Office of
The Children's Commissioner
NORTHERN TERRITORY

Annual Report 2009-2010

NT Child Deaths Review and Prevention Committee

NT Child Deaths Review and Prevention Committee

The NT Child Deaths Review and Prevention Committee respect the beliefs of Aboriginal people and advise there is information in this report regarding deceased Aboriginal people.

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The Honourable Konstantine Vatskalis, MLA
Minister for Child Protection
Parliament House
DARWIN NT 0801

Dear Minister Vatskalis

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.

The Report contains information on the activities of the Committee throughout this reporting period as well as the provision of infant and child death data from the 2009 calendar year as well as the three preceding years, 2006-2008. Some data from external research on child deaths in the NT is also cited to provide an historical context.

Yours sincerely,

Howard Bath
Convenor
NT Child Deaths Review and Prevention Committee

29 October 2010

NT Child Deaths Review and Prevention Committee
Annual Report 2008-2009

NT Child Deaths Review and Prevention Committee

Current Members as at 30 June 2010

Dr Howard Bath
Convenor, NT Child Deaths Review and Prevention Committee
Children's Commissioner, Office of the Children's Commissioner NT
Expertise in child protection, children with special needs, and research

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

Associate Professor Fiona Arney
Head of Child Protection Research, Menzies School of Health Research NT
Expertise in child protection and parenting research and child welfare policy

Ms Stephanie Bell
Director, Central Australian Aboriginal Congress Incorporated, Alice Springs NT
Expertise in Aboriginal primary health care, health service delivery, systems and planning

Mr Joseph Daby
Senior Aboriginal Health Worker, Child and Youth Health
Top End Health Development, Department of Health and Families NT
Expertise in Indigenous health issues

Mrs Lorraine Evans
Principal, Nightcliff Middle School, Department of Education and Training NT
Expertise in child protection, education, especially in primary and middle school settings

Dr Steven Guthridge
Director, Health Gains Planning, Department of Health and Families NT
Expertise in statistical analysis and reporting

Commander Colleen Gwynne
Ethical & Professional Standards Command, NT Police, Fire and Emergency Services
Expertise investigating and managing crimes against children

Mr Allan Joy
Acting Senior Director, Care and Protection Services, NT Families and Children, Department of Health and Families NT
Expertise in child protection operations, policy and service development

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

Dr Barbara Paterson
Chief Health Officer and Executive Director for Health Protection, Department of Health and Families NT, Public Health Physician
Expertise in maternal and child health

Associate Professor Robert Parker
Director of Psychiatry, Top End Mental Services, Department of Health and Families NT
Expertise in Indigenous mental health and suicide in the NT

Dr Jo Wright
Chief Rural Medical Practitioner for Remote Health, Department of Health and Families NT
Expertise in remote primary health care, health information systems and public health

Past Members

Ms Barbara Henry
Manager, Office of Indigenous Affairs, Department of the Chief Minister NT
Expertise in Indigenous Policy

Dr Celia Kemp
Deputy Coroner, Office of the Coroner NT
Expertise in medicine, criminal and coronial law, and the investigation of unexpected death

Professor Steven Larkin
Professor Vice-Chancellor Indigenous Leadership, Charles Darwin University, Casuarina Campus NT
Expertise in Indigenous health policy and child protection

Dr Clare MacVicar
Paediatrician, Remote Health, Department of Health and Families NT
Expertise in public health and child health issues

Professor Frank Plani
Trauma Consultation, National Critical Care and Trauma Response, Royal Darwin Hospital, Department of Health and Families NT
Expertise in Trauma and Critical Care, and Surgical Emergencies

Associate Professor Adam Tomison
Deputy Convenor, NT Child Deaths Review and Prevention Committee
Head of Child Protection Program, Menzies School of Health Research NT
Expertise in child abuse prevention, child protection systems including policy and system reform, family violence and child welfare/family support

Secretariat

Ms Hilary Berry

Ms Lisa Cooper

Ms Helena Gibbons

Mr Adam Harwood

Glossary of Terms

ABS	Australian Bureau of Statistics
AIFS	Australian Institute of Family Studies
AIHW	Australian Institute of Health and Welfare
Act	*Care and Protection of Children Act 2007*
ANZCDRPG	Australian and New Zealand Child Death Review and Prevention Group
BDM	Registry of Births, Deaths and Marriages, Northern Territory
CDRPC	Child Deaths Review and Prevention Committee
COD	Cause of Death
Committee	Child Deaths Review and Prevention Committee
Coroner	Northern Territory Coroner
DHF	Department of Health and Families
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 Coroners Information System
NSW	New South Wales
NSW CDRT	New South Wales Child Death Review Team
NT	Northern Territory
PC	Productivity Commission, Australian Government
Qld	Queensland
Register	Child Deaths Register
SUDI	Sudden Unexpected Death in Infancy
UCOD	Underlying Cause of Death

Definitions

Aboriginal

There are numerous state and territory agencies, as well as national institutions, that manage, analyse and report on demographic data, including the Australian Institute of Health and Welfare (AIHW), the Australian Institute of Family Studies (AIFS), the Productivity Commission (PC), and the Australian Bureau of Statistics (ABS). Amongst these organisations there is little consistency in the usage of terms and categories, particularly with respect to terms used for *Indigenous* or *Aboriginal Australians*, with differences being apparent even amongst government agencies in the same jurisdiction.

Although the term *Indigenous Australians* is frequently used to describe people of either *Aboriginal* or *Torres Strait Islander* descent, some organisations use the two separate categories whilst others combine them as *Aboriginal/Torres Strait Islander*.

