Northern Territory
Child Deaths Review and Prevention Committee
Annual Report 2012-2013
Northern Territory Child Deaths Review and Prevention Committee

The NT Child Deaths Review and Prevention Committee respects the beliefs of Aboriginal and Torres Strait Islander people and advises there is information in this report regarding deceased Aboriginal and Torres Strait Islander children.

Office of the Children’s Commissioner, Northern Territory
PO Box 40598
Casuarina NT 0811
Telephone 08 8999 6047
Facsimile 08 8999 6072
E-mail cdrpc@nt.gov.au

www.childrenscommissioner.nt.gov.au


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The Honourable John Elferink MLA
Minister for Children and Families
Parliament House
Mitchell Street
DARWIN NT 0801

Dear Minister

In accordance with Part 3.3, section 213 of the Care and Protection of Children Act 2007, I am pleased to provide you with the Annual Report of the Northern Territory Child Deaths Review and Prevention Committee for 2012 - 2013.

The Report contains information on the activities of the Committee throughout this reporting period as well as information on infant and child deaths in the NT for the 2012 calendar year and for the five years, 2008 to 2012. Some externally sourced data on child deaths is also cited to provide historical context.

I would like to draw your attention to the high rate of preventable child deaths that are prevalent in the NT which call for targeted policy attention and interventions.

Yours sincerely,

Dr Howard Bath
Convenor
NT Child Deaths Review and Prevention Committee
31 October 2013
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Child Deaths Review and Prevention Committee Members

Members as at 30 June 2013

Dr Howard Bath
Convenor, NT Child Deaths Review and Prevention Committee
Children’s Commissioner, NT

Ms Kathryn Ganley
Deputy Convenor, NT Child Deaths Review and Prevention Committee
Deputy Coroner, Office of the NT Coroner

Ms Vicki Baylis
Executive Director, School Education and Early Childhood Services,
Department of Education and Training, NT

Commander Richard Bryson
Crime Command, NT Police Department
Darwin, NT

Ms Priscilla Collins
Director, North Australian Aboriginal Justice Agency (NAAJA)
Darwin, NT

Ms Josie Crawshaw
Chief Executive, Stronger Aboriginal Families Together (SAFE,T)
Darwin, NT

Dr Steven Guthridge
Director, Health Gains Planning,
Department of Health, NT

Dr Charles Kilburn
Co-Director, Division of Maternal and Child Health
Medical Director Special Care Nursery,
Royal Darwin Hospital, Department of Health, NT

Professor Victor Nossar
Program Leader, Child and Youth Health, Health Development,
Department of Health, NT

Associate Professor Robert Parker
Director of Psychiatry, Top End Mental Services,
Department of Health, NT

Dr Barbara Paterson
Chief Health Officer and Executive Director for Health Protection,
Department of Health, NT
Dr Geoff Stewart  
Senior Remote Medical Practitioner,  
Maningrida Community Health Service, NT.  
Department of Health, NT

Ms Leonie Warburton  
Senior Manager, Quality and Practice Framework  
Office of Children and Families, NT

Dr Jo Wright  
Senior Director, Alcohol and Other Drugs Program, Strategy and Reform  
Department of Health, NT

Advisor to the Committee

Professor Jeremy Oats  
Chair, Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity  
Medical Co-Director Northern Territory Integrated Maternity Services  
Professorial Fellow Department of Obstetrics and Gynaecology, University of Melbourne.

Past members of the Committee (2011 - 2012)

Commander Peter Bravos  
NT Police Department

Mr Alan Green  
Department of Education, NT

Committee expertise

The Act requires that each member of the Committee has qualifications or experience relating to the functions of the Committee. In accordance with this requirement, membership of the Committee reflects a multi-disciplinary approach to promoting the well-being of children in the NT. The Committee comprised 14 representatives from government and independent agencies with expertise in the areas of health care (including hospital and community based clinical care), child development and child protection, research, education, public health and police investigations.

Committee secretariat

Mr Gokula Chandran, Research Officer.
Glossary of Terms

ABS          Australian Bureau of Statistics
the Act      Care and Protection of Children Act 2007
AIFS         Australian Institute of Family Studies
AIHW         Australian Institute of Health and Welfare
ANZCDRPG     Australian and New Zealand Child Death Review and Prevention Group
BDM          Northern Territory Office of the Registrar of Births, Deaths and Marriages
CDR          Child Deaths Register
CDRPC        Child Deaths Review and Prevention Committee
COD          Cause of Death
Committee    Child Deaths Review and Prevention Committee
Coroner      Office of the Northern Territory Coroner
OCF          Department of Children and Families, NT
DAG & J      Department of Attorney General and Justice, NT
ICD-10 AM    International Statistical Classification of Disease and Related Health Problems, Tenth Revision – Australian Modified
NCHIRT       National Centre for Health Information Research and Training
NCIS         National Coronal Information System
NSW          New South Wales
NT           Northern Territory
Qld          Queensland
SUDI         Sudden Unexpected Death in Infancy
SIDS         Sudden Infant Death Syndrome
UCOD         Underlying Cause of Death
WHO          World Health Organisation
Definitions

**Aboriginal**

The following definition is provided for the term ‘Aboriginal’ in section 13 of the *Care and Protection of Children Act*:

Aboriginal means: (a) a descendant of the Aboriginal peoples of Australia; or (b) a descendant of the indigenous inhabitants of the Torres Strait Islands.

Throughout this Report the term *Aboriginal* will be used for people of either *Aboriginal* or *Torres Strait Islander* descent except where specific reference is being made to publications that use other terminology, for example, the ABS which often uses the term *Indigenous*.

**Cause of Death**

All those diseases, morbid conditions, or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced such injuries.¹

**Child**

Part 1.4, section 13 of the Act defines ‘child’ as (a) a person aged seventeen years and under; or (b) a person apparently less than 18 years of age if age cannot be proved.

**Child Death**

Part 3.3, section 208 of the Act defines ‘child death’ as (a) the death of a child who usually resided in the Territory (whether the death occurred in the Territory or not); or (b) a stillbirth as defined in the *Births, Deaths and Marriages Registration Act* that occurred in the Territory.

**Greater Darwin**

Greater Darwin incorporates the City of Darwin, the City of Palmerston and the Litchfield Shire.

**Congenital malformations**

Congenital malformations, including deformities and chromosomal abnormalities, are physical and mental conditions present at birth that are either hereditary or caused by environmental factors.

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Infancy

The infancy period extends from birth to 12 months of age. An infant death is the death of a live born child under 1 year of age. ²

Neonatal

The neonatal period extends from birth to 28 days of age. A neonatal death is the death of a live born baby within 28 days of birth.³

Perinatal

The perinatal period extends from 20 weeks gestation to 28 days following birth. A perinatal death is a fetal death (of at least 20 weeks' gestation or at least 400 grams birthweight.⁴) or a neonatal death (of a live born within 28 days from birth).

Stillbirth (Fetal Death)

In accordance with section 4 of the Births Deaths and Marriages Registration Act, a stillbirth means “the birth of a still-born child”, which is defined as “a child of at least 20 weeks gestation or with a body mass of at least 400 grams at birth that exhibits no sign of respiration or heartbeat, or other sign of life, after birth.”⁵

Sudden Unexpected Death in Infancy (SUDI)

SUDI (also described as Sudden Unexpected Infant Death, SUID), is a term used for all unexpected infant deaths, whether the explanation is immediate, determinable after a thorough examination, or remains unknown. Traditionally all unexplained SUDI deaths had been labelled as Sudden Infant Death Syndrome, SIDS.

Underlying Cause of Death

(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 (WHO).⁶


⁴ ibid

⁵ ibid

⁶ op cit
Explanatory note

During the 2012-13 year, the NT Government agency responsible for child protection had several changes to its name. As the Office of Children and Families (OCF) was the name as of 30 June 2013, it is the one used in this report.
Foreword

This is the fifth Annual Report of the Northern Territory (NT) Child Deaths Review and Prevention Committee. The Report is based on information provided to the Committee on the 42 deaths of children who were usually resident in the NT and 21 stillbirths that occurred during the calendar year 2012. The report also provides summary information on 241 child and infant deaths that occurred in the five-year period between 2008 and 2012.

The death of any child is a tragedy and the members of the Committee extend their sincere condolences to the family members, friends and communities of the children and young people cited in this report. In highlighting the circumstances relating to these deaths and by conducting research on the patterns and trends, the Committee hopes to inform policy and program initiatives aimed at reducing the number of deaths, thus sparing others the grief that attends such tragic events.

In addition to providing an analysis of child and infant deaths that occurred during 2012 and for the preceding four years, this report provides a brief background of research by the Committee into sudden unexpected deaths in infancy (SUDI) that are sleep-related.

On behalf of the Committee I would like to thank the agencies and individuals across the Northern Territory that provided information for the database as well as those who contributed to the development of this report. In particular, I would like to thank the Bureau of Births, Deaths and Marriages, the Department of Health, NT, the Office of the Northern Territory Coroner and Ms Sue Walker of the National Centre for Health Information Research and Training.

Dr Howard Bath
Convenor
NT Child Deaths Review and Prevention Committee
31 October 2013
Executive Summary

Background and Overview of the Committee Activities

The Committee is established pursuant to Part 3.3 of the Care and Protection of Children Act. The purpose of the child death review process undertaken by the Committee is to assist in the prevention and reduction of child deaths in the NT.

The object of Part 3.3 of the Act is to assist in the prevention and reduction of child deaths through:

(a) maintaining a database on child deaths; and
(b) conducting research about child deaths; and diseases and accidents involving children; and
(c) the development of appropriate policy to deal with such deaths, diseases and accidents

The Committee’s functions are set out in the Act (Appendix 1).

Some of the activities the Committee has undertaken this reporting year include:

- Development of a CDRPC Governance and Business Rules document;
- Ongoing refinement of the Child Deaths Register;
- The strengthening of relationships with key stakeholders particularly BDM, Office of the NT Coroner, NT Police and the ANZCDRPG;
- Preparation of a research study into SUDI deaths that are sleep-related in the NT over the past six years (2006 to 2011).

Issues Relating to Child Deaths data in the NT

Chapter 2 of the Report examines contextual factors and sources of data for the work of the Committee, including data obtained from national bodies such as the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW), which provides data either on child deaths or population statistics.

The primary source of data on child deaths is the BDM which also provides data on stillbirths in the NT. Other sources such as medical records from the Department of Health, NT and documents held by the Office of the NT Coroner provide additional detail relating to individual deaths.

Other relevant issues include the following:

- Child death numbers for the calendar year 2012 are the focus of this report although it is an Annual Report covering the Committee’s activities for the financial year 2012-2013.
- The need to maintain confidentiality of personal information consistent with the Committee’s statutory requirements;
Presentation of data is based on actual date of death rather than the date of registration of the death which is used in some other reports (eg. ABS);

ICD-10 AM codes are used for classifying the cause of death in line with the practice of most other similar committees;

For all child deaths that have involved the NT Coroner, the delivery of coronial findings follows a thorough coronial investigation to determine a cause of death before it is reported to the BDM. Sometimes, it may take several months, even years to complete these investigations, hence the delay in reporting them;

There may be a need to explore causes of death that go beyond those supplied by the BDM and thus other data is sourced from time to time;

The Committee has canvassed other jurisdictions including the BDM registries, for information on interstate deaths of children who are usually resident in the NT.

Counting rules for the involvement of children in the Office of Children and Families’ child protection system are under development. These rules will serve to ensure a consistent methodology is applied to the analysis of child protection involvement over time. Comparison of annual child protection data should nevertheless be interpreted with caution.

**Child Deaths in the NT between 2008 and 2012**

Chapters 3 and 4 of this report provide analyses of deaths of children who are usually resident in the NT, including cause of death. As the population of the Northern Territory is relatively small, the number of child deaths occurring each year is highly variable. The data for 2012 is presented here but it is important to view data aggregated over five years when determining trends or interpreting changes.

**2012 snapshot**

- **42** deaths of children who were usually resident in the NT,
  - **22** (52%) were males, **20** (48%) were females
  - **33** (79%) were Aboriginal; **9** (21%) were non-Aboriginal
  - **32** (76%) were from outside the Greater Darwin area.

- **21** (50%) of the 42 infant deaths; **6** (14%) were 1 to 4 year olds, **3** (7%) were 5 to 9 year olds, **4** (9%) were 10 to 14 year olds and **8** (19%) were 15 to 17 year olds.

- Of the **21** infant deaths, **9** (42.9%) were male and **12** (57.1%) were female; **15** (71.4%) were Aboriginal and **6** (28.5%) were non-Aboriginal.

- Of the **21** infant deaths, **9** were neonatal (under 1 month old) deaths, of which **6** (67%) were Aboriginal and **3** (33%) were non-Aboriginal.

- In addition, **21** stillbirths were registered as having occurred in the NT: **14** (67%) were males and **7** (33%) females; **11** (52%) were Aboriginal and **10** (48%), non-Aboriginal.

