occurred four years ago. Many of the issues identified in this case are similar to those which the Committee has called to the Minister's attention in reviews submitted since that time. The Committee decided to review this case with a view to identifying whether there was any evidence to suggest that system changes had been implemented since 2006 that would prevent such a death from occurring again.

Submission Date December 2010	**Year of Death** 2006

Issues Arising from the Review

The family was 'vulnerable' and the infant was at 'high risk.' The agencies involved in supporting the parents had policies and procedures in place which should have been able to provide ongoing, supportive services.

This case highlighted the actual lack of support services available for young parents in general and young people who have been under the Guardianship of the Minister in particular.

It would appear to the Committee that:

- lack of training and supervision of frontline workers led to poor practice and poor decision making; and
- poor collaboration between agencies prevented sharing vital information about this family and prevented the provision of appropriate services.

The Committee has previously made recommendations, and received responses to recommendations, about these issues. The responses confirm that Families SA and SA Health have made changes to their policies and procedures and have encouraged practice change by providing workers with training and assessment and planning tools and by reviewing supervision structures.

More recently, the Committee received responses about its review of Sudden Unexpected Deaths in Infancy (CDSIRC Annual Report 2009–10) which again highlight the policies and processes that Families SA has put into place to improve its responses to vulnerable families and high risk infants.

Similarly, SA Health has indicated that the problems with its Universal Home Visiting notification system have been addressed and that it has started working on measures to ensure that vulnerable families receive appropriate services both before the birth of an infant and after discharge.

SECTION 1: CHILD DEATHS SOUTH AUSTRALIA 2005–10 AND IN-DEPTH REVIEWS 2010–11

1.7.4 In-Depth Review: Vulnerable Infant, Case Management, Worker Training and Supervision *(continued)*

Submission Date December 2010	**Year of Death** 2006

Recommendations

Rather than make further recommendations that result in responses detailing these issues again, the Committee requested the following information from Families SA:

In what ways will Families SA evaluate changes in the quality of assessment and case management practices by frontline workers over the next 12 month period?

In this time frame, how will they monitor whether the new tools and strategies are being appropriately and effectively implemented by workers, supervisors and managers, and correct any deficiencies in implementation?

What structures are in place to use the information gathered from such evaluation to inform the training provided to frontline workers to enhance their competence and confidence?

What outcomes have been achieved as a result of the Adverse Events Committee review relating to this death?

1.7.5 In-Depth Review: Vulnerable Infant, Exchange of Information

The Committee found that a relevant and timely exchange of information had occurred between the government agencies and private practitioners involved in this case.

Submission Date April 2011	**Year of Death** 2007

Issues Arising from the Review

There appeared to be relevant and timely exchange of information between the government agencies and private practitioners and between the private practitioners themselves. All private practitioners appeared to be aware of each other's involvement with this family, and referrals were followed-up and reports were exchanged.

The only exception to the relevant and timely exchange of information occurred between two SA Health agencies, one a specialist mental health service. This issue was identified in an internal review undertaken by CYWHS and recommendations were made about improving the timeliness of these lines of communication.

The death of this infant could not have been reasonably predicted by the health professionals involved.

Submission Date April 2011	**Year of Death** 2007

Recommendations

Lines of communication between two SA Health services should be improved to ensure the timely exchange of information about recently discharged clients. It is reasonable to expect that information could be exchanged within 24 hours of discharge.

1.8 In-Depth Reviews in Progress and Planned

The Committee has a number of in-depth reviews in progress including reviews of:

- two children who were under the Guardianship of the Minister,
- deaths attributed to suicide since 2007,
- the death of a young person and issues of service provision in the non-government sector, and
- five children and young people whose deaths were attributed to asthma.

In 2011–12 the Committee intends to commence in-depth reviews including:

- six children referred for review to the Committee by Minister Weatherill, the former Minister for Families and Communities. This review was necessarily delayed by criminal prosecution processes.[20]
- the deaths of very young infants whose parents have been under the Guardianship of the Minister,
- the deaths of children who had naso-gastric tubes or ventroperitoneal shunts, and
- a focus on the deaths of children with disabilities. As a first step the Committee plans to develop better ways to identify these children and monitor the causes of their deaths.

20 See s52S(4) of the Children's Protection Act, 1993.

SECTION 2:
IMPROVING THE HEALTH AND WELLBEING OF SA'S CHILDREN

Part 1.4 (3) – 'In the exercise of powers under this Act… the child's wellbeing and best interests are to be the paramount considerations.'

Children's Protection Act, 1993

SECTION 2: IMPROVING THE HEALTH AND WELLBEING OF SA'S CHILDREN

2.1 Achieving Systemic Change

In 2010–11 the Committee sought to contribute to better outcomes for children and young people by monitoring, promoting and supporting systemic change across many different areas.

In its Annual Report 2009–10 the Committee noted that responses to its recommendations were often about the agency's current policies and programs but said little about efforts to implement systemic change. During 2010–11, with the support of the Minister for Families and Communities, the Chair and members of the Committee have met with several key service agencies to discuss the implementation of its recommendations, the challenges in service delivery faced by these agencies, and plans for systemic change.

2.2 Better Outcomes for Vulnerable Infants

2.2.1 Antenatal Services, Discharge Processes and Post-discharge Follow-up

To achieve better outcomes for vulnerable infants, the Committee has made recommendations about:

- The importance of identifying and supporting vulnerable families antenatally and ensuring that services are put into place before an infant is born.
- The importance of comprehensive discharge planning for vulnerable infants that involves all agencies and ensures that one agency takes responsibility for co-ordination and monitoring the safety and wellbeing of the infant.

The Committee has previously focused on the importance of SA Health's 'universal home visit' (UHV) as a key capture point for identifying vulnerable infants and their families. The Committee will continue to advocate for a retrospective validation study to determine the characteristics of families who have not consented to a Universal Home Visit.

Through its correspondence and meeting with Children, Youth and Women's Health Service (CYWHS) the Committee has sought to establish the progress CYWHS has made to deliver services to vulnerable infants antenatally, at discharge and post-discharge. For example it has sought information about the progress of the evaluation of the Family Home Visiting Program. It was indicated that this evaluation was ongoing and on completion, the findings will be made available to the Committee.

The discharge planning process for vulnerable infants has been raised in all three individual in-depth reviews in 2010–11. The Committee has been informed by SA Health that the exchange of information between one identified service agency and other health agencies has been reviewed and improved with 60% of discharge summaries sent within 7 days. CYWHS indicated that 37% of all discharge summaries are completed within 48 hours of discharge. However, the Committee remains concerned about the process and timeliness of information regarding discharge of vulnerable infants, especially in relation to inter-agency collaboration.