For purposes of consistency, the *Child Deaths Review and Prevention Committee* resolved to use the definition provided in the *Care and Protection of Children Act*, which sets out provisions for the Committee. In Part 1.4, section 13 of the Act, the following definition is provided for the term 'Aboriginal':

Aboriginal means:

(a) a descendant of the Aboriginal people of Australia; or

(b) a descendant of the indigenous inhabitants of the Torres Strait Islands

Throughout this Report the term *Aboriginal* will therefore 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, those from the ABS which often use 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 any such injuries.[1]

Child

Part 1.4, section 13 of the Act defines 'child' as:

(a) a person less than 18 years of age; or

(b) a person apparently less than 18 years of age if the person's age cannot be proved.

[1] World Health Organisation (2008), ICD-10 International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Volume 2 Instruction Manual, 33-34.

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 still-birth as defined in the *Births, Deaths and Marriages Registration Act* that occurred in the Territory.

Congenital Malformations

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

Infancy

The infancy period extends from birth to 12 months of age. An **Infant Death** is the death of a liveborn 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 liveborn 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 foetal (*sic*) or neonatal death of at least 20 weeks gestation or at least 400 grams birthweight.[3]

Stillbirth (Fetal Death)

Death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400 grams or more birth weight. The death is indicated by the fact that after such separation the foetus (*sic*) does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.[3]

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.[4]

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[2] Abeywardana, S. & Sullivan, E.A. (2008). Congenital anomalies in Australia 2002–2003. Birth anomalies series no. 3 Cat. no. PER 41. Sydney: Australian Institute of Health and Welfare National Perinatal Statistics Unit.

[3] Laws, P.J. & Hilder, L. (2008). Australia's mothers and babies 2006. Perinatal statistics series no. 22.Cat. no. PER 46. Sydney: Australian Institute of Health and Welfare National Perinatal Statistics Unit

[4] World Health Organisation (2008), ICD-10 International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Volume 2 Instruction Manual, 33-34.

Foreword

This is the second Annual Report of the Northern Territory (NT) *Child Deaths Review and Prevention Committee (*CDRPC*)*. This Report provides information held by the Committee on the 46 deaths of children, who were NT residents, and 37 stillbirths that occurred in 2009. The report also includes the Committee's information on child deaths and stillbirths from 2006 to 2008 with additional information from other sources for comparative and historical purposes.

The death of any child is a tragedy and the members of the NT *Child Deaths Review and Prevention Committee* would like to extend their sincere condolences to the families, friends and communities of the children and young people cited in this Report. The Committee hopes that by highlighting and understanding the circumstances of a child's death we can learn and develop new initiatives to prevent these deaths from occurring thus saving other families and communities the grief that accompanies such tragic events.

Since last year's Report the Committee has been focused on continuing to develop the Child Deaths Register and establishing more robust relationships with key stakeholders. This year's Report includes ICD-10 AM classified cause of death data and analysis for all child deaths occurring in the periods 2006-2009. The provision of this information will assist in the future direction of the Committee in terms of research sponsorship and to make considered and appropriate recommendations to Government. It will also assist in raising public awareness and understanding of the causes of child deaths in the Northern Territory.

This Report also highlights the Committee's co-sponsorship of research regarding Aboriginal fetal and infant death rates. It also covers a preliminary comparative analysis on hanging deaths that provides the basis for possible future research regarding this issue.

On behalf of the Committee, I would like to thank the agencies and individuals across the Northern Territory who have provided assistance in the preparation of this Report.

Howard Bath
Convenor
NT Child Deaths Review and Prevention Committee

29 October 2010

Executive Summary

Background and Overview of the Committee Activities

This is the second Annual Report of the Northern Territory *Child Deaths Review and Prevention Committee*. The Committee was established pursuant to Part 3.3 of the *Care and Protection of Children Act*. The purpose of the child death review process is to assist in the prevention and reduction of child deaths.

The primary object of the Committee 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

Details of the Committee's functions are also set out in the Act.

The Committee has been continuing its work improving internal policy and procedures regarding the provision and use of sensitive information it holds. It is also committed to strengthening relationships it has with key stakeholders.

Research has been undertaken in partnership with DHF regarding Aboriginal fetal and infant death rates; the outcomes of which should influence future policy directions for the Committee. Likewise, a preliminary comparative analysis on hanging deaths provides impetus for future policy and research direction.

The Child Deaths Register

As outlined in Chapter 2, the Committee has continued its focus on developing the Child Deaths Register. Work has progressed to develop an NT database that included obtaining another jurisdiction's database and attempting to adapt it to the NT context. This was problematic for a number of reasons and the Committee decided to establish its own database using specifications designed in conjunction with an IT consultant. The Committee hopes to have completed this task in the near future.

This year the Underlying Causes of Death and Causes of Death have been coded to the International Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modified (ICD-10 AM) for the years 2006-2009, by coders from the National Centre for Health Information Research and Training (NCHIRT).

Data provided in last year's Report, based on the Child Deaths Register, has been amended slightly due to the Committee's validation and review process. This data is also affected by late registrations on the NT Births, Deaths and Marriages (BDM) Registry and collection from interstate BDM Registers.

The Committee is part of the Australian and New Zealand Child Death Review and Prevention Group (ANZCDRPG) and, within that group, has been contributing to discussions related to national reform agenda issues such as cross-border information sharing and a national collection of child deaths data.

Sources of Data on Child Deaths

Chapter 3 of the Report looks at 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), as well as the National Coroner's Information System (NCIS), each of which provides data on child deaths. The primary source of data on child deaths is the NT BDM Registry, which also has a database of stillbirths in the NT. Other sources such as medical records from health facilities and investigative files from the Territory Coroner provide additional detail surrounding individual deaths.

Other issues relating to the analysis of child deaths data include:

- the difference between actual date of death and date of death registration which can occur some time later (the former will be used by the Committee)
- the delays of findings for deaths investigated by the Coroner (this usually affects the deaths for the most recent year)
- the need for analyses to explore causes of death that go beyond the data supplied by the NT BDM Registry and other data sources such as socio-economic factors, and
- the attempts by the Committee to canvas all other jurisdictions to obtain data on child deaths who were NT residents.