- There were therefore **30** Perinatal (21 stillbirths + 9 neonatal) deaths registered in the NT; **18** (60%) were Aboriginal and **12** (40%) were non-Aboriginal.
2008 to 2012 aggregate snapshot

- **241** deaths of children who were usually resident in the NT:
  - **141** (59%) were males and **100** (41%) were female;
  - **173** (72%) were Aboriginal and **68** (28%) were non-Aboriginal
  - **173** (72%) were from outside the urban Greater Darwin area.
- **130** (54%) of these were of infant deaths; **32** (13%) were 1 to 4 years old, **18** (7%) were 5 to 9 years old, **26** (11%) were 10 to 14 years old and **35** (15%) were 15 to 17 years old.
- Of the **130** infant deaths, **71** (55%) were male and **59** (45%) were female; **90** (69%) were Aboriginal and **40** (31%) were non-Aboriginal.
- Of the **130** infant deaths, **81** were neonates, under one month of age of which **53** (65%) were Aboriginal and **28** (35%), non-Aboriginal.
- In addition, **144** stillbirths were registered in the NT: **81** (56%) were males and **62** (43%) females and **1** of unknown gender. **86** (60%) were Aboriginal and **58** (40%) were non-Aboriginal.
- There were therefore **225** perinatal (144 stillbirths + 81 neonatal) deaths, registered in the NT, **139** (62%) were Aboriginal and **86** (38%) were non-Aboriginal.
- The child death rate for the NT was **76.3** deaths per 100,000 children, comprising rates of **127** and **40** per 100,000 for Aboriginal and non-Aboriginal children respectively. This gives a rate ratio of **3.4**; the death rate of Aboriginal children in NT is over 3 times higher than that of non-Aboriginal children. The rate ratio almost doubled to 6.3 when looking specifically at the 15 to 17 years age group.
- The infant death rate for the NT was **656** deaths per 100,000 infants comprising rates of **1,110** and **342** per 100,000 infants for Aboriginal and non-Aboriginals respectively, a rate ratio of **3.2**
- A breakdown of child deaths by usual residence within age group, gender and Aboriginal status shows excess of child deaths outside the Greater Darwin area, in each of these categories. The number of child deaths in the 'rest of NT' (71.8%) is far higher than those in Greater Darwin (28.2%) even though the population is similar in these two areas of the NT.
- Of the **241** child deaths, **63** (26.1%) were known to the Office of Children and Families, a large proportion of whom (85.7%) were Aboriginal; nearly half were between 10 and 17 years old. For over a quarter of these ‘known’ children, **18** (28.6%), harm was found to be substantiated; almost all were Aboriginal.
- Of the **222** child deaths for which information is available the most common cause (69 or 31.1%) was one that originated in the perinatal period, mainly among infants. The next most common cause of death category was the largely preventable, ‘External causes’ or injury related deaths (63 or 28%). Over 60% of these injury deaths occurred equally among 1 to 4 year old and 10 to 17 year old children.
Research

Chapter 5 of this report provides an overview of the Committee’s research activities. The Committee has conducted a preliminary analysis of 38 sleep-related infant deaths from 2006 to 2011. These deaths, which cover all sleep-related, sudden and unexpected deaths in infancy (SUDIs) including Sudden Infant Death Syndrome (SIDS), were examined for their associated risk factors. A full report of this analysis will be available as a separate publication later in 2013 on the NT Children’s Commissioner’s website (www.childrenscommissioner.nt.gov.au)

Summary of Key Findings

There are several major findings from the data on child deaths in the NT that give cause for serious concern:

1. In comparison with published rates for other Australian jurisdictions, child death rates in the NT have been consistently higher for the eight years of records available to this Committee. As yet, there is no clear trend of a change in either annual child or infant death rates over this period.

2. Although 43.6% of all NT children are Aboriginal, they make up over 70% of all NT child deaths. With a death rate of 127 per 100,000 children, Aboriginal children in the NT are about 3.3 times more likely to die than non-Aboriginal children (38 per 100,000).

3. Similarly, although children from outside Greater Darwin make up half the NT population of children, they account for 72% of all child deaths in the NT.

4. The number of stillbirths (21) has been generally declining over the past four years in the NT – despite high numbers in 2009 (42).

5. Analysis of child deaths by contact with the child protection system shows that over a quarter of the deaths were of children known to the Office. A higher proportion of these contacts were Aboriginal children (86%) and children from outside Greater Darwin (73%).

6. Analysis by cause of death showed a higher representation of males, Aboriginal children and children from outside Greater Darwin, in each of the main ICD-10 Chapters. The main causes of death were from ‘Conditions arising in the perinatal period’ and from ‘Symptoms, signs and abnormal findings’ Chapters, all among infants. Amongst the older children, causes of death classed within the ‘External causes, accidents and injuries’ Chapter were by far the common cause, making up more than 60% of all deaths among 10 to 17 year old NT children. These deaths more commonly involved 15 to 17 year olds.

7. The Committee has undertaken a detailed examination of the 38 SUDI deaths between 2006 and 2011 that were sleep-related. The findings and recommendations from this study will be available as a separate publication later in 2013.
CHAPTER ONE

Overview of the NT Child Deaths Review and Prevention Committee

Background

The Care and Protection of Children Act (the Act) was passed by the Northern Territory Legislative Assembly in November 2007 and contains provisions relating to the review and prevention of child deaths. The objective of these provisions is to assist in the reduction of child deaths in the NT, including stillbirths.

One of the most tragic events a family and community can experience is the death of a child, an event which is even more tragic if it could have been prevented. A common response to tragedies of this kind, both nationally and internationally, has been the establishment of committees tasked with the review of all child deaths within their respective jurisdictions. The scope of these committees varies from state to state and country to country, however they all aim to improve our understanding of how and why children die and to initiate action designed to prevent the deaths of other children, where this is possible.

Most Australian states and territories now have processes in place for reviewing the deaths of children although the composition of the review committees differ as does their scope, process and reporting requirements. The NT implemented a child death review process modelled on other Australian jurisdictions. The legislative basis for this Committee is outlined below.

Despite the relatively recent introduction of the child death review process in the NT, existing data suggest that death rates follow in general, a similar pattern to other jurisdictions. However, of particular concern are the health indicators and mortality rates for Aboriginal children, which are considerably higher than those for non-Aboriginal children in the NT and higher than those of Aboriginal children in other jurisdictions. Nevertheless there is some cause for optimism because death rates (including infant mortality rates) for both Aboriginal and non-Aboriginal infants and children in the NT have declined over the past two decades (see Fig. 7 and Appendix 3).

The Committee has the ability to look at infant and child deaths on a case-by-case basis in addition to reviewing trends and patterns on an aggregated basis, by age group, gender, Aboriginal status, by usual residence and by cause of death. These perspectives allow the Committee to interrogate the factors behind the deaths and death rate trends. Through the expertise and experience of its members from different disciplines and occupations, the Committee has the capacity to provide the broader community with answers to the ‘what’, ‘how’ and ‘why’ questions associated with these deaths and to make policy recommendations on how to reduce or prevent such deaths.
**Legislation**

The *Northern Territory Child Deaths Review and Prevention Committee* (CDRPC or the Committee) is an independent statutory body established in accordance with provisions contained in *Part 3.3 of the Care and Protection of Children Act* (the Act) (see Appendix 1).

**Objective**

The object of Part 3.3 of the Act, *Prevention of child deaths*, is “to assist in the prevention and reduction of child deaths through:

(a) maintaining a database on child deaths; and

(b) conducting research about child deaths; and diseases and accidents involving children; and

(c) the development of appropriate policy to deal with such deaths, diseases and accidents.”

The Committee’s functions are:

- to establish and maintain the Child Deaths Register;
- to conduct or sponsor research into child deaths, diseases and accidents involving children and other related matters (such as childhood morbidity and mortality), whether alone or with others;
- to make recommendations on the research into child deaths, diseases and accidents;
- to monitor the implementation of the recommendations;
- to raise public awareness in relation to:
  (i) the death rate of children;
  (ii) the causes and nature of child deaths and diseases and accidents involving children;
  (iii) the prevention or reduction of child deaths, diseases and accidents;
- to contribute to any national database on child deaths in Australia;
- to enter into an arrangement for sharing of information with anyone in Australia who has functions similar to those of this Committee;
- to perform any other functions as directed by the Minister in relation to the object of this legislative provision.

At the end of each financial year the Committee is required to prepare a report about the operation of the Committee during that financial year. Should the Committee conduct or sponsor research about issues identified as being relevant to child deaths in the NT, the resulting report must also be presented to the Minister. The Minister is required to table the Committee’s Annual Report and research report/s in the Legislative Assembly.
Structure and membership of the committee

When the NT Children’s Commissioner, Dr Howard Bath, was appointed in late June 2008, the then Minister for Child Protection, the Honourable Malalndirri McCarthy MLA, determined that he would also be appointed as Convenor of the Committee. The secretariat functions of the Committee are thus provided by the Office of the Children’s Commissioner.

The Act requires that members of the Committee have qualifications or experience relating to the functions of the Committee. In accordance with the requirements of the Act, membership of the Committee reflects a multi-disciplinary approach to promoting the well-being of children in the NT. As at 30 June 2013 the Committee comprised 14 senior representatives from government and independent agencies with expertise in the areas of health care (including hospital and community based clinical care), child development and child protection, research, education, police and public health.

The Act also requires that at least two members of the Committee be Aboriginal persons; that one of the members be a Deputy Coroner; and that the Minister must appoint the Convenor and Deputy Convenor. The Deputy Coroner was appointed as Deputy Convenor.

All membership on the Committee is by Ministerial appointment, for a period of up to two years.

Activities of the committee

Statutory requirements and review

The Committee is required by the Act to conduct at least three meetings a year. The Committee held six meetings in the last financial year, on 1 August 2012, 5 September 2012, 6 December 2012, 27 February 2013, 4 April 2013 and 12 June 2013. The Committee has therefore fulfilled this statutory requirement under the Act.

Child Deaths Register

One of the statutory functions of the Committee is the maintenance of a NT Child Deaths Register, which is a database that contains detailed information relating to deaths of children usually resident in the NT. This includes demographic information such as date of birth, date of death, date of registration of death, sex, Aboriginal and Torres Strait Islander status, place of birth, place of death, usual place of residence, parents’ names and occupations, their dates of birth, and the immediate and underlying causes of death and contextual factors that may have contributed to the death. The Register is based on data from the BDM as well as other sources such as the Office of the NT Coroner, Department of Health, the Office of Children and Families and also from child death registers interstate.

As with previous years, a key component of the Committee’s work is to ensure the register contains information to suit the unique requirements of the Northern Territory while being comparable to other Australian jurisdictions and flexible enough to incorporate future changes that may be required for national data coding initiatives.
National representation and engagement

The CDRPC is a member of the Australian and New Zealand Child Death Review and Prevention Group (ANZCDRP), an informal body that comprises representatives of child death review teams in all Australian jurisdictions and New Zealand.

The role of Chair of the ANZCDRP is currently with Victoria and there is agreement for this Group to review its terms of reference and establish priorities for the next three years including standardisation of data collection across the states and territories.

Building relationships

The Committee has continued its work in developing productive relationships with government agencies such as the Births, Deaths and Marriages (BDM) Registries in NT and interstate, the Office of the NT Coroner, hospitals and health clinics, all of which play an integral part in providing on-going data and information which maintains and improves the validity of the NT Child Deaths Register. The Committee recognises that without the support of these entities it would not be possible to carry out the core functions of the Act.

As previously reported, the Committee has made the decision to partner with the NT Department of Health in coding the perinatal deaths according to the Perinatal Society of Australia and New Zealand (PSANZ) system of classification. This process, which is a work-in-progress, will assist in providing a systematic approach to the audit and review of perinatal deaths in the NT with a view to identifying both perinatal and maternal risk factors and improving clinical learning outcomes.

Research

In the 2011-12 financial year, the Committee commissioned a study of NT child and youth suicides between 2006 and 2010 which was conducted by Menzies School of Health Research.

The results highlighted that over the preceding four decades, there has been a steep increase in NT suicide rates among children and young people. This increase, particularly in the last ten years, has been most evident among Aboriginal children and adolescents. It is noteworthy that there was a relatively high proportion of female deaths compared with rates elsewhere in Australia. The Committee’s recommendations from the study and a link to the study report are available on the Children’s Commissioner’s website.

During 2012-13, the Committee conducted an analysis of 38 sleep-related infant deaths that occurred between 2006 and 2011. These deaths were all sudden, unexpected deaths in infancy (SUDI) including Sudden Infant Death Syndrome (SIDS). A brief background to the report can be found in Chapter 5; the full report will be available as a separate publication later in 2013.
CHAPTER TWO

Issues relating to child death data in the Northern Territory

Sources of data on child deaths

The Australian Bureau of Statistics (ABS) publishes a series of reports and tables on deaths that occur in Australia (‘Deaths, Australia’ and ‘Cause of Deaths, Australia’). These reports are based on data forwarded by the various jurisdictions and provide information such as death rates, cause of death and time trends, by state and territory, age, gender and Aboriginal status.

The ABS reports raise a particular problem for this Committee in that the deaths are reported by date of its registration, not by the date of death. There is sometimes a considerable lag time between registration date and actual date of death, especially in rural and remote areas (where there are inevitable delays with burials, ceremonies etc). There is also a lag time between the date of the death and the ABS publication (usually two years). There are other limitations with the ABS data: only the medical causes of death are recorded and not the contextual, underlying factors that would have contributed to death. Further, the child death tables do not provide data for each individual year of age nor with age groups consistent with what is reported here. Deaths of 17 year olds, for example, are included in a 15-19 year group instead of 15–17 year age group as done in this report. As a result, it may not be possible for information in this report to be directly comparable to ABS reports.

Another data source is the National Coronial Information System (NCIS). Coroners from all jurisdictions contribute to this database and authorised researchers, such as those associated with child death review committees, can access this information. The NCIS can provide valuable information on causes of death and clusters at a state or national level that might warrant the attention of researchers or policy-makers. However, the NCIS is not usually used as a primary data source by child death review committees as there are restrictions on the continuing use of data for research.

The two most important sources of data for the Committee are the records held by BDM and the Coroner. The BDM compiles information on all deaths including causes of death that occur in the Territory. The BDM forwards registered child death information to the Committee at the end of each month. BDM receive information about all child deaths that occur in the NT including deaths of children whose usual place of residence is in another state, territory or country. They also receive information about child deaths that have been referred for a coronial investigation. In these cases, the date of death is registered along with the basic demographic information, but the cause of death details are not entered until the coronial finding is delivered, which may take a year or more - depending on the nature and circumstances of the death and the level of investigation required by the coronial process. The BDM also provides the Committee a monthly record of stillbirths that have occurred in the NT.

The Coroner is the source of additional information about child deaths that occur suddenly or unexpectedly and are therefore deemed ‘reportable’ by the NT Police, administering doctor,
hospital etc (and thus referred to the Coroner for a determination of a cause of death). While the Committee has specific functions under Part 3.3 of the Act relating to the conduct of research and development of appropriate policy recommendations to deal with child deaths, these do not extend to conducting reviews of individual child deaths. This role is specifically allocated to the NT Coroner under sections 14 and 15 of the Coroners Act. The quality of investigations conducted by the Coroner’s office is the source of valuable contextual information which helps this Committee understand the presence and role of each of the associated risk factors – especially for sudden infant deaths where the cause is not apparent, even after a thorough examination.