…the collaboration between agencies, the oversight and coordination of each agency's contribution to the support of the family, must all be in place so that we can guarantee that the family will receive all necessary support services. The infant's care and safety must be assured. When infants are very young and very vulnerable, service failures can and do result in infant death.
Letter from CDSIRC Chair to Minister Rankine, June 2011

The Committee will continue to seek information and advice about this issue in its discussions with CYWHS and Families SA.

In consultation with the Committee, the Council for the Care of Children prepared a paper on systematic approaches to meeting the needs of the most disadvantaged families in South Australia. The paper outlined markers of vulnerability arising from the Committee's reviews of child deaths, and highlighted evidence-based principles for more effective ways of working with high need families who have young infants and children. A summary of the paper was presented at the 'Children Communities Connections Conference' in Adelaide in July 2010. The Council has also been working closely with CYWHS to develop a service model to support these families across all the domains of their lives, starting as early in pregnancy as possible.

2.2.2 Aboriginal Infants

The Committee has received information from CYWHS about the extension of the Aboriginal family birthing program into metropolitan Adelaide and UHVs with Aboriginal families. CYWHS has 82 women engaged in the metropolitan program, double the anticipated number. It recorded over 700 UHVs to Aboriginal families in 2009–10. In 2009, there were 610 Aboriginal infants born in South Australia. The Committee will continue to monitor the 'reach' of these programs.

The issues raised in one of the 2010–11 reviews (see Section 1.7.3) confirm findings from previous reviews and highlight the necessity for the Committee to continue to monitor and support systemic change that will ensure Aboriginal families receive appropriate support services antenatally and throughout their infant's early years.

2.2.3 Infants and Safe Sleeping

The Committee has continued to support systemic changes that will reduce the number of sudden and unexpected deaths of infants where unsafe sleeping practices are identified in the circumstances of the death.

Across agency guidelines for safe sleeping

SA Health has now published the *Safe Infant Sleeping Standards, Best Practice Indicators for Health, Families SA and Childcare Staff.*[21] All SA Health agencies and Families SA have incorporated these guidelines into their training and development packages.

21 www.sahealth.sa.gov.au/wps/wcm/connect/a965e20048a319a3bafcfe7675638bd8/4858+Safe+Sleeping+Standards.V9.2.PROOF.PDF?MOD=AJPERES&CACHEID=a965e20048a319a3bafcfe7675638bd8 SA Health *SA Safe Infant Sleeping Standards.* Last accessed October 2011.

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Infant products

In 2009 the Committee wrote to the Minister for Consumer Affairs about the advertising claims used to market a bassinette pillow, pointing out that the use of such pillows was in direct contradiction to the SIDS and Kids Safe Sleeping Guidelines.[22] The trader claimed the pillow to be: *The best protection against smothering* and *Approved and recommended by leading health authorities.* With the collaboration of SA Health and the Office for Consumer and Business Affairs the trader withdrew these representations of the product.

Following concerns raised about the use of baby slings for very young infants the Committee collaborated with the Coroner and Professor Roger Byard to ensure that the potential dangers of baby slings could be documented and brought to public attention. The Australian Competition and Consumer Commission (ACCC) has recently published and distributed a pamphlet about these issues.[23]

The universal home visit

The Committee has continued to seek information from Children, Youth and Women's Health Service about the 'coverage' of the UHV; in particular trying to build a picture of the families who for some reason do not receive a UHV. For each sudden and unexpected infant death the Committee now routinely requests the infant's Universal Home Visiting notes. In 2012 a review of these notes will be undertaken and feedback will be provided to CYWHS about the findings from this review. In the interim, the Committee wrote to CYWHS in 2010–11 and acknowledged several instances of good practice associated with the delivery of this service. The Committee noted the 'persistence, thoughtfulness and professionalism' of the universal home visitor and the high standard of clinical note-taking in these instances.

2.3 Better Outcomes for Children

The Committee has held a series of meetings with Families SA about the systemic issues it has repeatedly identified in the reviews it has conducted.

2.3.1 Assessment and Case Management

The focus of discussions with Families SA has been about the development of workers' confidence and competence and how this can be achieved through recruitment, selection, training, support and supervision.

The Committee considers it crucial for Families SA to address these issues enabling workers to:

- read the cumulative history concerning a family or young person before making decisions about them,
- undertake appropriate and comprehensive assessments that balance professional judgment and the use of assessment tools such as C3MS,
- understand and use a case management model to guide their work, and
- understand how to assertively manage interagency collaboration.

Families SA has outlined strategies it is planning or putting into place that seek to address these issues. These strategies include a focus on:

- the learning and development framework,
- practice leadership,

22 www.sidsandkids.org/safe-sleeping/ SIDS and Kids *Safe Sleeping Guidelines.* Last accessed July 2011.

23 www.accc.gov.au/content/index.phtml/itemId/988112 ACCC *Baby slings safety alert.* Last accessed July 2011.

- investing in new workers,
- professional practice, and
- Leadership and management.

The need to strengthen and improve case management practices was also recognised. The Committee has a schedule of meetings with Families SA in 2011–12 where the development and progress of these strategies will be discussed.

A *New strategic direction for protecting children in South Australia* has been approved by the South Australian government. Five areas for action have been identified:

- adequately addressing cumulative harm,
- sustained intervention for vulnerable families,
- intergenerational disadvantage,
- building community support, and
- engaging Aboriginal communities.

These action areas reflect many of the issues raised in the Committee's reviews. Information about the systemic changes that will drive this new strategic direction is anticipated.

2.3.2 Adverse Events Committee

Families SA has taken steps to improve the transparency, accountability and outcomes of its internal review processes. The Adverse Events Committee (AEC) has made available to the Committee its *2009–10 Annual Report*, and quarterly reports on 'key themes and issues' arising from its reviews. The Committee has provided feedback to Families SA about its AEC reviews.

2.3.3 Children with Disabilities

Previous reviews have highlighted the challenges faced by parents and service providers, particularly in rural and remote areas, in obtaining and sustaining services to children including Aboriginal children with disabilities. In the 2009–10 Annual Report the Committee identified four key concerns:

- a higher priority for children with disability,
- assessment of relative costs and benefits for children with disabilities,
- care of families and siblings, and
- Relinquishment of children with disabilities into the care of the Minister.