The Historical and National Context of NT Data on Child Deaths

Chapter 4 explores both the historical and national context of child deaths data in the NT, including national trends and relevant NT data, to provide a better perspective on the data provided by the Committee in Chapter 5. There is a particular focus on infant (first year of life), fetal, neonatal (first four weeks of life) deaths and the perinatal period (fetal plus neonatal deaths) as a majority of child deaths occur in these periods. A number of data tables are presented which reveal high infant and child death rates in the NT when compared to other jurisdictions and the Australian averages. Notwithstanding these differences, trends over time reveal that both infant and child death rates have been declining in the NT and across Australia.

A consistent finding is that Aboriginal infants and children are at greater risk of dying than their non-Aboriginal counterparts. Data available also reveals that Aboriginal infants and children in the NT have higher death rates than Aboriginal infants and children in other Australian jurisdictions.

Child Deaths in the NT 2006-2009

Chapter 5 of this Report details and analyses the child deaths data captured by the Committee. This year's Report also includes cause of death data relating to these child deaths.

2009 Snapshot

- 46 NT resident child deaths were registered either in the NT or other jurisdictions: (28 (61%) males, 18 (39%) females, 31 (67%) Aboriginal, 15 (33%) non-Aboriginal).
- There were 26 infant deaths that represented 57% of all child deaths.

- In addition, 37 stillbirths were registered and occurred in the NT: (19 (51%) males, 17 (46%) females, 1 (3%) unknown, 22 (59%) Aboriginal, 15 (41%) non-Aboriginal).
- There were 18 NT neonatal deaths: (13 (70%) Aboriginal, 5 (30%) non-Aboriginal) and 55 NT perinatal deaths: (35 (65%) Aboriginal, 20 (35%) non-Aboriginal that were registered either in the NT or other jurisdictions.

2006-2009 Aggregate Snapshot

- Over four years there were 204 NT resident child deaths registered in the NT or other jurisdictions: (115 (57%) males, 88 (43%) females, 150 (74%) Aboriginal, 53 (26%) non-Aboriginal).
- There were 117 infant deaths that were 57% of all child deaths.
- Aboriginal and non-Aboriginal NT child death rates were 139 and 39 per 100,000 respectively and a combined rate of 82.
- Aboriginal and non-Aboriginal infant death rates were 13.3 and 3.7 per 1,000 live births respectively and a combined rate of 7.7.
- The leading Underlying Causes of Death (UCOD) in NT children were Perinatal Conditions (32%), External Causes (26%) and Congenital Malformations (11%).
- 140 stillbirths were registered and occurred in the NT: (64 (46%) males, 73 (51%) females, 3 (2%) unknown, 93 (66%) Aboriginal, 47 (34%) non-Aboriginal).
- There was a total of 77 NT neonatal deaths: (54 (70%) Aboriginal, 23 (30%) non-Aboriginal) and 217 NT perinatal deaths: (147 (68%) Aboriginal, 70 (32%) non-Aboriginal) that were registered either in the NT or other jurisdictions.

Research

Chapter 6 of this Report provides details on CDRPC's research activities. The Committee, along with Health Gains Planning (HGP) branch of the Department of Health and Families (DHF), has undertaken the co-sponsorship of research into Aboriginal fetal and infant deaths. The main focus of the research is to explore whether the reduction in Aboriginal fetal deaths has contributed to the lack of reduction in Aboriginal infant deaths. The Committee will provide HGP with its perinatal information to assist with the research.

A preliminary comparative analysis was conducted on hanging deaths in the NT, Qld and NSW, due to the high numbers of these deaths observed by the Committee. The analysis indicated that the rate in the NT is 5 times and up to 13 times higher compared to Qld and NSW respectively. This analysis will provide a focus for research by the Committee.

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. Death rates for children in the NT are high in comparison with the other states and territories, in particular, infant death rates.
2. About 43% of all NT children are Aboriginal but represent around 73% of the child deaths. Aboriginal children are 3.5 times more likely to die during childhood.
3. The leading Underlying Causes of Death in the 2006-2009 period were Perinatal Conditions (32%), External Causes (26%) and Congenital Malformations (11%). Perinatal Conditions and Congenital Malformations were the underlying causes for a

large proportion of infant deaths, while deaths from External Causes occurred almost exclusively in the 10 to 17 years age range.

4. In the 2006-2008 period, 15 child deaths resulted from intentional self-harm. All these children were Aboriginal and all but one of these events was the result of hanging. The rates of hanging during this period were at least 5 times and up to 13 times higher than reported for NSW and Qld respectively.

These standout findings clearly call for urgent research and action and will help to determine the research agenda of the Committee in coming years.

Chapter 1

Overview of the Northern Territory Child Deaths Review and Prevention Committee

Background

In recent years the Northern Territory Government has undergone substantial reform in the fields of child protection and community services. A key element of child protection reform has been the introduction of the new *Care and Protection of Children Act* (the Act), the objectives of which are "to promote the wellbeing of children" including "to protect them from harm and exploitation" and to "maximise the opportunities for children to realise their full potential".[5] This reform agenda culminated in the 2006 Board of Inquiry into the Protection of Aboriginal Children from Sexual Abuse, and the subsequent report published on 15 June 2007 titled '*Little Children are Sacred*'.