Another important source of data for the Committee is the NT Department of Health. The many regional and urban hospitals in the NT can be approached for detailed medical records when required by the Committee in assessing the underlying cause of death. The Department’s perinatal data that is held in the Midwives’ Collection contains information about characteristics of the mother, antenatal care, maternal health, pregnancy, labour and childbirth and perinatal health and is another valuable source. This collection is also the source of information for the Department’s annual ‘Mothers and Babies’ publications and for the Australian Institute of Health Welfare (AIHW)’s National Perinatal Data Collection and their publication series, ‘Australian Mothers and Babies’. Perinatal information is available from the Midwives’ Collection in a more timely manner than from other sources.

**Confidentiality of information**

The Care and Protection of Children Act contains provisions relating to the confidentiality of information obtained by members of the Committee. It is an offence under the Act for a member to disclose information, to use information obtained as part of their role on the Committee or to undertake an action that results in the disclosure of such information.

The Act does however allow for disclosure of information for the purposes of research, as part of an inquiry or investigation conducted by the Police or a Coroner, to a court or tribunal, or if otherwise required or authorised by law.

The Committee understands the highly sensitive nature of the information it holds and all members are aware of their obligations under the Act. All members of the Committee are provided with the CDRPC Governance and Business Rules and the CDRPC Privacy Policy documents along with a copy of the NT Government’s guide for members of Northern Territory Government Boards, Committees and Statutory Bodies, on commencement of their appointment.

**Coding cause of death**

The Committee uses International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10AM) which is published by the World Health Organisation (WHO) for worldwide use in translating the narrative descriptions of diseases, injuries and procedures contained in medical records into alphanumeric codes for underlying and other contributing causes of death. The Committee entered into agreement with the National Centre for Health Information Research and Training (NCHIRT) in Brisbane, Queensland for their specialist coders to assess the cause of death for each
child death held in the NT Child Deaths Register from 2006. This Centre has had a long and active participation in the development, dissemination, maintenance and use of the World Health Organisation's Family of International Classifications (WHO-FIC), as a member of Australian Collaborating Centre of the World Health Organisation Family of International Classifications Network (WHO-FIC Network).

This classification is used by a majority of child death registers in Australia and by choosing this classification for underlying and multiple causes of death, NT data becomes comparable with other jurisdictions.

**Calendar year reporting**

The Committee reports data based on calendar years (1 January to 31 December) rather than financial years (1 July to 30 June). Most other Child Death Review Committees also report the previous calendar year, releasing their reports around the middle of the calendar year. This timing allows the Committee to analyse and review information with greater validation of reported data.

**Date of death reporting**

There is always some time difference between the actual date of death and the date of its registration especially in the more rural and remote areas where there is dependence on death certificates, funeral directors and burial times before registration can occur. In the majority, but not all cases in the NT, it is less than 30 days. In accordance with other national and state institutions, the Committee has determined that analyses will focus on the actual date of death rather than the date on which it was registered.

**Non-medical and contextual factors related to death**

In addition to information on deaths in 2012, this report provides an overview of aggregated child death data for the five calendar years from 2008 to 2012. The tables are primarily based on data provided by the BDM, the Office of the Coroner and health facilities, with some comparative national level data compiled by the ABS. This report includes information relating to the child’s or sibling’s involvement with child protection services provided by the NT Office of Children and Families.

It is anticipated that future reports will contain additional information relating to other socio-economic contextual elements that will be examined and incorporated into the Child Deaths Register. Analyses can commence immediately when deaths from natural causes are received from the BDM, however analysis of deaths referred to the Coroner must await the delivery of coronial findings. At the time of printing, 17 of the 42 child deaths of the calendar year 2012 and two from 2011 are awaiting determination of a cause of death by the Coroner.

**Interstate deaths of NT children**

The *Care and Protection of Children Act* defines a “child death” (for the purposes of the Committee) as “the death of a child who is usually resident in the Territory (whether the death occurred in the Territory or not)” (see section 208(a) of the Act).
This definition poses a particular challenge for the Committee because of the number of infants and children who are evacuated from the NT for interstate specialist medical treatment. Given that this only occurs where there are serious risks to a child’s health, it is likely that some children may die while receiving treatment interstate. Although the original treating doctors may receive information from interstate hospitals, there does not appear to be any formal arrangement to notify the BDM of child deaths that have occurred interstate.

Additionally, some Aboriginal families who are normally resident in the NT, travel frequently across state and territory borders for cultural and family reasons and may remain interstate for extended periods. If children from these families die while interstate, there are no formal arrangements for information about the death to be forwarded to the BDM in NT.

The Committee is in the process of examining ways of obtaining accurate information on NT resident children who die interstate. The issue of information sharing about children who die outside their usual state / territory is on the agenda of the Australian and New Zealand Child Death Review and Prevention Group (ANZCDRPG).

The Committee has already in place, arrangements to obtain information about child deaths of NT residents from some interstate BDM registries. However it remains difficult to obtain additional detailed information about interstate child deaths because of privacy issues, which in turn makes coding these deaths to the ICD-10 classification problematic. As these are a very small proportion of deaths, there is minimal impact on the results reported in Chapter 4 of this report.

**Interpretation of data**

Another challenge in the interpretation of child death data in the NT is the extra care required to interpret small numbers. Apparent major variations in both numbers of deaths per year and in death rates by age group and Indigenous status can arise purely by chance – as was shown in a study of Aboriginal people in the NT. 7(Wilson, 2007).

Given this random variation, interpretation needs to be made on changes over an extended period of time rather than from any single year, even five years. This report includes some long term trend data provided by the Department of Health, NT (Appendix 3).

**Validation and review**

As with other annual reports of this type, data associated with the time period of the report is subject to ongoing validation and addition of data as it becomes available. As a result, each publication slightly updates previously reported data, particularly for the most recent year. Late registrations of deaths are a major reason for data updates. NT children that died interstate and are reported late to the Committee are another reason. In this report there have been minor changes to the data reported in the 2011/12 annual report. These adjustments will be ongoing as trans-border migration occurs regularly, especially amongst

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7 Wilson, Condon & Barnes, 2007, p. 184
Aboriginal groups in communities bordering Western Australia, South Australia and Queensland.

There are other instances where it has been difficult to ascertain the age of a deceased person. In these cases the Committee is able to use its statutory powers to obtain additional information, often from health facilities to determine if the person should remain in the Child Deaths Register. Many of the deaths in the Register are also subject to investigation by the Coroner as they are deemed to be sudden and unexpected and thus a ‘reportable death’ under the Coroners Act (NT). For these cases, a cause of death can take some time to be determined and the coronial findings could result in a change of the initial determination of the cause of death.

**Methodology for calculation of child death rates**

The child death rates in Chapter 3 were calculated using data from the Child Deaths Register and ABS Census predictions from 2006 Census, as the most recent releases from ABS (Aug 2013) do not yet contain single year projections for the Aboriginal population of the NT. ABS groups age in a similar way to this report except for the 15 to 19 year group. Hence single year projections are needed to obtain the 15 to 17 year age group population.

The age group specific rates in this report are based on deaths over a five year aggregated period from 2008 to 2012 and on population projections for this period. The rates are calculated by dividing the aggregated deaths (numerator) by the aggregated child population (denominator) with a multiplier 100,000 and are reported as deaths per 100,000 children. The population projections for NT’s Aboriginal children are from ABS catalogue 3238.0 and the closest equivalent non-Aboriginal estimates are derived from ABS catalogue 3222.0.<sup>8</sup> When rates are reported per 1000 live births, the denominator is the total number of live births registered among women for whom NT is given as the usual residence. Where these NT resident live birth numbers are not available, ABS reported live birth numbers (of all live births in the NT) have been used.

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<sup>8</sup> Figures derived in this way have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases.
CHAPTER THREE

Child deaths in the Northern Territory

This report provides an analysis of child deaths for the 2012 calendar year and for the five year period, 2008 to 2012. In addition to providing demographic information from the main data sources, this Chapter also examines the underlying causes of death and related child protection information about these children. As mentioned previously, figures reported in last year’s Annual Report may be a little different to those reported this year.

Child deaths in 2012

In 2012 there were 42 child deaths in the NT among children whose usual residence was the NT. The distribution of the age of children is presented in Figure 1, with age groups selected to reflect similar age-related risks and for comparison with other reports, including ABS reports. In terms of number of deaths, half of all child deaths occurred during infancy (within 12 months of birth) followed by 15 to 17 year-old age group with 8 deaths (19%) and the 1 to 4 year-old group with 6 deaths (14%).

Figure 1: Proportion of child death by age group, NT, 2012

<table>
<thead>
<tr>
<th>Age group</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year-old</td>
<td>21</td>
</tr>
<tr>
<td>1 - 4 year-old</td>
<td>6</td>
</tr>
<tr>
<td>5 - 9 year-old</td>
<td>3</td>
</tr>
<tr>
<td>10 - 14 year-old</td>
<td>4</td>
</tr>
<tr>
<td>15 - 17 year-old</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
</tr>
</tbody>
</table>

Source NT Child Deaths Register, Aug 2013

Of the 42 child deaths in 2012, 22 (52%) were males and 20 (48%) were females. The relative proportion of male and female deaths varied between age groups (Figure 2).
Of the 42 child deaths in 2012, 33 (79%) were Aboriginal children and 9 (21%) were non-Aboriginal children. A slightly higher proportion of deaths among Aboriginal children were males (18 or 55%), whereas among the non-Aboriginal children the greater proportion of deaths were female (56%).

Of the 42 child deaths in 2012, 11 deaths (26%) occurred in Greater Darwin (including Palmerston, Litchfield and Howard Springs) and the majority, 31 (74%) occurred in the rest of the NT. This geographic distribution contrasts to the distribution of NT children who are equally divided between these areas of NT (see Fig 3). The vast majority (84%) of child deaths outside Greater Darwin were of Aboriginal children.

**Child deaths, 2008 to 2012**

Two hundred and forty one child deaths were registered in the NT from 2008 to 2012. Data on these deaths will be presented by year of death, age group, gender, Aboriginal status and usual place of residence.

**Child deaths, 2008 to 2012 by year and age group**

The ages of the children are grouped into under 1 year-old infants, 1 to 4 years, 5 to 9 years, 10 to 14 years and 15 to 17 year-olds. The under-one month group is separated in Table 2 to show changes in neonatal mortality, over recent years. The majority of child deaths occurred during infancy (130 or 53.9%), most commonly (81 or 33.6%) among neonates. This distribution was consistent over the past five years, as shown in Table 1. The next most common age group for child deaths was the 15 to 17 year age group with 35 (14.5%) deaths between 2008 and 2012.

This pattern in which deaths are most frequent in infancy, followed by fewer deaths in middle to late childhood then an increase during the teenage years, is consistent with the other states and territories of Australia.
Table 1: Child deaths by age group and year, NT, 2008-12

<table>
<thead>
<tr>
<th>age group</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>28</td>
<td>26</td>
<td>23</td>
<td>32</td>
<td>21</td>
<td>130 (53.9%)</td>
</tr>
<tr>
<td>&lt; 1 month</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>22</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>32 (13.3%)</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>18 (7.5%)</td>
</tr>
<tr>
<td>10 - 14 years</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>26 (10.8%)</td>
</tr>
<tr>
<td>15 - 17 years</td>
<td>11</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>35 (14.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>46</td>
<td>42</td>
<td>57</td>
<td>42</td>
<td>241 (100%)</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

Child deaths, 2008 to 2012 by gender

Analysis of child deaths by gender shows that the total numbers of male deaths (141 or 58.5%) was higher than females (100 or 41.5%) for the five year period, 2008 to 2012.

Table 2: Child death by year, gender and age group, NT, 2008-12

<table>
<thead>
<tr>
<th>Year and gender</th>
<th>&lt; 1 year</th>
<th>1-4 years</th>
<th>5-9 years</th>
<th>10-14 years</th>
<th>15-17 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 Female</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>54</td>
</tr>
<tr>
<td>2009 Female</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>46</td>
</tr>
<tr>
<td>2010 Female</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>2011 Female</td>
<td>11</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>57</td>
</tr>
<tr>
<td>2012 Female</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>42</td>
</tr>
<tr>
<td>Total Female</td>
<td>59</td>
<td>12</td>
<td>7</td>
<td>11</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>71</td>
<td>20</td>
<td>11</td>
<td>15</td>
<td>24</td>
<td>141</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>32</td>
<td>18</td>
<td>26</td>
<td>35</td>
<td>241</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013; *Totals may differ from last year’s report due to late registrations and interstate deaths.
Whilst males made up 51.9% of all children in the NT population (ABS 2012), they accounted for nearly 60% of all child deaths over these years. Table 2 shows the details of deaths by gender and by age group for each of the five years, 2008 to 2012.

Child deaths, 2008 to 2012 by Aboriginal status

Analysis of the 241 child deaths from 2008 to 2012 by Aboriginal status shows that the numbers of Aboriginal deaths far exceed those of non-Aboriginal children for each of the past five years. Aboriginal children make up 43.6% of the total NT children’s population yet they accounted for over 70% (181) of all child deaths during the past five year period.

Table 3 shows the numbers of child deaths by Aboriginal status and age group for each of the past five years. The table displays the relatively high numbers of Aboriginal infant deaths (67%) and deaths among the 15 to 17 year old (83%) Aboriginal children.