The 2010–11 reviews have raised further issues about service provision to children and young people with disabilities. The remarks of Justice Sulan (16 June 2011) with regard to the homicide of a young person with disabilities by his parent highlight the need to continue to monitor progress in this area:

> *She (the young person's mother) had difficulty obtaining assistance because his disability was non-specific and it was difficult to categorise him.*[24]

Justice Sulan described this parent as… *overwhelmed, hopeless and helpless in relation to the care for her son and concerns for her son's safety in the future.*

After receiving a written response to its recommendations about these issues, the Committee met with Disability SA. The Committee recognises the challenges faced by this service, and further meetings are planned as the Committee seeks to clarify the ways in which Disability SA is addressing these issues.

24 http://www.courts.sa.gov.au/judgments/Judgments2011/0617-SASC-098.htm Last accessed July 2011.

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2.3.4 Pool Safety

The Committee's data shows that the greatest number of drowning deaths between 2005 and 2010 occurred when children were between 1–4 years of age, in the family swimming pool. Although parents and carers may exercise vigilance whilst young children are in the pool, supervision may not extend to the period after they have exited the pool area (see Section 1.7.2). In 2010 the Committee also submitted a review of four drowning deaths to Minister Rankine. The Minister indicated that she would support targeted media campaigns about swimming pool safety issues and would inquire into the progress of changes to regulations concerning the monitoring of compliance with pool fencing. Concerns about monitoring and compliance with legislation were highlighted in a recent survey by Salisbury Council where four out of five pools were considered to be unsafe; gates not latching properly and unfenced pools were common problems.[25]

The Committee is mindful of the work being undertaken by the SA Water Safety Commission and non-government organisation such as the SA Royal Life Saving Association and seeks advice and guidance from these organisations about pool safety issues and the best ways in which to support prevention efforts.

2.4 Better Outcomes for Young People

The Committee's efforts to monitor and promote change to improve outcomes for young people have focused on school-related issues, suicide prevention and transition planning.

2.4.1 Truancy and Record-keeping

In 2009–10 the Committee submitted a review which recommended the Department of Education and Children's Services consider:

- How it monitors and intervenes when children are chronically truant from school.
- Improvements to record-keeping about children and young people by schools and especially the records of school counsellors.
- Better recognition of children with special needs when they transition from primary school to secondary school.

The Committee met with the Department for Education and Children's Services (DECS) prior to making these recommendations and received a written response which outlined the policies and procedures that address these issues. The Committee was aware that the Coroner had raised similar issues following his inquiry into the death of a young person who had long periods of absence from school.[26] The Coroner made recommendations about legislative changes and the prosecution of parents or carers when their children are chronically truant. He also recommended coordinated efforts between DECS and Families SA so that such children do not 'fall through the gaps.'

The Committee is concerned about the role of school counsellors and how their records can be kept in ways that are in the best interests of service delivery for children.

25 *The Advertiser* Salisbury pools backyard death traps 22 February 2011.

26 www.courts.sa.gov.au/courts/coroner/findings/findings_2009/Roberts_Jarrad_Delroy.pdf South Australian Coroner *Finding of Inquest*. Last accessed July 2011.

2.4.2 Suicide Prevention

In 2008, the Committee recommended the development of a State-wide youth suicide prevention strategy and has continued to advocate for such a strategy with SA Health. SA Health has now commenced work on the development of a State-wide suicide prevention strategy. The Committee supports the development of this strategy. It will seek to ensure that the recommendations made about young people and suicide prevention are considered in the development of this strategy, especially about:

- young people in rural and remote areas,
- early intervention through promoting the health and wellbeing of young people, and
- support for community based service after discharge from hospital following a suicide attempt.

The Committee is preparing to undertake a review of all deaths attributed to suicide between 2007 and 2010.

2.4.3 Transition Planning

Transition planning, especially for young people who have been under the Guardianship of the Minister, was again identified in the 2010–11 reviews. This issue remains on the Committee's agenda.

2.5 Better Outcomes for Children Under the Guardianship of the Minister

In response to the recommendations arising from the Committee's 2010–11 review of children under Guardianship of the Minister (see Section 1.7.1), Families SA provided information about the ways in which it is:

- improving child centered case management,
- using a computer-based system to track and record information about children under Guardianship and service provision,
- providing paediatric health assessments when children and young people come into the Minister's care,
- auditing the files of children under Guardianship to ensure high standards of practice, and
- considering and changing its re-unification policies and practices to ensure better outcomes for children under Guardianship.

2.6 Continuing the Contribution to Systemic Change

In 2010–11 the Committee has sought to broaden the scope of its monitoring activities by working constructively with key agencies such as Families SA and SA Health on mutual issues of concern such as:

- services for vulnerable infants,
- strengthening inter-agency collaboration,
- strengthening case management practice,
- monitoring issues in relation to neglect and cumulative harm, and
- developing workers' competence and confidence.

It will continue to seek information from these agencies about the progress of systemic changes in these areas of concern.

The Committee will continue to support and promote prevention activities through strategic links with other agencies and organisations who have interests that relate to the Committee's statutory mandate. These agencies include the Australian and New Zealand Child Death Review and Prevention Group, the State Coroner, SIDS and Kids and Kidsafe SA.

SECTION 3:
COMMITTEE MATTERS 2010–11

S 52N (1) – The Child Death and Serious Injury Review Committee is established.

Children's Protection Act, 1993

SECTION 3: COMMITTEE MATTERS 2010–11

3.1 Legislation and Purpose

The Child Death and Serious Injury Review Committee was established by the *Children's Protection Act, 1993* (the *Act*)[27] in February 2006. It is an initiative arising out of recommendations made in *Our best investment: a State plan to protect the interests of children (Layton, 2003).* An interim committee operated under directions issued by Cabinet from April 2005 until February 2006.

The role of the Committee is to contribute to the prevention of death or serious injury to children in South Australia.

The Committee reviews the circumstances and causes of death or serious injury to children and makes recommendations to Government that may help prevent similar deaths or serious injuries. Recommendations suggest changes in legislation, policies, procedures or practices.

The work of the Committee is funded through the Department for Families and Communities with further contributions from the Department of Health and the Department of Education and Children's Services. From its inception a secretariat located within the Department for Families and Communities has assisted the Committee. Administrative, financial and human resource management is overseen by this department.

3.2 Committee Matters 2010–11

The Committee met 10 times in 2010–11. Each member belongs to one of four 'screening teams (see Diagram 1) and each of these teams met as required, usually in advance of each Committee meeting.