The Act was passed by the Northern Territory Legislative Assembly in November 2007 and contains provisions relating to the prevention of child deaths. The objective of these provisions is to assist in the prevention and reduction of all child deaths in the NT, up to the age of 18 years, including stillbirths. When the provisions relating to the Committee were introduced to Parliament, the then Minister for Family and Community Services stated *"The Territory has a high incidence of injury to children and a high infant mortality rate. This new measure provides a focal point for continuing attention to be paid to reducing these rates and to raising public awareness about the issues."*

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 recent response to these tragedies, both nationally and internationally, has been the establishment of committees tasked with the review of child deaths within their respective jurisdictions. The scope of these committees varies from state to state and country to country, however each has the common goal of seeking to better understand how and why children die and to initiate action designed to prevent the deaths of other children where this is possible.

Each Australian state and territory now has processes in place for reviewing the deaths of children, however, the composition of the various review committees differ as does their scope, process and reporting requirements. The Northern Territory was the last Australian jurisdiction to establish a child deaths review process and the legislative basis for the work of this Committee is outlined below.

As discussed in Chapter 4, the Northern Territory lags behind other Australian jurisdictions with respect to the majority of infant and child health indicators and the existing data also suggest that death rates follow a similar pattern. Of particular concern are the health indicators and death rates for Aboriginal children which are considerably greater than those for their non-Aboriginal counterparts. There is however some cause for optimism in that the death rates for both Aboriginal and non-Aboriginal infants and children have been improving over the past two decades.

[5] Care and Protection of Children Act, Part 1.2, section 4.

The Committee will have the ability to look at infant and child deaths in more depth, on a case by case basis, however the focus will be looking at trends and patterns on an aggregated basis by cause or type of death. These perspectives will allow it to interrogate in greater detail the factors behind deaths and death rates. With the expertise and experience of its members from different disciplines and occupations in the field of child health and wellbeing, the Committee will have the capacity to provide for the broader community some answers to the 'what', 'how' and 'why' questions and to make recommendations on how to reduce or prevent such deaths in the future.

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 Act (see Appendix 1 page 53).

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

The secretariat functions of the Committee are provided by the Office of the Children's Commissioner. When the Children's Commissioner, Dr Howard Bath, was appointed in late June 2008, the Minister for Child Protection, the Honourable Malarndirri McCarthy MLA, determined that he also would be appointed as Convenor 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, and comprised as at 30 June 2010, 13 senior representatives from government and independent agencies with expertise in the areas of health care (hospital and community based care, including representation from the urban and remote centres of the NT), child development and child protection, education, police, epidemiology and research. The Act requires that at least two members of the Committee be Aboriginal persons, that a Deputy Coroner is to be a member of the Committee and it provides for the appointment of both a Convenor and a Deputy Convenor. The Committee meets these legislative requirements. The appointment of a new Deputy Convenor has taken place this reporting year with Ms Kathryn Ganley assuming that role.

Membership of the Committee is by Ministerial appointment, for a period of up to two years. The appointment of the original Committee members commenced as of 2 February 2009. Subsequent members have all been appointed for two year terms.

In the Committee's inaugural year there was only one resignation from the Committee. However, this reporting year the Committee has experienced a greater membership turnover. In total six appointees are no longer members of the Committee mainly due to taking on other commitments interstate. This, however unfortunate, was unavoidable and is known to occur in the Northern Territory because of the transient nature of the population. Vacated memberships have been either filled by new members or are in the process of being filled.

Activities of the Committee

Statutory Requirements

The Committee is required by the Act to conduct at least three meetings a year. The Committee held its first meeting for this reporting year on 18 August 2009 however, it was only informal in nature. A teleconference meeting was held on 4 September 2009. A further two in-person meetings were held on 30 March 2010 and 8 June 2010. By conducting three formal meetings this reporting year, the Committee has fulfilled its statutory requirements under the Act.

Continued Development of the Child Deaths Register

One of the main statutory functions of the Committee is the development of a Child Deaths Register, which is a database that will contain information relating to child deaths. This may include information relating to children who have died, as well as the immediate causes and background factors that may have contributed to their deaths.

The Committee has been undertaking continual work and made progress in relation to the structure that the Child Deaths Register should take. The Committee has engaged the services of an IT consultant to draft the specifications for the database that is going to be used as the Child Deaths Register. Chapter 2 of this Report outlines in detail some of the

complex issues faced by the Committee with respect to the ongoing development of the database.

Internal Policies and Procedures

Policies have been developed in relation to the practices and procedures to be adhered to when dealing with highly sensitive information, which the Committee regularly deals with as it performs its functions. The Committee is bound by the provisions of the *Information Act* and must ensure that the information that it handles, uses, and/or discloses is done so consistently with that Act so that an individuals' privacy is not breached. The privacy policies developed by the Committee and the existing manual for NT Board Membership provides a guide and forms a consistent basis for the conduct of the Committee and reinforces and complements the Committee's obligations under the *Information Act*.

Building Relationships

The Committee has continued its work in developing more robust working relationships with government agencies such as the NT Births, Deaths and Marriages (BDM), registry, the Territory Coroner's office, hospitals interstate and intrastate and health clinics within the NT, both public and private, who play integral parts in providing on-going data and information which maintains and improves the validity of the Child Deaths Register. The Committee recognises that without the support of these entities it would not be possible to carry out one of the core functions of the Committee.

Research and Comparative Analysis

The Committee has undertaken the task of co-sponsoring research into Aboriginal fetal and infant death rates in partnership with DHF. The aim of the research is to improve the long term trending of these death rates and also explore whether the reduction in Aboriginal fetal deaths has contributed to the lack of reduction in Aboriginal infant deaths. Along with this research the Committee has conducted a preliminary comparative analysis into child deaths with the cause of death being as a result of hanging. Statistics regarding this cause of death were taken from the Committee's interim Child Deaths Register and compared to other jurisdictions that keep similar data. The results indicated a disproportionate number of NT child deaths as a result of hanging when compared to NSW and Qld. Both of these undertakings are covered more comprehensively in Chapter 6.