### Table 3: Child deaths by year, Aboriginal status and age group, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR and Aboriginal status</th>
<th>&lt; 1 year</th>
<th>1 - 4 years</th>
<th>5 - 9 years</th>
<th>10 - 14 years</th>
<th>15 - 17 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 Aboriginal</td>
<td>19</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>28</strong></td>
<td><strong>6</strong></td>
<td><strong>3</strong></td>
<td><strong>6</strong></td>
<td><strong>11</strong></td>
<td><strong>54</strong></td>
</tr>
<tr>
<td>2009 Aboriginal</td>
<td>19</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>26</strong></td>
<td><strong>7</strong></td>
<td><strong>4</strong></td>
<td><strong>6</strong></td>
<td><strong>3</strong></td>
<td><strong>46</strong></td>
</tr>
<tr>
<td>2010 Aboriginal</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>23</strong></td>
<td><strong>5</strong></td>
<td><strong>4</strong></td>
<td><strong>5</strong></td>
<td><strong>5</strong></td>
<td><strong>42</strong></td>
</tr>
<tr>
<td>2011 Aboriginal</td>
<td>23</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>9</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>32</strong></td>
<td><strong>8</strong></td>
<td><strong>4</strong></td>
<td><strong>5</strong></td>
<td><strong>8</strong></td>
<td><strong>57</strong></td>
</tr>
<tr>
<td>2012 Aboriginal</td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>33</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>21</strong></td>
<td><strong>6</strong></td>
<td><strong>3</strong></td>
<td><strong>4</strong></td>
<td><strong>8</strong></td>
<td><strong>42</strong></td>
</tr>
<tr>
<td>Aboriginal</td>
<td>90</td>
<td>24</td>
<td>12</td>
<td>18</td>
<td>29</td>
<td>173</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>40</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>68</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>130</strong></td>
<td><strong>32</strong></td>
<td><strong>18</strong></td>
<td><strong>26</strong></td>
<td><strong>35</strong></td>
<td><strong>241</strong></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013; * Totals may differ from last year’s report due to late registrations and interstate deaths.

Child deaths, 2008 to 2012 by usual residence

Usual residence refers to the parent or child’s usual place of residence as recorded in the BDM register and as reported by the parents or next of kin. The usual residence has been separated into Greater Darwin and the rest of NT.
A breakdown of child deaths by usual residence within age group, gender and Aboriginal status (Table 4) shows the majority of child deaths occurred outside the Greater Darwin area for each of these categories.

**Table 4: Child deaths by usual residence, age group, gender and Aboriginal status NT, 2008-12**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Usual residence: Greater Darwin no. (%)</th>
<th>rest of NT no. (%)</th>
<th>Total no. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>43 (33.1)</td>
<td>87 (66.9)</td>
<td>130 (100)</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>9 (28.1)</td>
<td>23 (71.9)</td>
<td>32 (100)</td>
</tr>
<tr>
<td>5 – 9 years</td>
<td>5 (27.8)</td>
<td>13 (72.2)</td>
<td>18 (100)</td>
</tr>
<tr>
<td>10- 14 years</td>
<td>2 (7.7)</td>
<td>24 (92.3)</td>
<td>26 (100)</td>
</tr>
<tr>
<td>15 - 17 years</td>
<td>9 (25.7)</td>
<td>26 (74.3)</td>
<td>35 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>68 (28.2)</td>
<td>173 (71.8)</td>
<td>241 (100)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>24 (24)</td>
<td>76 (76)</td>
<td>100 (100)</td>
</tr>
<tr>
<td>male</td>
<td>44 (31.2)</td>
<td>97 (68.8)</td>
<td>141 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>173</td>
<td>241</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aboriginal status</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal</td>
<td>28 (16.2)</td>
<td>145 (83.8)</td>
<td>173 (100)</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>40 (58.8)</td>
<td>28 (41.2)</td>
<td>68 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>173</td>
<td>241</td>
</tr>
</tbody>
</table>

Source NT Child Deaths Register, Aug 2013

The majority of child deaths for the period 2008 to 2012 occurred outside Greater Darwin - even though the NT child population evenly distributed between Greater Darwin and the rest of NT (Figure 3). In particular, 92% of all 10-14 year-old deaths occurred in the rest of NT.
Infant deaths 2008 to 2012

There were 130 infant deaths between 2008 and 2012 in the NT, with a majority being males and Aboriginal children as shown in Table 5.

Table 5: Infant death by gender and Aboriginal status, NT, 2008-12

<table>
<thead>
<tr>
<th>Gender</th>
<th>Aboriginal status</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aboriginal</td>
<td>38</td>
<td>52</td>
<td>90</td>
<td>69.2</td>
</tr>
<tr>
<td></td>
<td>non-Aboriginal</td>
<td>21</td>
<td>23</td>
<td>40</td>
<td>30.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>59</td>
<td>71</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td></td>
<td>45.4</td>
<td>54.6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

Although about 40% of births in the NT are to Aboriginal women (ABS, 2011), nearly 70% of infants who died were Aboriginal. Infancy is a vulnerable period in a child’s life but a little more so among males and far more so among Aboriginal infants.

Stillbirths, neonatal and perinatal deaths, NT 2008 to 2012

Stillbirths, 2008 to 2012

The definition of child death provided in Section 208 of the Care and Protection of Children Act includes stillbirths as defined in the Births, Deaths and Marriages Registration Act. This Act defines a stillborn child as “a child of at least 20 weeks gestation or with a body mass of...
at least 400 grams at birth that exhibits no sign of respiration or heartbeat, or other sign of life, after birth." For the purposes of the CDRPC it was decided to report and analyse stillbirths separately from child deaths as is the case in other Australian jurisdictions where stillbirths are registered.

The BDM is the source of data for the following tables. There were 144 stillbirths reported between 2008 and 2012, with an average gestation of 27.5 weeks and an average birthweight of 1195 grams. There were 81 male and 62 female deaths and 1 of unknown gender. Table 6 and Figure 4 show the gender distribution of stillbirths for the past five years; there are higher numbers of stillborn males in most years.

Table 6: Stillbirths by gender and year, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total*</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>13</td>
<td>20</td>
<td>11</td>
<td>11</td>
<td>7</td>
<td>62</td>
<td>43</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>21</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>81</td>
<td>57</td>
</tr>
<tr>
<td>unknown</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>42</td>
<td>29</td>
<td>27</td>
<td>21</td>
<td>144</td>
<td>100</td>
</tr>
</tbody>
</table>

Source NT Child Deaths Register, Aug 2013

*The individual totals may differ from last year’s report due to late registration or interstate deaths.

Figure 4: Stillbirths by gender and year, NT, 2008-12

Source NT Child Deaths Register, Aug 2013
Of the 144 stillbirths, 99 were to Aboriginal mothers, while 54 stillbirths were to non-Aboriginal mothers. As with child deaths and infant deaths, the number of registered stillbirths is higher among the Aboriginal population.

Table 7 shows the breakdown of stillbirths by Aboriginal status for each of the five years. Stillbirths to Aboriginal mothers make up 60% of all stillbirths in the NT although Aboriginal mothers made up 40% of all mothers who gave birth in the NT - during the mid-period year of 2010 (ABS, 2012).

Table 7: Stillbirths by Aboriginal status and year, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Aboriginal status</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aboriginal</td>
<td>16</td>
<td>27</td>
<td>18</td>
<td>14</td>
<td>11</td>
<td>86</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Non-Aboriginal</td>
<td>9</td>
<td>15</td>
<td>11</td>
<td>13</td>
<td>10</td>
<td>58</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>25</td>
<td>42</td>
<td>29</td>
<td>27</td>
<td>21</td>
<td>144</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013.
*The individual totals may differ from last year’s report due to late registration or interstate deaths.

Neonatal deaths, 2008 to 2012

The neonatal period covers the time from birth to 28 days of age and a neonatal death is the death of a live-born baby within 28 days of its birth.

Between 2008 and 2012 there were 81 neonatal deaths in the NT, of which 35 were females and 46 were males. As with infant deaths, a greater proportion of neonatal deaths were of males (57%) (Table 8 and Figure 5).

Table 8: Neonatal deaths by gender and year, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Gender</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>3</td>
<td>35</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>6</td>
<td>46</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>22</td>
<td>9</td>
<td>81</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013
Figure 5: Neonatal deaths by year and gender, NT, 2008-12

Neonatal deaths by Aboriginal status shows a similar pattern to other comparisons: numbers of Aboriginal neonatal deaths were far higher (63.8%) than for non-Aboriginal ones (Table 9). The proportion of live births to Aboriginal women was at 40.5% of all NT live births, for the period 2006 to 2010 (ABS cat 33010, 2011).

Table 9: Neonatal deaths by year and Aboriginal status, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Aboriginal status</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aboriginal</td>
<td>11</td>
<td>12</td>
<td>9</td>
<td>15</td>
<td>6</td>
<td>53</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Non-Aboriginal</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>22</td>
<td>9</td>
<td>81</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013
Table 10: Neonatal deaths by gender and Aboriginal status, NT, 2008-12

<table>
<thead>
<tr>
<th>Gender Aboriginal status</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal</td>
<td>21</td>
<td>32</td>
<td>53</td>
<td>65.4</td>
</tr>
<tr>
<td>Non-Aboriginal</td>
<td>14</td>
<td>14</td>
<td>28</td>
<td>34.6</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>46</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>percent</td>
<td>43.2</td>
<td>56.8</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013
* Some totals may differ from last year’s report due to late registration or interstate deaths.

Perinatal deaths, 2008 to 2012

In Australia, the perinatal period commences at the 20\textsuperscript{th} completed week of gestation and ends 28 completed days after birth. Perinatal deaths are a combination of stillbirths and neonatal deaths (as defined in the NT Births, Deaths and Marriages Registration Act).

There is an elevated risk of death in the perinatal period and the Committee specifically monitors this period. Table 11 shows stillbirths and neonatal numbers among the Aboriginal and non-Aboriginal populations separately over the past five years. Although numbers within each of the years are small, especially for neonatal deaths, they show more stillbirths (64\%) in total, in both populations and little change over these years.
Table 11: Perinatal deaths by type, Aboriginal status and year, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total (%)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aboriginal status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neopatal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal</td>
<td>11</td>
<td>12</td>
<td>9</td>
<td>15</td>
<td>6</td>
<td>53  (65)</td>
<td></td>
</tr>
<tr>
<td>Non-Aboriginal</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>28  (35)</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>22</td>
<td>9</td>
<td>81 (36) (100)</td>
<td></td>
</tr>
<tr>
<td>Stillbirth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal</td>
<td>16</td>
<td>27</td>
<td>18</td>
<td>14</td>
<td>11</td>
<td>86  (60)</td>
<td></td>
</tr>
<tr>
<td>Non-Aboriginal</td>
<td>9</td>
<td>15</td>
<td>11</td>
<td>13</td>
<td>10</td>
<td>58  (40)</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>25</td>
<td>42</td>
<td>29</td>
<td>27</td>
<td>21</td>
<td>144 (64) (100)</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>42</td>
<td>59</td>
<td>46</td>
<td>49</td>
<td>30</td>
<td>225* (100)</td>
<td></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013.

* Individual totals may differ from last year’s report due to late registration or interstate deaths.

**Child death rates**

Child death rates are a useful measure that adjusts the number of deaths for differences in the population size. The rate of child deaths is reported here as number of deaths per 100,000 population of children or as number of deaths in infancy per 1000 live births, both of which are standard units of measurement. Rates within age groups are reported similarly, as age-group specific rates. This allows infant and child deaths in the NT to be compared to interstate, national and even international rates.

In this report, population numbers for the denominator are based on ABS Estimated Residential Population data for single years – for children aged 0-17 years in the NT (ABS Cat. 3101.0, 2012). The child death rates reported here for the NT have to be treated with caution as the small number of deaths in this jurisdiction, can show differences between years which may merely be an artefact of random variations. Combining information across five years provides a more reliable indicator of trends.

Based on the total number of NT child deaths between 2008 and 2012 (241), the combined rate over this five year period was 76.3 deaths per 100,000 children. Table 12 and Figure 6 show the rates and 95% confidence intervals for each of the past five years.
Table 12: Child death rate\(^\#\) by year, NT, 2008-12

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Number</th>
<th>Population</th>
<th>rate(^#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>54</td>
<td>62182</td>
<td>86.8 (63.7 - 110.0)</td>
</tr>
<tr>
<td>2009</td>
<td>46</td>
<td>62691</td>
<td>73.4 (52.2 - 94.6)</td>
</tr>
<tr>
<td>2010</td>
<td>42</td>
<td>63145</td>
<td>66.5 (46.4 - 86.6)</td>
</tr>
<tr>
<td>2011</td>
<td>57</td>
<td>63593</td>
<td>89.6 (66.4 - 112.9)</td>
</tr>
<tr>
<td>2012</td>
<td>42</td>
<td>64182</td>
<td>65.4 (45.6 - 85.2)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>241</td>
<td>315793</td>
<td>76.3 (66.7 - 85.9)</td>
</tr>
</tbody>
</table>

\(^\#\) per 100,000 children with 95% confidence intervals
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3222.0, 2009

Figure 6: Child mortality rate\(^\#\) by year, NT 2008 - 2012

\(^\#\) per 100,000 children with 95% confidence intervals
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3222.0, 2009

The age-group specific death rates for this five year period are shown in Table 13. The infant death rate of 656 deaths per 100,000 infants is seen to be the major portion of the overall child death rate; a rate that is nearly ten times that of the next highest rate, among 15 to 17 year-olds (71.0 per 100,000).
### Table 13: Child death rate by age-group, NT, 2008-12

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number</th>
<th>Population (5 years)</th>
<th>rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>130</td>
<td>19821</td>
<td>656 (543–769)</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>32</td>
<td>75327</td>
<td>42.5 (27.8-57.2)</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>18</td>
<td>88026</td>
<td>20.4 (11.0-29.9)</td>
</tr>
<tr>
<td>10- 14 years</td>
<td>26</td>
<td>83347</td>
<td>31.2 (19.2-43.2)</td>
</tr>
<tr>
<td>15 - 17 years</td>
<td>35</td>
<td>49272</td>
<td>71.0 (47.5-94.6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>241</td>
<td>315793</td>
<td>76.3 (66.7-85.9)</td>
</tr>
</tbody>
</table>

* per 100,000 children with 95% confidence intervals
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3222.0, 2009

Age-group specific child death rates by year (Table 14) show that the infant mortality rates were consistently high over the past 5 years, while there were substantial variations in the annual rates among some of the age groups.