The Committee approved a 2010–11 Business Plan which identified eight key outcome areas:

- Maintain the timely and accurate collection of information about the circumstances and causes of child deaths and serious injuries.
- Continue to screen the circumstances and cause of child deaths of any child in South Australia and identify systemic issues which should be addressed through the review process.
- Continue to undertake in-depth reviews of deaths and serious injuries that identify systemic changes and make recommendations about systemic change that will contribute to the prevention of similar deaths or serious injuries.
- Improve the efficiency and effectiveness of the Committee's monitoring processes.
- Provide reports, in particular an Annual Report, which contributes to government and community knowledge and understanding of the causes of child deaths and serious injuries and the efforts that should be made to prevent or reduce deaths or serious injuries.

27 http://legislation.sa.gov.au/LZ/C/A/CHILDRENS%20PROTECTION%20ACT%201993/CURRENT/1993.93.UN.PDF Children's Protection Act, 1993. Last accessed September 2011.

- Undertake relevant and timely reviews of serious injury and ensure that recommendations arising from these reviews contribute to the prevention of serious injury to children in South Australia.
- Support and contribute to prevention-based activities concerning child deaths and serious injuries.
- Provide a high quality and accountable interface between the Committee, the Minister and the Department for Families and Communities.

In line with the 2010–11 Business Plan, key outcomes of note included:

- strengthened governance,
- improved procedures, knowledge and skills,
- supporting partnerships, and
- building the Committee's profile.

3.2.1 Governance

The Department for Premier and Cabinet Circular PC022 (2008) *Improving the Effectiveness of Government Boards and Committees* identified regular review as best practice in the operation of boards and committees. After five years of operation an independent reviewer undertook a review of the effectiveness of the Committee's processes. The reviewer noted that:

- The Committee is fulfilling its statutory obligations. External stakeholders, including the State Coroner and the Registrar of Births, Deaths and Marriages, consider the Committee's work to be valuable, very effective and making optimum use of its resources.

'External agencies all agreed the Committee… has a strong culture of empathy, understanding and compassion.'

- Areas to build on in the future include the Committee's work in the area of serious injury, improvements to processes for making and monitoring recommendations and improvement to the induction of new Committee members into Committee processes and the nature of its work.

It was strongly recommended by the reviewer that the Committee undertake a strategic planning process to address these issues.

3.2.2 Improving Procedures, Knowledge and Skills

The Committee undertook a strategic planning session in December 2010. As a result the Committee:

- Decided that the circumstances of deaths were the starting point for analysis of serious injury. As a first step a checklist of social and other circumstances frequently identified in child deaths has been developed. This checklist will be used to target areas where the review of serious injury can be incorporated into its work.
- Reviewed national and international guidelines for making and monitoring recommendations and has used these to refine its process for reflecting on the purpose and outcomes of recommendations prior to their development.

SECTION 3: COMMITTEE MATTERS 2010–11

The Secretariat has liaised with the State Coroner and the Office of Births Deaths and Marriages to identify unregistered deaths of children in SA and has facilitated the exchange of information about these deaths between these two agencies.

The Committee has sought to improve understanding of its in-depth review process through documentation of the key factors involved in a review. This has resulted in the successful engagement of an external reviewer to undertake the preparation of information in relation to a current review.

The secretariat has worked to ensure more accurate and efficient analysis and reporting through the use of SPSS (Statistical Packages for the Social Sciences) as the most appropriate tool to analyse the increasing amount of information in the Committee's database.

A Project Management model has been used to manage the development, implementation and outcomes of several key projects including the review of the Committee's effectiveness, preparation of an external case review and the impending review of six cases of serious injury referred by the previous Minister.

Committee members and secretariat staff have attended various workshops and seminars including a master class about the in-depth review of child deaths hosted by the NSW Ombudsman. The facilitator was Dr Marian Brandon, Reader in Social Work at the University of East Anglia who is tasked with the critical scrutiny of child death review processes in the United Kingdom.

3.2.3 Supporting Partnerships

The independent review of Committee processes also identified that the Committee should consider how to improve the ways in which it monitors recommendations. The Committee has held regular and productive meetings with Families SA, and meetings with Disability SA and Child Youth and Women's Health Service to discuss the recommendations it has made or has planned in order to understand the best ways to support systemic change in these agencies. Further meetings are scheduled in 2011–12.

The Chair and Committee members met with the Minister for Families and Communities and her staff on several occasions to discuss issues arising from the Committee's work and to seek the Minister's views about these issues.

Committee members and secretariat staff met with representatives from the NSW Commission for Children and Young People and the Director and staff from SA Health's Epidemiology Branch to discuss the issue of serious injury and the NSW Commission's plans for expanding its role in this area.

The Chair wrote to the *Medical Journal of Australia* about the information available in South Australia concerning the circumstances of child drownings. The Chair's letter highlighted the quality of information collected by SA police. This letter has been accepted for publication.

The Chair met with the State Coroner to discuss issues of mutual interest. Following the appointment of a Senior Research Officer (Domestic Violence) within the Coroner's office, the Coroner and the Committee have agreed to a mutual exchange of information about the deaths of children where domestic violence has been identified in the circumstances of the death.

3.2.4 Building the Committee's Profile

Children and Public Health was the focus of the 2010 Public Health Bulletin SA Volume 7 (3). The Committee's invited contribution *The Child Death and Serious Injury Review Committee: an opportunity for prevention* was written by the Committee's Senior Project, Rosemary Byron-Scott, on behalf of the Committee.[28]

Secretariat staff contributed to an international study about child death review being undertaken by Dr Sharon Vincent Research Fellow at the University of Edinburgh's Centre for Learning in Child Protection.

The Chair of the Committee and the Chair of the Council for the Care of Children met with Professor Marianne Berry, the recently appointed Director of the Australian Centre for Child Protection to identify areas of mutual interest and potential collaboration.

Secretariat staff presented information about the Committee's work at the Second Australasian Conference on Child Death Inquiries and Reviews (Brisbane).

28 www.health.sa.gov.au/pehs/publications/10039.3_phb_dec2010_web.pdf Byron-Scott, R (2010) The Child Death and Serious Injury Review Committee: an opportunity for prevention. *Public Health Bulletin SA 7 (3)* p 11–14. Last accessed July 2011.