Chapter 2

Data Collection and the Development of a Child Deaths Register

Under the Act, the Committee has a statutory requirement to develop and maintain a Register of all deaths of children and young people under the age of 18 years whose usual place of residence is the NT.

The Register will be a database based on data from the NT BDM Registry. This data includes demographic information relating to 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, and causes of death.

This reporting year the Committee has focused through the ongoing work of its sub-committee to develop a database which meets the unique requirements of the Northern Territory. A major challenge for the Committee is the development of a database that contains information that is comparable to that maintained by other Australian jurisdictions, is flexible enough to incorporate future changes that may be required after national data coding initiatives, and that captures all the pertinent information required in the NT context.

In 2008, the NSW Child Death Review Team (NSW CDRT) provided the Committee with a de-populated copy of their Child Death Register to use as a reference for the development of the NT Child Deaths Register. The NSW CDRT has used its register since 1996 and it records data relating to the registered deaths of all children and young people aged 0-17 years. The data includes date of birth, date of death, date of death registration, age, sex, Aboriginal and Torres Strait Islander status, causes of death as noted on the death certificate, place and country of birth, usual residence, and parents' names and occupations. It also provides for the collection of other information that might help with understanding the underlying causes of the deaths. This additional information includes data fields for factors such as socio-economic classification of family location, whether the family was known to child protection services, drug and/or alcohol use by the parents, and relevant medical history of the mother. The database also provides scope for a detailed analysis of specific categories of death, such as accidental injury, by capturing data on type and level of supervision provided prior to the death.

The Committee would like to express its gratitude for the NSW CDRT for providing its Child Death Register. Whilst many of the attributes of the NSW Register were relevant to the NT, there were a number of areas where the specific needs of the NT were not adequately covered. These differences focused mainly on the high NT Aboriginal population and the cultural nuances associated with this population group such as language, family hierarchy, groupings and names that would not be compatible with the data fields present in the NSW register.

Another NT issue relates to addresses many Aboriginal communities. In both urban and remote communities addresses are noted as a house number within a stated community rather than a standard address based on house and street number, suburb and town. Some Aboriginal people move frequently between relatives and around their traditional homelands and may be of no fixed address, whilst there are other people, particularly around urban areas, who do not have any fixed abode. These issues present challenges for data collection systems.

The Committee, along with the sub-committee, determined that a new database would need to be developed for future use. In the meantime, the Committee's secretariat has built and

maintained an interim Child Deaths Register to fulfil the Committee's statutory requirements. The Committee commissioned a private entity to establish a specifications report and database architecture relevant to the NT's Child Death Register's specific needs. This has been completed however, there are minor issues that the Committee are still considering regarding the structure of the database. Preliminary estimates have also been formulated to construct this database and negotiations have begun with Government to fund this one off cost. Even though establishment of the permanent Child Deaths Register is taking longer than the initial projections, the Committee understands the potential cost associated in developing this database. It is therefore determined to thoroughly canvas all apparent issues with the database before committing to a particular model, in order to minimise any potential amendments to the architecture of the Register that would bear future costs. The Committee hopes to finalise the permanent Child Deaths Register in this coming year.

Even though the development of the Child Deaths Register remains incomplete for this reporting year, the Committee has expanded the data kept on the interim Child Deaths Register and expanded the linkage of the NT BDM Registry data with that of information held by other entities such as the Coroner and many public and private health facilities. With the ability to obtain this in-depth information, the Committee was able to precisely identify the underlying causes of death and causes of death related to the deaths of the children contained in the database and catalogue them consistent with the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision – Australian Modified (ICD-10 AM) standard classification.

The data presented in Chapter 5 of this Report is based on the interim Child Deaths Register. This Register was developed to help with the capture and analysis of the NT BDM Registry data, as well as the integrated data from other related sources, to not only validate data supplied by the NT BDM Registry but also provide more context for child deaths in the years 2006, 2007, 2008 and 2009.

Other Issues

Confidentiality of Information

The Act contains provisions relating to the confidentiality of information obtained by members of the Committee. It is considered an offence under the Act for a member to disclose information, to use information obtained as part of their role on the CDRPC, or to undertake an action that results in the disclosure of 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 Coroner, to a court or tribunal, or if otherwise required or authorised by law.

The Committee understands the highly sensitive nature of the information that it holds and all of its members have been informed about their obligations as members to the Committee when they are undertaking duties associated with the Committee. The Committee has developed policy regarding the use, disclosure and handling of this sensitive information. Future members to the Committee will be provided this policy 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. This will provide a basis on which members can understand their statutory obligations.

Coding Cause of Death

The NT uses ICD-10 AM to code Underlying Cause of Death and Causes of Death. This standard of classification has been approved by the World Health Organisation and is used

by most other similar child death registers throughout Australia. By choosing this standard of classification for underlying and multiple causes of death, data that the NT holds is able to be compared to other jurisdictions' data. The Committee entered into agreement with the National Centre for Health Information Research and Training (NCHIRT) for one of its specialist coders to provide coding of cause of death for each child death registered with the NT BDM Registry from 2006 to 2009. NCHIRT is contracted to continue this service each year for the medium term.

Calendar Year Reporting

The Committee has continued to report data trends based on calendar year rather than financial year. This is mainly due to the fact that most of the Child Death Registers in the different Australian jurisdictions report with the same method. The reporting period for the Committee is based on the financial year (1 July to 30 June) and the data is being reported on the calendar year. This timing permits the Committee to analyse and review data more thoroughly, permitting greater validation of reported data.