### Table 14: Child death rate* by age-group and year, NT, 2008-12

<table>
<thead>
<tr>
<th>Age group</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>725</td>
<td>663</td>
<td>579</td>
<td>797</td>
<td>518</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>42</td>
<td>48</td>
<td>33</td>
<td>52</td>
<td>38</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>17</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>10- 14 years</td>
<td>36</td>
<td>36</td>
<td>30</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>15 - 17 years</td>
<td>111</td>
<td>30</td>
<td>51</td>
<td>81</td>
<td>82</td>
</tr>
<tr>
<td>TOTAL</td>
<td>87</td>
<td>73</td>
<td>67</td>
<td>90</td>
<td>65</td>
</tr>
</tbody>
</table>

* per 100,000 children
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3222.0, 2009

Table 15 shows the age-group specific rates by gender with higher rates among males than females in every age group. This gender difference varies from the 10% higher rate for infant males to the rates among 15-17 year-olds where the male death rate is double that of the female.
Table 15: Child death rate and ratio by age group and gender, NT, 2008-12

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number</th>
<th>Rate#</th>
<th>Rate ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>71</td>
<td>59</td>
<td>699.0</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>20</td>
<td>12</td>
<td>51.8</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>11</td>
<td>7</td>
<td>24.6</td>
</tr>
<tr>
<td>10-14 years</td>
<td>15</td>
<td>11</td>
<td>34.5</td>
</tr>
<tr>
<td>15-17 years</td>
<td>24</td>
<td>11</td>
<td>93.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>141</td>
<td>100</td>
<td>86.8</td>
</tr>
</tbody>
</table>

# per 100,000 children
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3101.0, 2012.
^ Some totals may differ from last year’s report due to late registration and interstate deaths.

Age-group specific child death rates by Aboriginal status are presented in Table 16 and show that death rates are higher among Aboriginal children than non-Aboriginal children in all age groups. For all age groups combined, rate among Aboriginal children is 3.3 times greater than for non-Aboriginal children. There is some variation in the difference in rates between age groups, from a 2.5 times greater rate among 5 to 9 year-olds to a 6.3 times greater rate among the 15 to 17 year-olds.

Table 16: Child death rate by age group and Aboriginal status, NT, 2008-12

<table>
<thead>
<tr>
<th>Age group</th>
<th>number</th>
<th>Rate#</th>
<th>Rate ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aboriginal</td>
<td>non-Aboriginal</td>
<td>Aboriginal</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>90</td>
<td>40</td>
<td>1110</td>
</tr>
<tr>
<td>1 - 4 years</td>
<td>24</td>
<td>8</td>
<td>77.2</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>12</td>
<td>6</td>
<td>30.6</td>
</tr>
<tr>
<td>10-14 years</td>
<td>18</td>
<td>8</td>
<td>49.1</td>
</tr>
<tr>
<td>15-17 years</td>
<td>29</td>
<td>6</td>
<td>135.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>173</td>
<td>68</td>
<td>126.8</td>
</tr>
</tbody>
</table>

# per 100,000 children
Source: NT Child Deaths Register, Aug 2013 and ABS Cat 3101.0, 2012.
^ Some totals may differ from last year’s report due to late registration and interstate deaths.
Table 17, adapted from ABS, provides a comparison between the NT Child Death Register’s infant deaths with ABS child death rates for the NT for the period between 2008 and 2011. For example, the CDR has records for 32 infant deaths in 2011 while the ABS reports 25 infant deaths (ABS Deaths, 2011) for all causes. The CDR rates are based on actual ‘date of death’ numbers while the ABS rates are based on the dates that deaths were registered. The ABS does not show numbers of age groups where the numbers are too small (eg 5 to 9 years and 10 to 14 years) but they are available in the totals for the NT. Table 17 shows the slight difference in rates due to the different counting rules used.

**Table 17: Comparison of infant death rate by year, CDR and ABS, NT, 2008-11**

<table>
<thead>
<tr>
<th>Year</th>
<th>number ABS</th>
<th>number CDR</th>
<th>child death rate# ABS</th>
<th>infant death rate# CDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>25</td>
<td>28</td>
<td>648</td>
<td>725</td>
</tr>
<tr>
<td>2009</td>
<td>27</td>
<td>26</td>
<td>688</td>
<td>663</td>
</tr>
<tr>
<td>2010</td>
<td>25</td>
<td>23</td>
<td>629</td>
<td>579</td>
</tr>
<tr>
<td>2011</td>
<td>25</td>
<td>32</td>
<td>623</td>
<td>797</td>
</tr>
</tbody>
</table>

# per 100,000

Source: NT Child Deaths Register, Aug 2013 and ABS, Deaths 2011 and Cat. No. 3220

Due to changes over time in the completeness of responses by the parent(s) to the ‘Australian Aboriginal and Torres Strait Islander’ question in birth registration forms, ABS advises that care should be taken when interpreting ABS data.

**Infant Mortality Rate**

Infant mortality rates provided by ABS for the years between 1991 and 2011 show a downward trend in infant mortality for NT and for Australia, as shown in Figure 7. The gap in the rates between NT Aboriginal and non-Aboriginal children, has steadily reduced from a difference of 19.6 deaths per 1,000 livebirths in 1991-93 (27.5 and 7.9) to 9.4 deaths per 1,000 livebirths (13.0 and 3.6) in 2009–11. The individual rates for both Aboriginal and non-Aboriginal infants in the NT have halved over the past two decades (27.5 to 13.0 and 7.9 to 3.6 respectively) but the current rate of Aboriginal infant mortality (13.0 deaths) remains nearly twice (1.7 times) that of the non-Aboriginal rate of two decades ago (7.9 deaths). Figure 7 also shows the infant mortality rates in NT compared to the Australian rates over the past ten years. The NT non-Aboriginal mortality rates are similar to national rates.
Figure 7: Infant mortality rate\(^a\) by Aboriginal status and year, NT 1991 – 2011 and Australia, 2001 - 11

![Graph showing infant mortality rates](image)

\(^a\) Rates per 1000 live births
Source: ABS 33020D0_2011, 2012 and ABS 3238.0, 2009

While single year Aboriginal rates may fluctuate due to small numbers, they are nevertheless a reliable indicator when viewed as a trend over many years. Figure 8 shows the rate ratio of Aboriginal to non Aboriginal infant mortality rates over the past two decades. The results show that on average, the Aboriginal rates have remained consistently about 3 times greater than the non-Aboriginal rates.
Involvement with child protection services 2008-2012

Children involved with the child protection system are considered to be a particularly vulnerable subgroup of the population because concerns about their safety and wellbeing have been brought to the attention of the Office of Children and Families. It is therefore prudent that child death committees consider the ‘child protection’ history of children who have died or their siblings, as an indicator of vulnerability.

This report provides data on whether the child that died and/or his/her sibling were known to the OCF. Involvement of child or sibling in the child protection system is scoped into the analysis of child protection data in recognition of the factors that give rise to concerns about child safety and wellbeing of a child can affect the whole family not just one individual child.

As background, the OCF received close to 8,000 notifications of harm to children in 2011-12. All notifications were subject to an assessment process and around 40% of the notifications were investigated further. In 2011-12, 21% of notifications of harm were substantiated following an investigation.

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A child and/or sibling being known or having any involvement with OCF includes notifications of child harm or exploitation, an investigation and/or substantiation of child harm or exploitation and a child and/or sibling entering substitute care.
It is important to note that contact with the child protection system can vary widely from being the subject of a notification made to the OCF to having the concerns of harm investigated, through to having a child removed and placed in an alternative care placement. All of these elements are taken into consideration when assessing whether a child was 'known' to OCF.

Of the 241 child deaths in the NT between 2008 and 2012, 63 children or over a quarter (26.1%) were known to OCF, with over a third (38%) of these known within the previous 3 years. The remaining 178 (73.9%) were not known to OCF (Figure 9).

**Figure 9: Number of child deaths by ‘known/ not known to OCF’ status, NT, 2008-12**

![Graph showing the number of child deaths by 'known' or 'not known' to OCF]

Of the 63 children known OCF, 36 were known together with their siblings whereas 27 were known independently (Table 18).

**Table 18: Child deaths and siblings by ‘known and not known to OCF’ status, NT, 2008-12**

<table>
<thead>
<tr>
<th>SIBLING</th>
<th>KNOWN</th>
<th>NOT KNOWN</th>
<th>TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHILD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KNOWN</td>
<td>36</td>
<td>27</td>
<td>63 (26.1)</td>
</tr>
<tr>
<td>NOT KNOWN</td>
<td>15</td>
<td>163</td>
<td>178 (73.9)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>51</td>
<td>190</td>
<td>241 (100)</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

Furthermore, of the 63 children known OCF, 36 were known together with their siblings whereas 27 were known independently (Table 18).

Table 19 shows the demographic details of these 63 ‘known’ children. They are also compared to children not known to OCF - to show where the excess risks were for the ‘known’ children. Among the children known to OCF, over 60% were male (similar to the proportion of males among all child deaths); 85% were Aboriginal, which was higher than the Aboriginal representation among all child deaths (71.5%) and 73% were from outside the Greater Darwin area (again similar to the proportion among all child deaths). Nearly half
(47.6%) of the child deaths known to OCF were of older children between 10 and 17 years old, when they make up a quarter (25.3%) of all child deaths (Table 1).

When compared to children not known to OCF, there were similarities in gender breakdown and in their usual residence, ie child deaths in Greater Darwin were equally likely to be known to OCF as those from the rest of NT. However, a much higher proportion of children known to OCF were Aboriginal than children not known by OCF (85.7% vs 67.8%) and aged 10 to 17 years (47.6% vs 17.8%).

Table 19: Characteristics of child death by ‘known and not known to OCF’ status, NT, 2008-12

<table>
<thead>
<tr>
<th>Child characteristic</th>
<th>KNOWN TO OCF</th>
<th>NOT KNOWN TO OCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>38.1%</td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
<td>61.9%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100%</td>
</tr>
<tr>
<td>Aboriginal status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal</td>
<td>54</td>
<td>85.7%</td>
</tr>
<tr>
<td>non-Aboriginal</td>
<td>9</td>
<td>14.3%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100%</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Darwin</td>
<td>17</td>
<td>27.0%</td>
</tr>
<tr>
<td>rest of NT</td>
<td>46</td>
<td>73.0%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100%</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>under 1</td>
<td>11</td>
<td>17.5%</td>
</tr>
<tr>
<td>1 - 4</td>
<td>11</td>
<td>17.5%</td>
</tr>
<tr>
<td>5 – 9</td>
<td>11</td>
<td>17.5%</td>
</tr>
<tr>
<td>10 - 14</td>
<td>15</td>
<td>23.8%</td>
</tr>
<tr>
<td>15 - 17</td>
<td>15</td>
<td>23.8%</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

Further breakdown of Aboriginal children’s known or not known to OCF status showed a slight excess of ‘known’ deaths in Greater Darwin area (24% vs 14%, Table 20) but the biggest difference was in their age group distribution (Table 21). Aboriginal infants made up nearly 70% of those not known to OCF while they made up about 15% of those known. Similarly, nearly half (41%) of Aboriginal child deaths known to OCF were in the 5 to 14 year age range while they only make up 9% of those not known. Thus among Aboriginal child deaths in the combined 5 to 14 year age range, it is 4.5 times more likely that they were
known, than not known by OCF. Among the non-Aboriginal child deaths, this ratio among the 5 to 14 year-olds was about 2.4 (not shown in Table).

**Table 20: Aboriginal child deaths by ‘known and not known to OCF’ status and usual residence, NT 2008 – 12**

<table>
<thead>
<tr>
<th>usual residence</th>
<th>Aboriginal child Known</th>
<th>Aboriginal child Not known</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Darwin</td>
<td>13 (24%)</td>
<td>16 (14%)</td>
</tr>
<tr>
<td>rest of NT</td>
<td>41 (76%)</td>
<td>102 (86%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>54 (100%)</strong></td>
<td><strong>118 (100%)</strong></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

**Table 21: Aboriginal child deaths by ‘known and not known to OCF’ status and age group, NT 2008 – 12**

<table>
<thead>
<tr>
<th>age group*</th>
<th>Aboriginal child Known</th>
<th>Aboriginal child Not known</th>
</tr>
</thead>
<tbody>
<tr>
<td>under 1</td>
<td>8 (15%)</td>
<td>81 (68%)</td>
</tr>
<tr>
<td>1 - 4</td>
<td>9 (17%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>5 – 14</td>
<td>23 (42%)</td>
<td>7 (6%)</td>
</tr>
<tr>
<td>15 - 17</td>
<td>14 (26%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>54 (100%)</strong></td>
<td><strong>118 (100%)</strong></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

*Note the combined 5 – 14 year age group

This report also presents information on whether children known to OCF had the notification substantiated i.e whether the Office had concluded that the child ‘has been, is being or is likely to be abused, neglected or otherwise harmed’.

Of the 63 children known to OCF, harm was substantiated for 18 (28.6%), mostly from the 1 to 4 year age group (6 out of 11) and less commonly from the 15 to 17 years age group (3 out of 15). Among the substantiated cases there were similar proportion of males and females and a slight excess of non-urban children (72%), but almost all (94.4%) of the children for whom harm was substantiated were Aboriginal.

Caution must be applied when interpreting these results as an involvement with the child protection system does not imply that the deaths were in any way child protection related. As stated previously, being known to OCF can vary from a mere notification to harm being confirmed after thorough investigation. A more detailed analysis with data linkage capabilities, over a longer period of time would be required to draw any conclusions about the role of child protection or other Departmental involvement.
CHAPTER FOUR

Underlying cause of child death in the Northern Territory, 2008 - 2012

The World Health Organisation (WHO) distinguishes between a cause of death (COD) and the underlying cause of death (UCOD). A COD is defined as “all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries”. A UCOD 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” (WHO, 2008). Depending on the circumstances of the death, the COD and UCOD may be the same or may differ.

In the tables and figures presenting UCOD, child deaths have been grouped in classifications that are based on ICD-10 AM Chapter headings. The ICD-10 AM, a medical classification list produced by WHO, consists of 21 Chapters that capture the full range of human morbid conditions and injuries. ICD-10 AM contains codes for diseases, signs and symptoms, abnormal findings, complaints, social circumstances and external causes of injury or diseases. The Chapter numbers and headings (1 to 20) with a brief Chapter description are presented in the Table 22 with the number of deaths that occurred between 2008 and 2012 whose UCOD has been coded to that Chapter. The last four Chapters in the table (16, 17, 18 and 20) are emphasised as they are the Chapters which contain most of the child deaths – and these have been selected for further analysis. The remaining Chapters are grouped into an ‘Others’ category.