SECTION 4:
METHODOLOGY

SECTION 4: METHODOLOGY

4.1 Deaths Included in the Annual Report

It will be noted that the report about the Committee's activities (Section 3) and the in-depth review of deaths (Section 1.7) is inclusive of work between 1 July 2010 – 30 June 2011 whereas in Sections 1.1 – 1.6 the numbers of deaths referred to are based on the calendar year: 1 January 2010 – 31 December 2010. This difference in reporting periods reflects the unavoidable time delays between a death and the availability of relevant information such as post mortem results, major crash reports etc. By reporting on deaths in the previous calendar year the amount of missing data is minimised, resulting in a more comprehensive and informative account of deaths in a twelve month period. Reporting by calendar year is also consistent with the practices of the Australian Bureau of Statistics (ABS) and other child death review teams.

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.

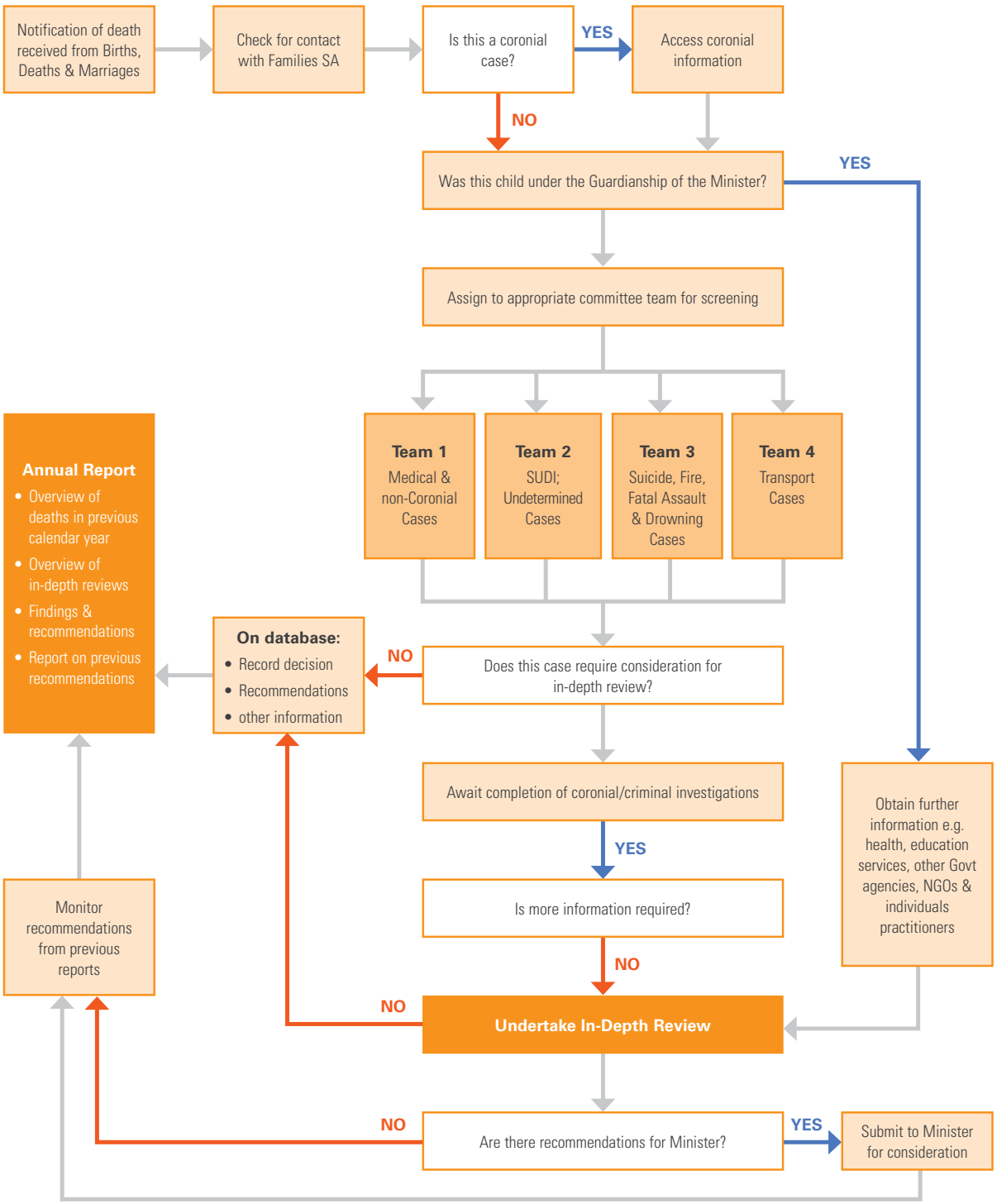
The number of deaths the Committee reports on each year is based on information received from the Office of Births, Deaths and Marriages. The Committee reports on the number of deaths each year that have been registered with the Office of Births, Deaths and Marriages. This figure includes infants whose deaths were registered with the Office notwithstanding that the length of gestation was <20 weeks and/or birth weight was <400grams.

4.2 Access to Information and the Process for Screening and Review of Deaths

This section provides details about the Committee's processes for obtaining, analysing and storing information; for screening deaths, and for classifying causes of death.

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

Diagram 1: Committee's Screening and Reviewing Process



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4.2.1 The Office of Births, Deaths and Marriages

The Committee currently has a protocol with the Office of Births, Deaths and Marriages for the release of information about the deaths of children and young people in South Australia. This information is provided to the Committee on a monthly basis.

4.2.2 The Office of the State Coroner

Under an arrangement with the Coroner, information is released to the Committee for each reportable death[29] of a child aged younger than 18 years of age.

4.2.3 Release of Information from Government Agencies

The Committee has protocols regarding release of information with the Department for Families and Communities, which includes Families SA, the Department of Health and the Department of Education and Children's Services.

4.3 In-Depth Review Process

At any one time, deaths screened by the Committee will be assigned one of the following criteria:

- ***Not eligible for review*** – a case will be considered ineligible for review under s52S (2) of the *Act* – if the child was not normally resident in the State at the time of death or serious injury or the incident resulting in death or serious injury did not occur in the State; or
- ***Not for review*** – a case may not require in-depth review if the screening of information available at the time indicates that there are no systemic issues arising from the death that the Committee considers need to be addressed. These cases are assigned a category of death e.g. illness or disease, SUDI, transport, fatal assault etc and the details are kept on the Committee's database until required for inclusion in the relevant Annual Report; or
- ***Pending further information*** – in some cases the Committee requests further information prior to making a decision regarding in-depth review. The majority of cases awaiting further information are deaths attributed to illness or disease or health-system-related adverse events. The medical screening team maintains a high level of scrutiny regarding the circumstances of the deaths of children from these causes, especially where children have received health system services, have had complex conditions requiring a high level of care, or where there has been an interface between medical, welfare and other systems; or
- ***Pending completion of investigations*** – in accordance with Section 52S (4) of the *Act*, the Committee must ensure that its review processes will not compromise criminal or coronial investigations before it undertakes a review. Criminal investigations are considered to be concluded once any person involved in the death or serious injury of the child has been sentenced, or once South Australia Police have determined they have no further interest in the matter. Investigations conducted by the Coroner are considered to have ended when the Coroner has made a finding into the cause of death or a coronial inquiry has been completed; or
- ***Awaiting assignment*** – in any reporting year, there are also cases ready for review but awaiting assignment of a 'review team' to undertake the review.