Validation and Review

The Committee's inaugural report in 2009 published basic child deaths data from 2006, 2007 and 2008 which is slightly different to information in this year's report. This is a result of ongoing validation and review of this data. The basis of the Child Deaths Register is data obtained from the NT BDM Registry which is derived from death certificates. There are occasions where data is provided to the CDRPC for a child who has died in the NT but may not be a resident of the NT and therefore should not be included in any statistics or references to deaths of NT children. These adjustments will be an ongoing issue as trans-border migration occurs regularly especially among Aboriginal groups in Western Australia, South Australia and Queensland.

There are also exceptional cases in which it has been difficult to ascertain the age of a person who has died. In these cases the Committee is able to use its statutory powers to obtain information regarding a person's age, (often from health facilities) to determine if the person should remain or be removed from the database. Some child deaths present on the Committee's database are also subject to investigation by the Territory Coroner as they are deemed to be a 'Reportable Death' under the *NT Coroners Act.* In these cases the factors relevant to a child's death can take some time to be determined, especially if an inquest into the death is convened. In these circumstances the coronial findings may result in a change of the initial determination of the cause of death.

Australian and New Zealand Child Death Review and Prevention Group

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

The role as Chair of the ANZCDRPG has recently transferred from New South Wales to Queensland. Along with this transfer had been an agreement to review the terms of reference for the national body and the establishment of priorities for the next three years.

The group is currently exploring a number of issues including the development of a standardised data dictionary to facilitate the sharing of information and research.

Chapter 3

Issues Pertaining to Child Death Data in NT

Sources of Data on Child Deaths

The Australian Bureau of Statistics (ABS) publishes a series of reports and tables on deaths that occur in all Australian jurisdictions. These reports, based on data forwarded by the various jurisdictions, provide information on distribution by age and gender, death rates, causes of death and Indigenous status, and the accompanying tables provide the analysis of trends over time. A particular problem for child death review committees such as the one in the Northern Territory is that there is a considerable lag between the date of death as recorded by the NT BDM Registry and the publication of the ABS reports. The most recent report on causes of death was published in March 2010 and focused on deaths recorded to the end of 2008 (ABS, 2010). There are a number of other limitations with the ABS data. For example, they record only the medical causes of death and not the related or underlying causes such as the social factors that may have contributed to the deaths. Another difficulty is that the ABS child death tables do not provide data for each individual year of age so that deaths of 17-year olds, for example, are included in the 15-19 age grouping. Because of these limitations, it is not possible for child death review committees to base their reviews and recommendations on ABS reports.

Another possible data source is the National Coroners 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 provides valuable information on causes of death and clusters that might warrant the attention of policy-makers, but it cannot be used as a primary data source for child death review committees because it represents a limited selection of deaths that occur and because of the long time lag that is possible between the date of death and the Coroner's findings being uploaded to the NCIS.

The two most useful sources of data for the CDRPC are the records held by NT BDM Registry and the Territory Coroner. The NT BDM Registrar compiles information on all deaths that occur in the Territory and forwards child death information that has been registered with the NT BDM Registry in that month to the Committee secretariat soon after the end of each month. The NT BDM Registry receives information about all child deaths in the NT even where such deaths are also referred for a Coronial investigation. In such cases, the date of death is registered along with the basic demographic information, but the cause of death details are not entered until the Coroner's report is handed down which, in some cases, may be in excess of two years after the death.

The NT BDM Registrar also keeps a register of stillbirths and supplies this data to the Committee on a monthly basis for the stillbirths registered in that month.

Date of Death Reporting

There is always some time lag between the actual date of death and the date of the death registration. In the vast majority of cases in the NT, this time lag is relatively minor, mostly less than 30 days. In accordance with other national and state institutions that manage datasets, the Committee has determined that the tables and analyses will focus on the actual date of death rather than the date on which the death was formally registered.

Non-Medical and Contextual Factors Related to Death

The current report of the CDRPC provides the status of the proposed Child Deaths Register, and the provision of an overview of basic child deaths data including cause of death data for the calendar years 2006, 2007, 2008 and 2009. The tables provided are based on the data provided by the NT BDM Registry, Territory Coroner and health facilities with some context being provided by national level data compiled by the ABS.

It is anticipated that information relating to these contextual factors such as socio-economic status, involvement with child protection services, parental alcohol/drug use and level of parental supervision (in cases of accident) as a contributing factor to the death of a child will be examined once the Child Deaths Register has been effectively established. To incorporate these factors into the Child Deaths Register, additional sources of information will be needed from other agencies such as Northern Territory Families and Children and the NT Police. This analysis can commence immediately where deaths from natural causes are registered with the NT BDM Registry (and a comprehensive database is available to record the information) but for cases referred to the Coroner analysis must wait until the Coroner's findings are released.

For the calendar year 2009, 25 deaths were referred to the Coroner. Of these, 17 were finalised with no inquest being held (inquest dispensed with) while 7 are still pending.

Interstate Deaths of NT Children

The *Care and Protection of Children Act* defines a child death (for the purposes of the CDRPC) as "the death of a child who is usually resident in the Territory (whether the death occurred in the Territory or not)" (Section 208 [a]). This definition poses a particular challenge for the CDRPC because of the relatively large number of infants and children who are evacuated from the Northern Territory 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 and infants die whilst receiving treatment interstate. Although the original treating doctors may receive information from interstate hospitals, there does not appear to be any formal arrangements in place to notify the NT BDM Registry of child deaths that occur interstate. It should also be noted that 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 whilst interstate, there are again no formal arrangements for the information to be forwarded to the NT BDM Registry.

The CDRPC 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), which is a national, cross-jurisdictional forum made up of representatives of child death review teams in all Australian jurisdictions and New Zealand. The CDRPC has made attempts to obtain information about child deaths of NT residents from interstate BDM registries. Approximately 3% of the total child deaths in the current report were sourced from these interstate registries. However it remains difficult to obtain detailed information regarding these interstate child deaths because of privacy issues, which in turn makes coding interstate deaths to the ICD-10 classification problematic. Even where the CDRPC obtains this additional information, it does not provide a comprehensive data capture of all the interstate child deaths of NT residents. Therefore, it should be noted that there is likely to be some slight under-reporting in the tables presented in Chapter 5.