A more detailed breakdown of the cause of death by Chapters is provided in Appendix 2. Analysis of this kind allows child deaths occurring throughout the NT to be more thoroughly examined with regard to how and why the deaths have occurred, especially those that are preventable. Such understanding can help raise public awareness and also contribute to the development of targeted responses to reduce such deaths in the future.

Of the 241 child deaths between 2008 and 2012, there are 19 that are still open coronial cases. These ‘open’ cases are from a mix of age groups, gender and Aboriginal status, similar to the mix of child deaths where cause of death information is known (222 deaths). These open coronial cases are more likely to be from the ‘External causes’ and ‘Symptoms and signs’ Chapters and thus the proportions reported here for these Chapters are expected to change when the coronial cases are closed.
Table 22: Underlying cause of child death by ICD-10AM Chapter# NT, 2008-12

<table>
<thead>
<tr>
<th>ICD-10AM Chapter#</th>
<th>Code prefix</th>
<th>ICD-10AM Chapter descriptions</th>
<th>number</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A and B</td>
<td>Infectious and parasitic diseases</td>
<td>6</td>
<td>2.7</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>Malignant neoplasms</td>
<td>7</td>
<td>3.2</td>
</tr>
<tr>
<td>4</td>
<td>E</td>
<td>Endocrine, nutritional and metabolic diseases</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>6</td>
<td>G</td>
<td>Diseases of the nervous system</td>
<td>11</td>
<td>5.0</td>
</tr>
<tr>
<td>9</td>
<td>I</td>
<td>Diseases of the circulatory system</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>10</td>
<td>J</td>
<td>Diseases of the respiratory system</td>
<td>6</td>
<td>2.7</td>
</tr>
<tr>
<td>11</td>
<td>K</td>
<td>Diseases of digestive system</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td></td>
<td><strong>34</strong></td>
<td><strong>15.3</strong></td>
</tr>
<tr>
<td>16</td>
<td>P</td>
<td>Conditions originating in the perinatal period</td>
<td>69</td>
<td>31.1</td>
</tr>
<tr>
<td>17</td>
<td>Q</td>
<td>Congenital malformations, deformations and chromosomal abnormalities</td>
<td>22</td>
<td>9.9</td>
</tr>
<tr>
<td>18</td>
<td>R</td>
<td>Symptoms, signs and abnormal findings</td>
<td>34</td>
<td>15.3</td>
</tr>
<tr>
<td>20</td>
<td>S - Y</td>
<td>External causes, accidents, injuries</td>
<td>63</td>
<td>28.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>222</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013  
*excludes 19 which are still open coronial cases  
# the four main Chapter headings are bolded

**Update from 2011-12 report**

In last year’s Annual Report (2011-12) there were 19 deaths that were ‘open’ coronial cases (between 2007 and 2011) at the time of printing. Of these, eight were subsequently coded to the ‘External causes’ Chapter, six to the ‘Symptoms, Signs’ Chapter, two to ‘Others’ Chapters and the remaining three are still open. This additional information has increased the proportion of deaths from ‘External causes’ reported last year, from 27.8% to 28.8% - and the ‘Symptoms, Signs..’ Chapter from the reported 12% to 13.4% during that five-year period. Of the eight additional deaths from the ‘External causes..’ Chapter, four involved motor vehicles (taking the total reported in the last Annual report from 25 to 29) and two were hanging/ strangulation deaths (taking the total reported from 14 to 16).

Of the six additional deaths from the ‘Symptoms, Signs’ Chapter, three were deaths from SIDS and three from ‘Other ill-defined ..’ causes (taking the total reported last year from 28
to 34). Similarly, the number of child deaths from ‘Intentional self-harm by hanging’ has increased by two during that five-year period after all coronial cases had been closed. Three of the 19 open coronial cases then, were in the vulnerable 15 to 17 year age-group bracket. If this trend was to continue, the number of deaths from ‘Intentional self-harm’ for 2008–12 may be higher as five of the currently open coronial cases are in this age-group bracket.

**Underlying cause of death by year**

Table 23 shows the change of proportion of these causes of deaths between 2008 and 2012. As most of the open coronial cases are from 2012, the number of deaths with a cause of death is lowest. Hence the proportions for 2012 need to be interpreted with caution. There is a small increase in the proportion of deaths from the ‘Conditions originating in the perinatal..’ Chapter although the underlying numbers have halved, between 2008 and 2012. The ‘External causes’ and ‘Symptoms and Signs’ Chapters may change as many of the open coronial cases are likely to be from these Chapters.

**Table 23: Underlying cause of death by ICD-10 Chapter and year, NT, 2008-12**

<table>
<thead>
<tr>
<th>ICD10AM Chapter descriptions</th>
<th>2008 (%)</th>
<th>2009 (%)</th>
<th>2010 (%)</th>
<th>2011 (%)</th>
<th>2012 (%)</th>
<th>TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions originating in the perinatal period</td>
<td>15 (27.8)</td>
<td>13 (28.3)</td>
<td>16 (38.1)</td>
<td>18 (32.7)</td>
<td>7 (28.0)</td>
<td>69 (31.1)</td>
</tr>
<tr>
<td>Congenital malformations, deformations and chromosomal abnormalities</td>
<td>4 (7.4)</td>
<td>9 (19.6)</td>
<td>2 (4.8)</td>
<td>4 (7.3)</td>
<td>3 (12.0)</td>
<td>22 (9.9)</td>
</tr>
<tr>
<td>Symptoms, signs and abnormal findings</td>
<td>6 (11.1)</td>
<td>8 (17.4)</td>
<td>6 (14.3)</td>
<td>9 (16.4)</td>
<td>5 (20.0)</td>
<td>34 (15.3)</td>
</tr>
<tr>
<td>External causes, accidents, injuries</td>
<td>20 (37.0)</td>
<td>8 (17.4)</td>
<td>13 (31.0)</td>
<td>15 (27.3)</td>
<td>7 (28.0)</td>
<td>63 (28.4)</td>
</tr>
<tr>
<td>Others</td>
<td>9 (16.7)</td>
<td>8 (17.4)</td>
<td>5 (11.9)</td>
<td>9 (16.4)</td>
<td>3 (12.0)</td>
<td>34 (15.3)</td>
</tr>
<tr>
<td>Total*</td>
<td>54 (100)</td>
<td>46 (100)</td>
<td>42 (100)</td>
<td>55 (100)</td>
<td>25 (100)</td>
<td>222* (100)</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

# proportions may differ from last year’s report due to updated numbers, late registrations etc

*excludes 19 which are still open coronial cases (2 from 2011 and 17 from 2012)

**Underlying cause of death by gender and Aboriginal status**

Table 24 shows the causes of death by gender and Aboriginal status for the past five years. They show a familiar picture with the main four causes of death occurring more frequently among males and among those identified as Aboriginal people.

Figures 10 and 11 show the causes of death from the ICD Chapters by gender and Aboriginal status respectively. Males dominated each of the categories of child deaths (by
about 1.5 times) except in the Symptoms, Signs Chapter. Aboriginal child deaths were over-represented by about two-fold in each of the Chapters analysed – but especially so in the ‘Symptoms, signs…’ and ‘External causes.’ Chapters.

Table 24: Underlying cause of death by ICD-10 Chapter, gender and Aboriginal status, NT, 2008-12

<table>
<thead>
<tr>
<th>ICD-10-AM Chapters</th>
<th>Female no.(%)</th>
<th>Male no.(%)</th>
<th>Aboriginal no.(%)</th>
<th>non-Aboriginal no.(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions originating in the perinatal period</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congenital malformations, deformations and chromosomal abnormalities</td>
<td>29 (42.0)</td>
<td>40 (58.0)</td>
<td>48 (69.6)</td>
<td>21 (30.4)</td>
</tr>
<tr>
<td>Symptoms, signs and abnormal findings</td>
<td>19 (55.9)</td>
<td>15 (44.1)</td>
<td>24 (70.6)</td>
<td>10 (29.4)</td>
</tr>
<tr>
<td>External causes, accidents, injuries</td>
<td>22 (34.9)</td>
<td>41 (65.1)</td>
<td>46 (73.0)</td>
<td>17 (27.0)</td>
</tr>
<tr>
<td>Other</td>
<td>12 (35.3)</td>
<td>22 (64.7)</td>
<td>24 (70.6)</td>
<td>10 (29.4)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90 (40.5)</strong></td>
<td><strong>132 (59.5)</strong></td>
<td><strong>156 (70.2)</strong></td>
<td><strong>66 (29.7)</strong></td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013

*excludes 19 which are still open coronial cases (9 are males, 10 females and 17 are Aboriginal)

Figure 10: Underlying cause of death by ICD-10 Chapter and gender, NT, 2008-12
Figure 11: Underlying cause of death by ICD-10 Chapter and Aboriginal status, NT, 2008-12

Source: NT Child Deaths Register, Aug 2013

Underlying cause of death by ‘known or not known to OCF’ status

Of the 222 child deaths with a coded cause of death, 41 were known to OCF and 181 were not known to OCF. Almost half of those known to OCF (19 or 46%) were deaths from external causes, most commonly motor vehicle related causes (9) and intentional self-harm by hanging (6). Nearly a fifth of the deaths from the ‘Symptoms, Signs ..’ Chapter (6 out of 20) were known to the OCF.

Underlying cause of death by usual residence

The causes of deaths are also presented by region to assess if there was a regional effect on different causes of deaths. As before, deaths among rural children were over represented in each of the main ICD Chapters (Table 25 and Figure 13). Almost three quarters (70%) of child deaths in the NT are not from Greater Darwin and this is reflected within each of the four main ICD Chapters (although the child population are similar in these two regions as shown in Fig 3). Most of the 19 open coronial deaths are from Greater Darwin (17), hence the proportions reported here are likely to change when these cases are finalised.
Table 25: Underlying cause of death by ICD-10 Chapter and usual residence, NT, 2008-12

<table>
<thead>
<tr>
<th>ICD-10 Chapter</th>
<th>Greater Darwin no. (%)</th>
<th>Rest of NT no. (%)</th>
<th>TOTAL no. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions originating in the Perinatal period</td>
<td>26 (37.7)</td>
<td>43 (62.3)</td>
<td>69 (100)</td>
</tr>
<tr>
<td>Congenital malformations, deformations and chromosomal abnormalities</td>
<td>6 (27.3)</td>
<td>16 (72.7)</td>
<td>22 (100)</td>
</tr>
<tr>
<td>Symptoms, signs and abnormal findings</td>
<td>9 (17.6)</td>
<td>25 (73.5)</td>
<td>34 (100)</td>
</tr>
<tr>
<td>External causes, accidents, injuries</td>
<td>16 (25.4)</td>
<td>47 (74.6)</td>
<td>63 (100)</td>
</tr>
<tr>
<td>Others</td>
<td>9 (26.4)</td>
<td>25 (73.5)</td>
<td>34 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>66 (29.7)</td>
<td>156 (70.3)</td>
<td>222 (100)</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013
*excludes 19 which are still open coronial cases (17 from Greater Darwin and 2 from Rest of NT)

Figure 12: Underlying cause of death by ICD-10 Chapter and usual residence, NT, 2008-12

Underlying cause of death by age group

Among the five ICD-10AM Chapters analysed, three Chapters include conditions that are more common among infants. The vast majority of the causes of death from ‘Conditions originating in the perinatal...’ Chapter (99%) and ‘Symptoms, signs ..’ Chapter (91%)
occurred among infants, while more than half (60%) of deaths coded within the ‘Congenital malformations’ Chapter were infants. The ‘external causes’ Chapter includes accidents and injuries and contains most of the preventable causes of death. This Chapter includes over a quarter of all child deaths (28.4%) in the NT.

As many of the child deaths that are preventable are also age dependent, analysis of cause of death by age group will be considered in greater detail (Table 24.) Table 26 shows that among the 122 infant deaths (where a cause of death was known), 56% were due to ‘Conditions arising in the perinatal period’ Chapter, followed by 17.6% from conditions within the Symptoms, signs and abnormal findings’ Chapter. Many of these are conditions arising from the perinatal period, some more delayed in their expression than others. Some of the deaths in the Symptoms, Signs..’ Chapter may similarly be delayed expressions of maternal and/or perinatal conditions that are less able to be detected clinically in the infant. But deaths such as sudden, unexpected SUDI deaths, including SIDS have, in addition, environmental components that are potentially modifiable. These deaths are the subject of ongoing research to identify the associated risk factors that can either be avoided or minimised.

Table 26: Underlying cause of death by ICD-10 Chapter and age-group, NT, 2008-12#

<table>
<thead>
<tr>
<th>ICD-10-am Coding Descriptions</th>
<th>under 1 yr (%)</th>
<th>1 to 4 yrs (%)</th>
<th>5 to 9 yrs (%)</th>
<th>10 to 14 yrs (%)</th>
<th>15 to 17 yrs (%)</th>
<th>TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions originating in the perinatal period</td>
<td>68 (55.7)</td>
<td>1 (3.4)</td>
<td></td>
<td></td>
<td></td>
<td>69 (31.1)</td>
</tr>
<tr>
<td>Congenital malformations, deformations and chromosomal abnormalities</td>
<td>13 (10.7)</td>
<td>5 (17.2)</td>
<td>1 (5.6)</td>
<td>1 (4.3)</td>
<td>2 (6.7)</td>
<td>22 (9.9)</td>
</tr>
<tr>
<td>Symptoms, signs and abnormal findings</td>
<td>31 (25.4)</td>
<td>1 (5.6)</td>
<td>1 (4.3)</td>
<td>1 (3.3)</td>
<td></td>
<td>34 (15.3)</td>
</tr>
<tr>
<td>External causes, accidents, injuries</td>
<td>3 (2.5)</td>
<td>17 (58.6)</td>
<td>7 (38.9)</td>
<td>14 (60.9)</td>
<td>22 (73.3)</td>
<td>63 (28.4)</td>
</tr>
<tr>
<td>Others</td>
<td>7 (5.7)</td>
<td>6 (20.7)</td>
<td>9 (50.0)</td>
<td>7 (30.4)</td>
<td>5 (16.7)</td>
<td>34 (15.3)</td>
</tr>
<tr>
<td>Total*</td>
<td>122 (100)</td>
<td>29 (100)</td>
<td>18 (100)</td>
<td>23 (100)</td>
<td>30 (100)</td>
<td>222* (100)</td>
</tr>
</tbody>
</table>

Source: NT Child Deaths Register, Aug 2013
# proportions may differ from last year’s report due to updated numbers, late registrations etc
*excludes 19 which are still open coronial cases (eight from < 1 year group, five from 15-17 year age group and three each from the 1–4 and 10–14 year age groups)

Figures 13 to 18 show the progression of these five main ICD-10 causes of death from infancy to the teenage years. For example, child deaths from the ‘Conditions arising in the
perinatal period’ Chapter are prominent in infancy, followed by deaths from the ‘Symptoms and Signs..’ Chapter, the latter persisting in most of the age groups examined. Similarly, deaths from ‘Congenital malformations..’ Chapter are prominent in early childhood but fade away among the older age groups. Child deaths from ‘external causes’ become prominent soon after infancy and account for nearly 60% of all deaths in the 1 to 4 year age group and over 70% of deaths in the 15 to 17 year age group children.