29 www.legislation.sa.gov.au/LZ/C/A/CORONERS%20ACT%202003/CURRENT/2003.33.UN.PDF Deaths that are reportable to the Coroner are those indicated in Part 1 of the Coroner's Act 2003.

The number of cases pending investigation or review gradually decrease in any year, as information is obtained, cases are finalised in the criminal and coronial systems, and the Committee makes a determination about further review and undertakes this review.

4.4 Reporting Requirements

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

The Committee submits a report to the Minister for Families and Communities at the conclusion of each in-depth review. This report provides details of the case that has been reviewed. It includes a synopsis of all relevant documents and records and the Committee's comments on the information contained in these documents. The report contains the Committee's recommendations about systemic issues that may contribute to the prevention of similar deaths or serious injuries.

4.5 The Committee's Classification of Cause of Death

In Section 1 *Child Deaths South Australia 2005–10* the Committee's classification of the cause of death has been used. In many cases, the Committee has multiple sources of information available about children (including health, welfare and education records) and is not limited to the causes of death recorded in post-mortem reports or death certificates. Accordingly, the Committee's classification for a particular death may vary from the ICD-10 classification (See Section 4.12 *ICD-10 Coding of Cause of Deaths* for an explanation of this coding). For example, deaths the Committee has attributed to suicide may have been coded using ICD-10 coding as intentional self-harm (X60-X84), an event of undetermined intent (Y10-Y34) or be included amongst deaths attributed to other accidental threats to breathing (W75-W84). The impact of this group of deaths will be lost with the ICD-10 system of coding.

At the time of classifying a death, the Committee will consider all available information. However in some cases, further information may become available that may give rise to a change in the classification assigned to a particular death or group of deaths. Any changes will be noted as an addendum in the subsequent Annual Report. In addition, the Committee will continue to review its definitional guidelines in the light of available information.

The guidelines the Committee uses to classify deaths to external causes are described below.

4.5.1 Transport deaths

Transport deaths include deaths arising from incidents involving a device used for, or designed to be used for moving people or goods from one place to another. These incidents may involve pedestrians and include railway or water transport. Incidents may occur on public highways or places other than a public highway.

4.5.2 Accidents

Accidents exclude deaths attributed to transport incidents, fires or drowning. Also referred to as deaths from unintentional injuries, accidents most commonly include suffocation, strangulation and choking, falls and poisoning.

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4.5.3 Suicide

In any report about suicide, the issue of definition is crucial. Most studies about suicide rates 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 under the law that the person intended to kill him or herself. The Committee classifies a death as suicide where the intent of the child or young person was clearly established. It also attributes a death to suicide if careful examination of coronial, police, health and education records indicated a probable intention to die.

4.5.4 Fatal assault

The Committee characterises a fatal assault as 'the death of a child from acts of violence perpetrated upon him or her by another person' (Lawrence, 2004; p 842).

4.5.5 Fatal neglect

The Committee defines fatal neglect as a death resulting from an act of omission by the child's carer(s) including:

- failure to provide for the child's basic needs,
- abandonment,
- inadequate supervision, and
- refusal or delay in provision of medical care.

This definition can account for both chronic neglect and single incidents of neglect, or a combination of both (NSW Child Death Review Team 2003; p 15). The Committee is mindful of the evidence which indicates that the changing nature of child development will strongly influence the ways in which neglect can have an impact on a child (Lawrence & Irvine, 2004).

4.5.6 Health-system-related Adverse Events

These deaths have been classified as such by the Committee based on written records which may not necessarily be complete. The Committee places a death in this category based on consideration of preventable aspects in the circumstances of the death and a focus on future prevention strategies rather than an investigation of the cause of death.

4.5.7 Sudden Unexpected Death of Infants (SUDI) and Sudden Infant Death Syndrome (SIDS)

Sudden unexpected death in infancy (SUDI) has been described as an 'umbrella' term that is used for all sudden unexpected deaths of infants younger than one year of age.

The definition of 'Sudden Unexpected Death in Infancy'

In December 2007 the Australian and New Zealand national meeting of child death review teams and committees agreed to work towards a common reporting framework that was based on the definition of SUDI proposed by Fleming et al. (2000). The agreed SUDI definition is infants from birth to 365 completed days of life whose deaths:

Criterion 1	Were unexpected and unexplained at autopsy;
Criterion 2	Occurred in the course of an acute illness that was not recognised by carers and/or by health professionals as potentially life-threatening;
Criterion 3	Arose from a pre-existing condition that had not been previously recognised by health professionals; or
Criterion 4	Resulted from any form of accident, trauma or poisoning.

The definition of Sudden Infant Death Syndrome (SIDS)

The criteria used to determine a death attributed to SIDS continues to be the San Diego definition proposed by Krous et al. (2004, see Table 19).

In this report, the sudden unexpected deaths of infants younger than one year will be reported in the following way:

- Criterion 1 deaths are recorded in Section 1.4 *Deaths due to SIDS and Undetermined Causes*.
- Criteria 2 and 3 deaths are noted in Section 1.3.2 *Death from Illness or Disease of Infants Younger than One Year*.
- Criterion 4 deaths are recorded in Section 1.5 *Deaths due to External Causes*. These deaths may have occurred as the result of various external causes including transport crashes, drowning and fatal assault, however the reader who is interested in identifying deaths that share common risk factors for unsafe sleeping environments should refer to Section 1.5.3 *Accidents*, where deaths from accidental suffocation and asphyxiation are considered.

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Table 19: 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. 2000

4.6 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 Aboriginal status, this indicator will be used.

4.7 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.