Interpretation of Data

Another challenge in the interpretation of child deaths data in the NT is the problem of small numbers. This can lead to major variations in both numbers of deaths per year and in death rates for particular categories such as specific age groupings and Indigenous status. As has been noted in a study of death rates for Indigenous people in the NT, "time series of death rates and life expectancy statistics exhibit considerable random fluctuation over time" (Wilson, Condon & Barnes, 2007, p. 184). Given this random variation, there needs to be a focus on the underlying trends over an extended period of time rather than on drawing conclusions from statistics for any single year. In the current report, some longer term trend data are discussed in Chapter 4, whilst the available NT BDM Registry data are presented for the most recent four calendar years. Even though this report provides cause of death data for the period of 2006-2009 it was decided by the Committee to maintain and update Chapter 4 as it provides a historical context to child deaths in the NT over a 40 year period.

Methodology for Calculation of Child Death Rates

The child death rates in Chapter 5 were calculated using child death data contained in the interim Child Deaths Register and ABS population statistics. For the general population rates the most recent Estimate Resident Population statistics were used. When Aboriginal rates were required, Aboriginal and Torres Strait Islander experimental estimates and projections were utilised (ABS, 2009a & b).

Chapter 4

Child Deaths in the Northern Territory

The Historical Context of NT Data on Child Deaths

The CDRPC holds child death data from 2006-2009, 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 (HGP) in the NT Department of Health and Families (DHF). In presenting this data it allows the Committee's 2006-2009 data to be given some longer term perspective. This allows additional meaningful conclusions regarding the more recent trends of the child deaths rates.

In terms of population the NT is the smallest Australian jurisdiction, with an estimated 2009 population of 225,938. This represents around 1% of the Australian total. The NT has the youngest population in Australia with an average age of 31.2 years. The NT child population represents 28% (62,738) of the total population. Approximately 30% of the total NT population and 43% of the NT child population are Aboriginal Australians (ABS, 2009a & b). The Aboriginal population of the NT (estimated at 66,290 for 2009) is around 12% of the national total Aboriginal and Torres Strait Islander population (ABS, 2009b).

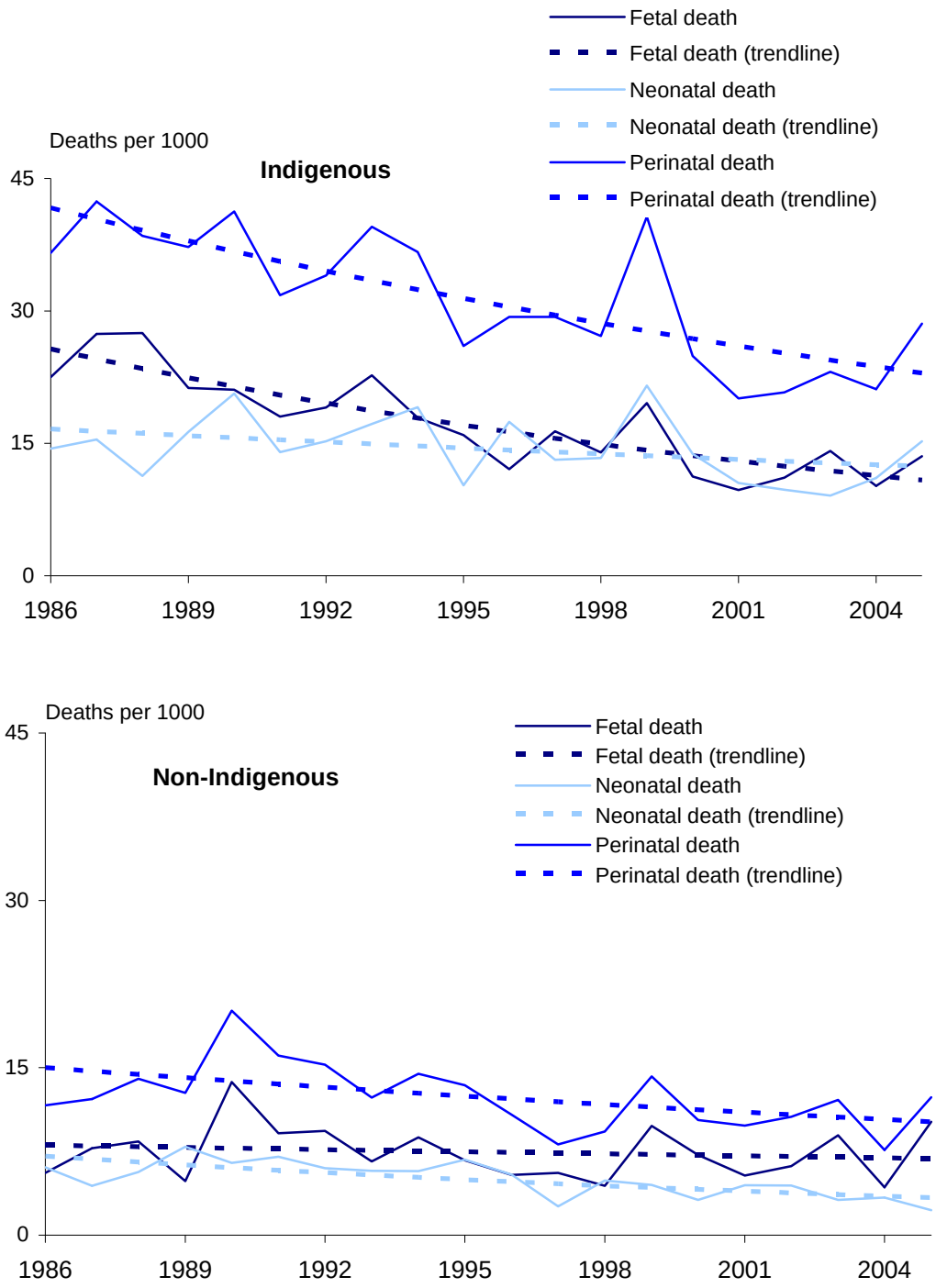
Table 1: Child Death Rates by Age, NT and Australia, 2008