**Figure 13: Cause of death by ICD-10 Chapter, infants, NT, 2008-12**

![Pie chart showing cause of death by ICD-10 chapter for infants. The largest category is external causes, accidents, injuries (58.6%).](image)

**Figure 14: Cause of death by ICD-10 Chapter, 1 to 4 year-olds, NT, 2008-12**

![Pie chart showing cause of death by ICD-10 chapter for 1 to 4 year-olds. The largest category is external causes, accidents, injuries (58.6%).](image)
Figure 15: Cause of death by ICD-10 Chapter, 5 to 9 year-olds, NT, 2008-12

- External causes, accidents, injuries: 38.9%
- Others: 50%
- Congenital malformations, deformations and chromosomal abnormalities: 5.6%
- Symptoms, signs and abnormal findings: 5.6%

Figure 16: Cause of death by ICD-10 Chapter, 10 to 14 year-olds, NT, 2008-12

- External causes, accidents, injuries: 60.9%
- Others: 30.4%
- Congenital malformations, deformations and chromosomal abnormalities: 4.3%
- Symptoms, signs and abnormal findings: 4.3%
Figure 17: Cause of death by ICD-10 Chapter, 15 to 17 year-olds, NT, 2008-12

*Only proportions of ‘External Causes.’ are displayed

Source: NT Child Deaths Register, Aug 2013

Figure 18: Cause of death* by ICD-10 Chapter and age group, NT, 2008-12

Source: NT Child Deaths Register, Aug 2013

*Only proportions of ‘External Causes.’ are displayed
Causes of death in infancy that are mainly (56%) from conditions that arise in the perinatal and maternal periods of development are mainly unavoidable. A quarter of these were from infections and disorders of the main bodily systems; but another quarter (31 or 25.4%) were from unknown conditions, the sudden unexpected infant deaths SUDI, including 7 SIDS deaths.

The 1-4 year age category is probably where most of the readily preventable deaths are, as children in this age group are still dependent on their carers’ attention, and injuries are less likely to be self-inflicted. A quarter of all deaths in this age group are transport related (8 of 32 deaths) and another quarter (9 from 32) from drowning, fire, fall, suffocation etc. The remaining deaths in this age group are from conditions originating in the perinatal and maternal period.

The 5 to 9 year age group had the least number of deaths, comprising less than 10% of all child deaths. The causes of death in this age group are mainly conditions arising from the perinatal or maternal periods or from neoplasms, and the remainder are either transport-related or from assaults and exposures.

The 10 to 14 year age group is a difficult period in terms of physical and emotional development. The majority of deaths (61%) are coded to the ‘External causes and injuries’ Chapter where many transport related accidents are largely preventable. A larger group of deaths are from drowning, crocodile attacks and accidental and intentional hangings, some of which may be potentially avoidable.

The 15 to 17 year age group is another difficult period in which a third of the deaths are from intentional hanging. An equal number of deaths in this age group are transport related, mainly as a result of a car accident. The number of deaths in this age group is likely to rise when the five coronial cases in this age group are closed. Many of these deaths are potentially amenable to prevention by community-based interventions.
CHAPTER FIVE

Research and future directions

Sleep-related SUDI deaths, NT, 2006-2011

The CDRPC will be releasing a research study on sleep-related infant deaths over the past six years which will be available on the Office of Children’s Commissioner’s website (www.childrenscommissioner.nt.gov.au).

Background

In the 2011-12 Annual Report of the CDRPC, a preliminary analysis was conducted of sudden and unexpected infant deaths (SUDI) that occurred between 2006 and 2010 to highlight the high rate of occurrence of these deaths in the NT. That analysis indicated that the NT rates for SUDI was nearly 3 times greater than the reported Australian rate.

As a result of these observations the Committee conducted further study of recent trends and associated risk factors for these deaths to cover all sleep-related infant deaths in the NT. The study focused on a review of recently published and unpublished literature on this topic in the NT context - and as these deaths occurred predominantly among Aboriginal children, there was a further focus on international comparisons with Indigenous populations.

The study examined 38 infant deaths in the NT between 2006 and 2011 where the coronial findings provided the cause of death as either Sudden Infant Death Syndrome (SIDS), Sudden Unexpected Death in Infancy (SUDI), as ‘Other ill-defined and unspecified causes of mortality’, as ‘Death occurring less than 24 hours from onset of symptoms, not otherwise explained’, or as ‘Unattended death’ – all of which were among infants that occurred during sleep. The aims of the study were to:

1. explore the recent trends and methods in sleep-related infant deaths;

2. establish the existence of known risk factors for SIDS and SUDI deaths such as sleep position, breastfeeding status, smoking and/or alcohol use or misuse during or prior to the episode and other contextual elements like child protection involvement, criminal history which might be considered risk factors for suicide.

Due to the level of detail about individual cases in this analysis, the Committee determined that it would not be in the families’ interest to publicly disclose the full details of the cases. Hence the report will be released in redacted form.
Future Directions

The Committee will continue to manage and improve on the NT Child Deaths Register with timely access to information based on NT-derived data and an expansion in the range and detail of data collected.

As the largest portion of child deaths are always the infant deaths, more attention will need to be placed on examining their occurrence and distribution, especially deaths that occur in the perinatal period. The Committee has initiated this process with the use of the Perinatal Society of Australia and New Zealand (PSANZ) codes, a more appropriate method of coding these deaths in being prevention focussed rather than simply descriptive. The development of an integrated maternity service in the NT will enhance the collection of accurate data and ultimately assist in the development of preventive strategies.

Work needs to commence on translating into action ways to address the different risk factors identified in the research report undertaken this year on sleep-related infant deaths. Along with the identification of risk factors, the research was affected by high missing data rates which hampered analysis. The Committee will look at developing recommendations relating to the training and support of those in a position to record accurate data (for example attending police and emergency medical specialists) to assist with this important research.

The Committee will continue to monitor the implementation of its recommendations to address potentially preventable deaths. In particular, it is seeking a formal response from the new NT Government to the Committee recommendations on preventing child and youth suicide. It will also continue to monitor and report on the incidence of child and youth suicide in the NT as a follow-up to its research report on the subject in 2011-12.
References


Northern Territory of Australia, *Births, Deaths and Marriages Registration Act* (as in force at 1 July 2010).


APPENDIX 1
Northern Territory of Australia Care and Protection of Children Act
Part 3.3 Prevention of Child Deaths

207 Object of Part
The object of this Part is to assist in the prevention and reduction of child deaths through:

(a) maintaining a database on child deaths; and

(b) conducting research about child deaths, and diseases and accidents involving children; and

(c) the development of appropriate policy to deal with such deaths, diseases and accidents.

208 Child deaths
A child death is:

(a) the death of a child who usually resided in the Territory (whether the death occurred in the Territory or not); or

(b) a still-birth as defined in the Births, Deaths and Marriages Registration Act that occurred in the Territory.

209 Establishment of Committee

(1) There is to be a Child Deaths Review and Prevention Committee.

(2) The Committee consists of at least 10 but not more than 16 members.

(3) Each member must be:

(a) someone who has qualifications or experience relating to the functions of the Committee; and

(b) appointed by the Minister in writing for a term not exceeding 2 years.

(4) The Minister must:

(a) appoint one member to be the Convenor of the Committee; and

(b) appoint another member to be the Deputy Convenor of the Committee.

(5) At least 2 members must be Aboriginal persons.
(6) One member must be a deputy coroner nominated by the Territory Coroner for this section.

(7) A member is eligible for re-appointment.

(8) In this section:

*deputy coroner* means a deputy coroner as defined in the *Coroners Act*.

*Territory Coroner* means the Territory Coroner as defined in the *Coroners Act*.

### 210 Functions of Committee

The Committee has the following functions:

(a) to establish and maintain the Child Deaths Register;

(b) to conduct or sponsor research into child deaths, diseases and accidents involving children, and other related matters (such as childhood morbidity and mortality), whether alone or with others;

(c) to raise public awareness about a matter mentioned in paragraph (b), including, for example, any of the following:

(i) the death rate of children;

(ii) the causes and nature of child deaths and of diseases and accidents involving children;

(iii) the prevention or reduction of such deaths, diseases and accidents;

(d) to make recommendations about a matter mentioned in paragraph (b);

(e) to monitor the implementation of the recommendations;

(f) to contribute to any national database on child deaths in Australia;

(g) to enter into an arrangement for the sharing of information with anyone in Australia that has functions similar to those of the Committee;

(h) to perform any other functions relating to the object of this Part as the Minister directs.

### 211 Provision of information to Committee

(1) Any of the following persons must, on the Committee's request, give specified information to the Committee for any of its functions:

(a) the Commissioner of Police;

(b) the Registrar of Births, Deaths and Marriages;

(c) a coroner;
(d) a service provider for a protected child;
(e) a health practitioner;
(f) a person in charge of a facility for health services in which children are ordinarily patients;
(g) an operator of child-related services;
(h) an operator of children's services.

Maximum penalty: 200 penalty units or imprisonment for 2 years.

(2) It is a defence to a prosecution for an offence against subsection (1) if:
(a) the defendant has a reasonable excuse; or
(b) the Commissioner of Police certifies in writing that compliance with the request would:
   (i) prejudice the investigation of any unlawful conduct; or
   (ii) disclose a confidential source of information in relation to the administration of law; or
   (iii) prejudice the effectiveness of a method or procedure in relation to the administration of law; or
   (iv) facilitate a person's escape from lawful custody; or
   (v) endanger the safety of a person.

(3) A person acting in good faith in giving information to the Committee is not civilly or criminally liable, or in breach of any professional code of conduct, for giving the information.

212 Child Deaths Register

(1) There is to be a Child Deaths Register.

(2) The Register is a database of information concerning child deaths.

(3) Without limiting subsection (2), the Register may include information on:
   (a) incidences of child deaths; and
   (b) the causes, patterns and trends of child deaths.

213 Annual Report

(1) At the end of each financial year, the Committee must prepare a report about the operation of the Committee during that year.
The report must contain details about:

(a) the Committee’s activities during that year, including:
   (i) the development of the Register during that year; and
   (ii) any recommendations made by the Committee during that year; and
(b) the implementation during that year of any recommendations made by the Committee.

The Committee must, by 31 October following the end of that year, give the report to the Minister.

The Minister must table a copy of the report in the Legislative Assembly within 6 sitting days after receiving the report.

214 Report about research

(1) The Committee may prepare reports about research conducted or sponsored by the Committee (whether alone or with others).

(2) The Committee must give the reports to the Minister.

(3) The Minister must table a copy of each of the reports in the Legislative Assembly within 6 sitting days after receiving the report.

215 Advisors to Committee

(1) The Minister may, on the Convenor’s recommendation, appoint persons to be advisors to the Committee.

(2) The Convenor may only recommend a person who has qualifications or experience relating to:
   (a) a function of the Committee; or
   (b) health care, child development or protection, or research methodology.

(3) An advisor may be appointed for:
   (a) the duration of a project specified in the appointment; or
   (b) a term not exceeding 2 years specified in the appointment.

(4) An advisor is eligible, on the recommendation of the Convenor, for re-appointment.

(5) An advisor must assist the Committee in performing the Committee's functions as specified in the appointment.

(6) Without limiting subsection (5), the appointment may specify that the advisor must conduct specified research.
216 Deputy Convenor

The Deputy Convenor must act in the office of Convenor if:

(a) the Convenor is unable to exercise the Convenor's powers or perform the Convenor's functions; or

(b) the office of Convenor is vacant.

217 Vacation of office of member or advisor

A member or advisor vacates his or her office if:

(a) the term of the appointment of the member or advisor expires; or

(b) the member or advisor resigns the office in writing given to the Minister; or

(c) the appointment is terminated under section 218; or

(d) the member or advisor dies.

218 Termination of appointment

(1) The Minister must terminate a person's appointment as a member or advisor if:

(a) the person contravenes section 221; or

(b) for a person appointed as a member:

(i) the person has been absent (except on leave granted by the Minister) from 3 consecutive meetings of the Committee; or

(ii) the person contravenes section 220.

(2) In addition, the Minister may terminate the appointment:

(a) on the ground of misbehaviour; or

(b) on the ground the person becomes physically or mentally incapable of satisfactorily performing the duties of the appointment.

(3) Furthermore, the appointment is terminated if:

(a) the person:

(i) becomes bankrupt; or

(ii) applies to take the benefit of a law for the relief of bankrupt or insolvent debtors; or

(iii) compounds with creditors or makes an assignment of the person's remuneration for their benefit; or
(b) is found guilty by a court in the Territory of an offence punishable by imprisonment for 12 months or more; or

(c) is found guilty by a court outside the Territory of an offence which, if committed against a law of the Territory, would be an offence punishable by imprisonment for 12 months or more.

(4) A termination under subsection (1) or (2) must be by writing given to the person.

219 Meetings of Committee

(1) The Committee must meet at least 3 times in each year.

(2) In a meeting of the Committee, the number of members that is equal to half of the members plus one constitutes a quorum.

(3) A meeting of the Committee must be presided by:

   (a) the Convenor; or

   (b) in the absence of the Convenor – the Deputy Convenor; or

   (c) in the absence of both the Convenor and the Deputy Convenor – a member elected by the members present at the meeting.

220 Disclosure of interest

(1) A member who has a direct or indirect interest in a matter to be considered by the Committee must disclose the interest to the Committee.