4.8 ARIA+ Index of Remoteness and Accessibility

ARIA stands for Accessibility/Remoteness Index of Australia. The ARIA methodology was developed by the Australian Government Department of Health and Aged Care in 1977. Minor changes have been made to this original methodology, resulting in the ARIA+ index of remoteness. This Index is a distance-based measure of remoteness (AIHW, 2004).[30] 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'.

4.9 SEIFA Index of Relative Socio-economic Disadvantage

The SEIFA (Socio-Economic Indexes for Areas) Index of Relative Socio-economic Disadvantage (IRSD)[31] draws on a variety of personal and household characteristics (available from the 2006 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 comprise 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 IRSD scores are divided into five quintiles, with the least disadvantaged populations represented in quintile 1 and the most disadvantaged in quintile 5.

4.10 Storage and Analysis of Information

Information about the circumstances and causes of child deaths in South Australia are stored in 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.

4.11 Death Rates

Death rates have been calculated using ABS population projections (ABS, 2010).

30 http://aihw.gov.au/publication-detail/?id=6442467589 AIHW (2004) *Rural, regional and remote health: a guide to remoteness classifications.* AIHW Cat no PHE 53, Canberra: AIHW. Last accessed October 2011.

31 www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001 ABS *SEIFA Indexes.* Last accessed October 2011.

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Children who died in South Australia but whose usual residence was outside of the State are included in all calculations except for the total number of deaths per year where only those children resident in the State at the time of death are included.

The death rates for Aboriginal children were calculated using the Estimated Resident population of Aboriginal children aged younger than 18 years for 2006 (12 212 Aboriginal children). This figure is based on the 2006 Census and has been adjusted by the Australian Bureau of Statistics to take into account the under reporting of Indigenous status.[32]

The Infant Mortality Rate (IMR) is calculated according to the deaths of children younger than one year old per 1000 livebirths in the same year. For the purpose of comparison in the tables in this report, the IMR is represented as the deaths of children younger than one year old per 100 000 live births in that year. The South Australian Maternal, Perinatal and Infant Mortality Committee provided data about live births. In 2010, there were 19 882 livebirths in South Australia.

The Poisson distribution was used to investigate whether there were trends in the number of deaths due to various causes. The Poisson distribution describes the occurrence of rare events. A p-value of less than 0.05 denoted a significant increasing or decreasing trend.

4.12 ICD-10 Coding for Cause of Death

Deaths have also been coded using the World Health Organization'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 has 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.[33]

ICD-10 coding of deaths has been undertaken by the National Centre for Health Information Research and Training in Brisbane under a contractual arrangement and with the agreement of the Minister for Families and Communities, the Registrar, and the Coroner.

ICD-10 coding of causes of death for the years 2005–10 are reported in Section 4.13 *Deaths of Children by ICD-10 Chapter Description*.

4.13 Deaths of Children by ICD-10 Chapter Description

Table 20 details the ICD –10 causes of death from 2005–10. The totals for each cause and year represent the current information available from the CDSIRC database. Small changes to numbers for each cause and year occur from year to year. Coding of deaths may change as further information becomes available, for example from coronial inquests or findings that vary from the cause of death attributed at post mortem. The Committee bases its annual totals on the child's date of death. Occasionally, these figures will vary. For example in 2010 the Coroner held an inquiry to determine whether the Coroner's Court had jurisdiction to conduct an Inquest into the death of an infant. This event occurred in 2007. The Coroner has determined that this infant was born alive and will hold a further inquest to determine the cause of death.[34] The death of this infant has been recorded in the total of deaths for 2007, but with no cause of death yet assigned.

32 Advice received from Public Health Information and Development Unit, University of Adelaide, September 2010.

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

34 www.courts.sa.gov.au/courts/coroner/findings/findings_2010/Spencer-Koch_Tate.pdf South Australian Coroner *Ruling of Coroner*. Last accessed October 2011.

*Table 20: Deaths of children by ICD –10 chapter description of cause of death, South Australia 2005–10**

ICD-10 CHAPTER DESCRIPTION	Number of deaths per year						Total No.	Rate[1] per 100 000
	2005	2006	2007	2008	2009	2010		
Illness or Disease (Natural Causes)								
Certain infections and parasitic diseases (A00-B99)	3	1	1	1	5	3	14	0.7
Neoplasms (C00-D48)	8	10	7	12	7	3	47	2.2
Endocrine, nutritional and metabolic diseases (E00-E90)	5	1	2	3	5	2	18	0.9
Diseases of the nervous system (G00-G99)	5	11	8	4	11	11	50	2.4
Diseases of the eye and adnexa (H00-H59)	0	1	0	0	0	0	1	0.05
Diseases of the circulatory system (I00-I99)	2	2	3	1	3	3	14	0.7
Diseases of the respiratory system (J00-J99)	3	2	0	3	2	6	16	0.8
Diseases of the digestive system (K00-K93)	1	1	1	0	0	0	3	0.1
Diseases of the musculoskeletal system and connective tissue (M00-M99)	2	0	0	1	1	0	4	0.2
Certain conditions originating in the perinatal period (P00-P96)	44	23	41	34	31	36	209	9.9
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	20	25	19	27	26	15	132	6.2
Illness or Disease	**93**	**77**	**82**	**86**	**91**	**79**	**508**	**24.0**
SIDS and Undetermined Causes								
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	**6**	**9**	**11**	**7**	**11**	**13**	**57**	**2.7**
External Causes								
Transport-related (V01-V99)	17	11	18	11	12	12	81	3.8
Falls (W00-W19)	0	1	1	1	0	1	4	0.2
Exposure to inanimate mechanical forces (W20-W49)	1	1	3	1	1	0	7	0.3
Accidental drowning and submersion (W65-W74)	2	4	2	2	3	2	15	0.7
Other accidental threats to breathing (W75-W84)	6	7	3	3	1	3	23	1.1
Exposure to smoke fire and flames (X00-X09)	2	0	0	0	0	1	3	0.1
Accidental poisoning by exposure to noxious substance (X40-X49)	0	1	1	2	1	0	5	0.2
Accidental exposure to other unspecified factors (X58-X59)	0	0	0	0	1	0	1	0.05
Intentional self harm (X60-X84)	1	2	0	2	4	4	13	0.6
Assault (X85-Y09)	3	6	0	4	4	1	18	0.9
Event of undetermined intent (Y10-Y34)	4	1	1	1	0	1	8	0.4
Medical devices associated with adverse incidents (Y70-Y82)	0	0	1	0	0	0	1	0.05
External Causes	**36**	**34**	**30**	**27**	**27**	**25**	**179**	**8.3**
Other								
Cause not yet known	0	0	1	0	0	2	3	
ALL DEATHS – TOTAL	**135**	**120**	**124**	**120**	**129**	**119**	**747**	**35.3**

1 Rates have been calculated using ABS population estimates for children between 0–17 years. See Section 4.11.

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

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Between 1 January 2005 and 31 December 2010 747 children died. Approximately two-thirds of these deaths have been attributed to illness or disease, predominantly conditions occurring in the time between late pregnancy and the first weeks after birth. One quarter of deaths were attributed to external causes, predominantly transport related causes.