(2) The disclosure must be recorded in the Committee's minutes.

(3) The member:

   (a) must not take Part in any deliberation or decision of the Committee about the matter; and

   (b) must be disregarded for the purposes of constituting the quorum of the Committee for the deliberation or decision.

(4) The Committee may decide subsection (3) does not apply to the matter.

(5) However, the decision must be deliberated and voted on in the absence of the member.

221 Confidential information

(1) A person who has acquired information in exercising a power or performing a function under this Part is guilty of an offence if the person:
(a) discloses the information to someone; or

(b) does something that results in disclosing the information to someone and is reckless as to whether doing the thing would result in the disclosure; or

(c) uses the information.

Maximum penalty: 200 penalty units or imprisonment for 2 years.

(2) Subsection (1) does not apply to:

(a) a disclosure or use of the information by a person in exercising a power or performing a function under this Part; or

(b) a disclosure or use of the information for any of the following purposes authorised by the Minister:

(i) research relating to the object of this Part;

(ii) an inquiry or investigation conducted by a coroner, the Police Force or another law enforcement agency;

(iii) a purpose specified by regulation; or

(c) a disclosure of the information to a court or tribunal; or

(d) a disclosure or use of the information that is otherwise required or authorised by law.

222 Review of operation of Part

(1) The Minister must conduct a review of the operation of this Part within 3 years after the commencement of this Part.

(2) The review must determine:

(a) the extent to which the operation of this Part has met the object of this Part; and

(b) whether or not any amendment to this Part should be made.
APPENDIX 2
Table of cause of child deaths by ICD-10 Chapters, NT, 2008-12

<table>
<thead>
<tr>
<th>CHAPTER 1: CERTAIN INFECTIONS AND PARASITIC DISEASES (A00 – B99)</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis due to Staphylococcus aureus</td>
<td>1</td>
</tr>
<tr>
<td>Sepsis due to Streptococcus pneumoniae</td>
<td>1</td>
</tr>
<tr>
<td>Sepsis, unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Streptococcal sepsis, unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Unspecified viral encephalitis</td>
<td>1</td>
</tr>
<tr>
<td>Whooping cough due to Bordetella pertussis</td>
<td>1</td>
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</tbody>
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<table>
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<tr>
<th>CHAPTER 2: NEOPLASMS (C00 – D48)</th>
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</thead>
<tbody>
<tr>
<td>Malignant neoplasm of brain stem</td>
<td>1</td>
</tr>
<tr>
<td>Malignant neoplasm of brain, unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Malignant neoplasm of kidney, except renal pelvis</td>
<td>1</td>
</tr>
<tr>
<td>Malignant neoplasm of ovary</td>
<td>1</td>
</tr>
<tr>
<td>Malignant neoplasm of pineal gland</td>
<td>1</td>
</tr>
<tr>
<td>Malignant neoplasm of rectum</td>
<td>1</td>
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<tr>
<td>Malignant neoplasm of submandibular gland</td>
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<tr>
<th>CHAPTER 4: ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES (E00 – E90)</th>
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<tbody>
<tr>
<td>Organ-limited amyloidosis</td>
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<tr>
<td>Volume depletion</td>
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<thead>
<tr>
<th>CHAPTER 6: DISEASES OF THE NERVOUS SYSTEM (G00 – G99)</th>
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<tbody>
<tr>
<td>Cerebral palsy, unspecified</td>
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<tr>
<td>Dysskinetic cerebral palsy</td>
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</tr>
<tr>
<td>Localisation-related (focal)(partial) idiopathic epilepsy and epileptic syndromes with seizures of localised onset, without mention of intractable epilepsy</td>
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</tr>
<tr>
<td>Muscular dystrophy</td>
<td>2</td>
</tr>
<tr>
<td>Sequelae of inflammatory diseases of central nervous system</td>
<td>1</td>
</tr>
<tr>
<td>Spastic cerebral palsy, unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Spastic quadriplegic cerebral palsy</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>CHAPTER 11: DISEASES OF THE CIRCULATORY SYSTEM (I00 – I99)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Acute rheumatic heart disease, unspecified</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 10: DISEASES OF THE RESPIRATORY SYSTEM (J00 – 99)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Acute bronchiolitis, unspecified</td>
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</tr>
<tr>
<td>Bronchiectasis</td>
<td>1</td>
</tr>
</tbody>
</table>
Other chronic suppurative otitis media 1
Respiratory disorder, unspecified 1
Viral pneumonia, unspecified 2

CHAPTER 11: DISEASES OF THE DIGESTIVE SYSTEM (K00 – K99) 1
Acute appendicitis with generalised peritonitis 1

CHAPTER 16: CERTAIN CONDITIONS ORIGINATING IN THE
PERINATAL PERIOD (P00 – P96) 69
Bacterial sepsis of newborn, unspecified 2
Chronic neonatal lung disease 1
Congenital cytomegalovirus infection 1
Disseminated intravascular coagulation of fetus and newborn 1
Extreme immaturity, 24 or more completed weeks but less than 28 completed weeks 3
Extreme immaturity, less than 24 completed weeks 8
Extremely low birth weight 499g or less 3
Extremely low birth weight 750 - 999g 1
Fetal blood loss from vasa praevia 1
Fetus and newborn affected by chorioamnionitis 9
Fetus and newborn affected by incompetent cervix 3
Fetus and newborn affected by maternal hypertensive disorders 1
Fetus and newborn affected by other maternal conditions 1
Fetus and newborn affected by other specified complications of labour and delivery 5
Fetus and newborn affected by premature rupture of membranes 6
Hypoxic ischaemic encephalopathy [HIE] of newborn 1
Intracerebral (nontraumatic) haemorrhage of fetus and newborn 2
Intraventricular (nontraumatic) haemorrhage, grade 3, of fetus and newborn 1
Invasive neonatal candidiasis 1
Necrotising enterocolitis of fetus and newborn 4
Other specified conditions originating in the perinatal period 2
Perinatal intestinal perforation 1
Prematurity, unspecified 2
Respiratory distress syndrome of newborn 2
Sepsis of newborn due to streptococcus, group B 1
Severe birth asphyxia 1
Unspecified intraventricular (nontraumatic) haemorrhage of fetus and newborn 4
Unspecified pulmonary haemorrhage originating in the perinatal period 1

CHAPTER 17: CONGENITAL MALFORMATIONS,
DEFORMATIONS AND CHROMOSOMAL ABNORMALITIES
(Q00 – Q99) 22
Aortopulmonary septal defect 1
Congenital malformation, unspecified 1
Down’s syndrome, unspecified 1
<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edwards’ syndrome, unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Gastroschisis</td>
<td>1</td>
</tr>
<tr>
<td>Hydranencephaly</td>
<td>1</td>
</tr>
<tr>
<td>Hypoplasia and dysplasia of lung</td>
<td>1</td>
</tr>
<tr>
<td>Hypoplastic left heart syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Interrupted aortic arch</td>
<td>1</td>
</tr>
<tr>
<td>Microcephaly</td>
<td>1</td>
</tr>
<tr>
<td>Other specified congenital malformation syndromes, not elsewhere classified</td>
<td>1</td>
</tr>
<tr>
<td>Other specified congenital malformations of brain</td>
<td>2</td>
</tr>
<tr>
<td>Other specified congenital malformations of intestine</td>
<td>1</td>
</tr>
<tr>
<td>Other specified trisomies and partial trisomies of autosomes</td>
<td>1</td>
</tr>
<tr>
<td>Pierre Robin sequence</td>
<td>1</td>
</tr>
<tr>
<td>Sirenomelia syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Tetralogy of Fallot</td>
<td>1</td>
</tr>
<tr>
<td>Total anomalous pulmonary venous connection</td>
<td>1</td>
</tr>
<tr>
<td>Transposition of great vessels, complete</td>
<td>1</td>
</tr>
<tr>
<td>Tuberous sclerosis</td>
<td>2</td>
</tr>
</tbody>
</table>

**CHAPTER 18: SYMPTOMS, SIGNS AND ABNORMAL CLINICAL AND LABORATORY FINDINGS, NOT ELSEWHERE CLASSIFIED (R00 – R99)**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death occurring less than 24 hours from onset of symptoms, not otherwise explained</td>
<td>2</td>
</tr>
<tr>
<td>Other ill-defined and unspecified causes of mortality</td>
<td>24</td>
</tr>
<tr>
<td>Sudden Infant Death Syndrome, SIDS</td>
<td>7</td>
</tr>
<tr>
<td>Unattended death</td>
<td>1</td>
</tr>
</tbody>
</table>

**CHAPTER 19: INJURY, POISONING AND CERTAIN OTHER CONSEQUENCES OF EXTERNAL CAUSES (S00 – T98)**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open wound of thigh</td>
<td>1</td>
</tr>
<tr>
<td>Asphyxiation</td>
<td>1</td>
</tr>
</tbody>
</table>

**CHAPTER 20: EXTERNAL CAUSES – TRANSPORT ACCIDENTS (V00 –V99)**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car occupant injured in collision with car, pick-up truck or van, traffic accident, passenger, sedan</td>
<td>1</td>
</tr>
<tr>
<td>Car occupant injured in collision with fixed or stationary object, passenger, traffic accident, all-terrain four-wheel drive</td>
<td>2</td>
</tr>
<tr>
<td>Car occupant injured in collision with fixed or stationary object, passenger, traffic accident, sedan</td>
<td>1</td>
</tr>
<tr>
<td>Car occupant injured in collision with pedestrian or animal, passenger, traffic accident, all-terrain four-wheel drive</td>
<td>1</td>
</tr>
<tr>
<td>Car occupant injured in non-collision transport accident, driver, traffic accident, all-terrain four-wheel drive</td>
<td>1</td>
</tr>
<tr>
<td>Car occupant injured in non-collision transport accident, passenger, sedan</td>
<td>2</td>
</tr>
<tr>
<td>Car occupant injured in non-collision transport accident, passenger, traffic accident, all-terrain four-wheel drive</td>
<td>2</td>
</tr>
<tr>
<td>Car occupant injured in non-collision transport accident, passenger, traffic accident, sedan</td>
<td>3</td>
</tr>
<tr>
<td>Car occupant injured in non-collision transport accident, passenger,</td>
<td>1</td>
</tr>
</tbody>
</table>
traffic accident, unspecified car [automobile]
Driver of all-terrain or other off-road motor vehicle injured in non-traffic accident, four-wheeled special all-terrain or other off-road motor vehicle 1
Occupant [any] of heavy transport vehicle injured in other specified transport accidents 1
Occupant of pick-up truck or van injured in non-collision transport accident, driver, traffic accident 1
Other and unspecified water transport accidents, other powered watercraft 1
Pedestrian injured in collision with car, pick-up truck or van, non-traffic accident 2
Pedestrian injured in collision with car, pick-up truck or van, traffic accident 3
Pedestrian injured in collision with heavy transport vehicle or bus, non-traffic 1

CHAPTER 20: EXTERNAL CAUSES - OTHER EXTERNAL CAUSES OF ACCIDENTAL INJURY (W00 – Y98)

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidental suffocation and strangulation in bed</td>
<td>1</td>
</tr>
<tr>
<td>Bitten or struck by crocodile or alligator</td>
<td>2</td>
</tr>
<tr>
<td>Drowning and submersion following fall into swimming-pool</td>
<td>1</td>
</tr>
<tr>
<td>Drowning and submersion while in natural water</td>
<td>1</td>
</tr>
<tr>
<td>Drowning and submersion while in swimming-pool</td>
<td>2</td>
</tr>
<tr>
<td>Fall involving cot</td>
<td>1</td>
</tr>
<tr>
<td>Other accidental hanging and strangulation</td>
<td>2</td>
</tr>
<tr>
<td>Other specified drowning and submersion</td>
<td>2</td>
</tr>
<tr>
<td>Unspecified threat to breathing</td>
<td>1</td>
</tr>
<tr>
<td>Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours</td>
<td>1</td>
</tr>
<tr>
<td>Assault by hanging, strangulation and suffocation, parent</td>
<td>2</td>
</tr>
<tr>
<td>Assault by smoke, fire and flames, unspecified person</td>
<td>1</td>
</tr>
<tr>
<td>Exposure to excessive natural heat</td>
<td>1</td>
</tr>
<tr>
<td>Exposure to uncontrolled fire in building or structure</td>
<td>1</td>
</tr>
<tr>
<td>Exposure to unspecified factor</td>
<td>3</td>
</tr>
<tr>
<td>Intentional self-harm by hanging</td>
<td>12</td>
</tr>
<tr>
<td>Contact with blunt object, undetermined intent</td>
<td>1</td>
</tr>
<tr>
<td>Hanging, strangulation and suffocation, undetermined Intent</td>
<td>2</td>
</tr>
</tbody>
</table>

OPEN 19

Grand Total 241
APPENDIX 3
The historical context of NT data on child deaths

The Committee holds child death data from 2006, so to provide a historical and national context it is necessary to draw data from other sources such as the ABS and Health Gains Planning Branch in the Department of Health, NT. In presenting this data it allows the Committee’s data to be placed in a longer term perspective. This allows additional meaningful conclusions regarding the more recent trends of child death rates.

In terms of population, the NT is the smallest Australian jurisdiction, with an estimated 2011 population of 229,675. This represents around 1% of the Australian total. The NT has the youngest population in Australia with an average age of 31.3 years. The NT child population represents 27% (63,049) of the total population. Approximately 30% of the total NT population and 43% of the NT child population are Aboriginal Australians (ABS, 2009 & 2010a). The Aboriginal population of the NT (estimated at 68,661 for 2010) is around 12% of the national total Aboriginal and Torres Strait Islander population (ABS, 2009).

For children aged 1-17 years, NT death rates have decreased by approximately 90% during the 40 year period from 1967 to 2006. The relative Australian rate decreased by approximately 70%. Even though there has been a larger decrease over this period the Aboriginal rates, particularly Aboriginal females in recent times, remain well above the Australian rate. The NT non-Aboriginal rate has been similar to Australian rates during the last 20 years for both males and females.
Mortality rates of children aged 1–17 years by gender and Aboriginal status, NT and Australia, 1967–2006

Source: Health Gains Planning