4.13.1 Causes of Death by Age

This section provides information about the causes of child deaths by age grouping.

Children younger than 28 days

In the period 2005–10, 38.0% of deaths were of children younger than 28 days old (284 deaths). There were almost equal numbers of males and females. Seventeen infants were Aboriginal.

The majority of deaths were from illness and disease. One hundred and seventy-nine infants died from various conditions originating in the perinatal period – the time between late pregnancy and the weeks after birth. Eighty-two infants died from conditions associated with congenital or chromosomal abnormalities such as Down's syndrome.

Children aged 28 days – 1 year

Children aged 28 days to one year accounted for 21.4% of the deaths in the period 2005–10 (160 deaths). The male to female ratio was 1.3: 1. Twenty-two infants were Aboriginal.

The deaths of 23 infants were related to congenital or chromosomal abnormalities and 24 deaths were associated with conditions originating in the perinatal period. Thirteen infants died from diseases of the nervous system and 28 from external causes. Forty-five infants died from undetermined causes.

Children aged 1–4 years

In 2005–10, 12.6% of children who died were between one and four years of age (94 deaths). The male to female ratio was 1.7:1. Six children were Aboriginal.

Forty-six children died from illness or disease with 13 deaths attributed to cancer, 11 to diseases of the nervous system and 10 to birth defects.

Forty-three children died from external causes including eight deaths attributed to some form of fatal assault and nine from accidental causes including drowning.

Children aged 5–9 years

Forty-five children (6.0%) who died in the period 2005–10 were aged between five and nine years. There were approximately equal numbers of males and females. Three children were Aboriginal. Twenty-eight children died from illness or disease and 15 from external causes.

Children aged 10–14 years

Fifty-two deaths in the period 2005–10 (7.0%) occurred in children aged between ten and 14 years. Seven children were Aboriginal. Deaths from illness or disease included nervous system diseases such as epilepsy and cancer. Twenty-two deaths were attributed to external causes such as transport crashes and fatal assault.

Children aged 15–17 years

One hundred and twelve deaths (15.0%) in the period 2005–10, were of children aged between 15–17 years, with the majority of deaths due to external causes. Forty-six young people died in transport crashes with a male to female ratio of 2.3:1. Fifteen children were Aboriginal. The deaths of 13 young people were attributed to suicide. The causes of the 33 deaths attributed to illness of disease included cancer and respiratory system disease such as asthma.

Table 21: Deaths of children, cause of death and sex from 0–4 years, South Australia 2005–10[1]*

Children <28 Days	Female	Male	Total
Certain conditions originating in the perinatal period	72	107	179
Congenital malformations, deformations and chromosomal abnormalities	44	38	82
Other Illness or Disease	3	5	8
Pending	0	1	1
Illness or disease	**119**	**151**	**270**
Sids & undetermined causes	**3**	**4**	**7**
External causes	**4**	**3**	**7**
TOTAL	**126**	**158**	**284**

Children 28 Days – 1 Year	Female	Male	Total
Congenital malformations, deformations and chromosomal abnormalities	14	9	23
Certain conditions originating in the perinatal period	7	17	24
Diseases of the nervous system	6	7	13
Certain Infectious and parasitic diseases	2	7	9
Diseases of the circulatory system	3	3	6
Diseases of the respiratory system	2	3	5
Other Illness or Disease or unknown	3	4	7
Illness or disease	**37**	**50**	**87**
Sids & undetermined causes	**19**	**26**	**45**
Transport	3	2	5
Suffocation / Strangling	6	6	12
Fatal Assault	1	3	4
Other external causes	3	4	7
External causes	**13**	**15**	**28**
TOTAL	**69**	**91**	**160**

Children 1–4 Years	Female	Male	Total
Cancer	6	7	13
Endocine Nutritional and metabolic diseases	2	4	6
Diseases of the nervous system	3	8	11
Congenital malformations, deformations and chromosomal abnormalities	4	6	10
Other Illness or Disease	1	5	6
Illness or disease	**16**	**30**	**46**
Undetermined causes	**3**	**2**	**5**
Transport	2	7	9
Drowning	5	4	9
Suffocation / Strangling	0	5	5
Fatal Assault	1	7	8
Other External and Unascertained Causes	8	4	12
External causes	**16**	**27**	**43**
TOTAL	**35**	**59**	**94**

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

1 Based on ICD.10 codes

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Table 22: Deaths of children, cause of death and sex from 5–17 years, South Australia 2005–10[1]*

Children 5–9 Years	Female	Male	Total
Cancer	7	4	11
Diseases of the nervous system	4	2	6
Certain conditions originating in the perinatal period	3	2	5
Other Illness or Disease	3	3	6
Illness or disease	**17**	**11**	**28**
Undetermined causes	**1**	**1**	**2**
Transport	4	4	8
Other External and Unascertained Causes	2	5	7
External causes	**6**	**9**	**15**
TOTAL	**24**	**21**	**45**

Children 10–14 Years	Female	Male	Total
Cancer	4	7	11
Diseases of the nervous system	5	2	7
Other Illness or Disease	5	7	12
Illness or disease	**14**	**16**	**30**
Transport	7	5	12
Other External and Unascertained Causes	6	4	10
External causes	**13**	**9**	**22**
TOTAL	**27**	**25**	**52**

Children 15–17 Years	Female	Male	Total
Cancer	4	7	11
Diseases of the nervous system	2	4	6
Certain conditions originating in the perinatal period	2	3	5
Other Illness or Disease	3	8	11
Illness or disease	**11**	**22**	**33**
Undetermined causes	**0**	**1**	**1**
Transport	15	31	46
Suicide	4	9	13
Events of uncertain intent	2	3	5
Accidental Poisoning	0	3	3
Other External and Unascertained Causes	2	9	11
External causes	**23**	**55**	**78**
TOTAL	**34**	**78**	**112**

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

1 Based on ICD.10 codes

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