AGE	0 Years	1-4 Years	5-9 Years	10-14 Years	15-19 Years
			Males		
Aust	4.8	0.2	0.1	0.1	0.5
NT	8.1	0.6	0.2	0.5	1.4
			Females		
Aust	3.7	0.2	0.1	0.1	0.2
NT	4.1	0.7	0.2	0.3	1.0

Source ABS 2009, Deaths Australia, 2008
Rates calculated per 1,000 children

The above table (adapted from ABS, 2009c), provides a comparison between the NT and Australian child death rates in 2008. In all categories of age and sex the NT rates are higher than the Australian rates. For example, for male infants the national death rate is 4.8 per 1,000 live births whereas the NT rate is 8.1 per 1,000 live births. The NT rates are indicative only because of random variations associated with the low number of deaths in the relatively small NT population.

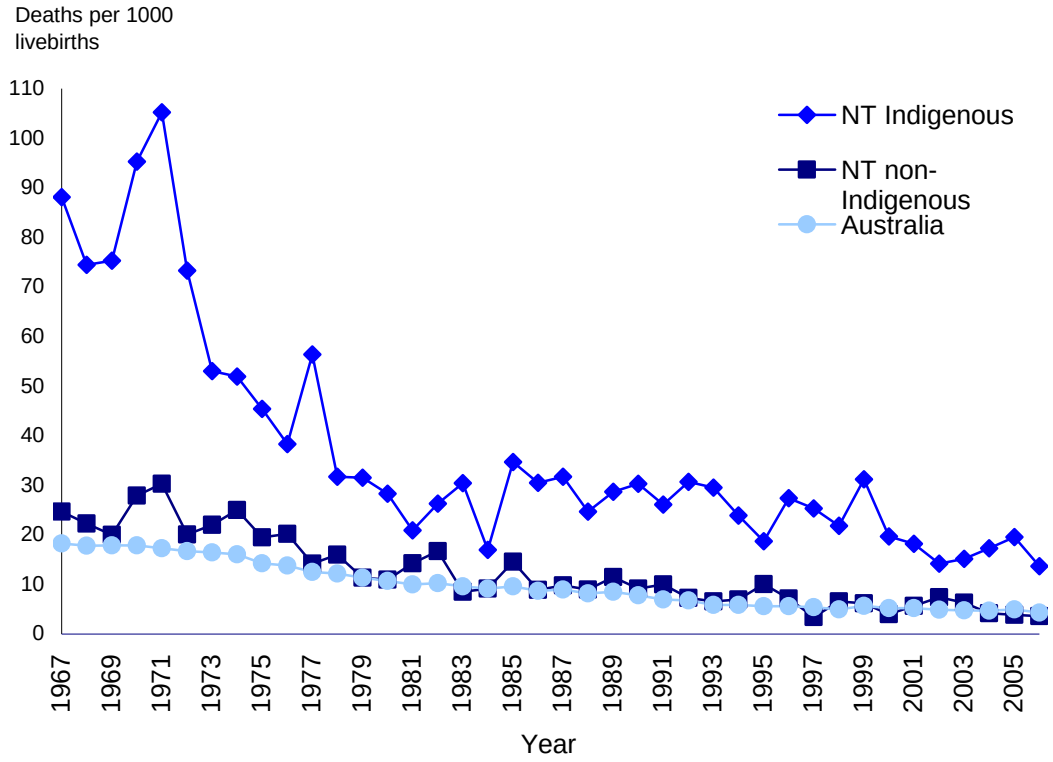
Figure 1: Fetal, Neonatal and Perinatal deaths by Indigenous Status, NT 1986–2005



Source: Health Gains Planning branch, NT Department of Health and Families using ABS deaths dataset and population data.

Figure 1 indicates that there has been long term downward trends in NT death rates for fetal, neonatal and perinatal deaths for both Indigenous and non-Indigenous populations. The Indigenous fetal and perinatal deaths over this 20 year period have declined by 58% and 45% respectively.

Figure 2: Infant Mortality, by Indigenous Status, NT and Australia, 1967–2006



Source: Health Gains Planning branch, NT Department of Health and Families using ABS deaths dataset and population data.

Table 2: Infant Death Rates, 1998 and 2008

	1998	2008
AUST	5.0	4.1
NSW	4.3	4.4
VIC	4.7	3.7
QLD	6.4	4.9
SA	4.0	2.9
WA	5.0	3.4
TAS	5.7	3.8
NT	12.4	6.1
ACT	6.0	5.0

Source ABS 2009, Deaths Australia, 2008
Rates calculated per 1,000 live births

In the 40 year period from 1967 to 2006, both NT Indigenous and non-Indigenous infant death rates have both decreased by approximately 84-85% whereas the Australian rate has decreased by approximately 77% (Figure 2). Even though there has been a larger decrease over this period the Indigenous rates are still well above the Australian rate. The non-Indigenous rate during the last 20 year period has been similar to the Australian rate.

In Table 2, it can be seen that the NT rates are substantially higher than those for all other Australian jurisdictions. The rates in 2008 are generally lower in all jurisdictions than those in 1998. The 2008 rate for the NT remains higher than all others and more than 50% higher than the Australian rate. Table 2 indicates that the NT infant death rate halved in the period 1998 to 2008.

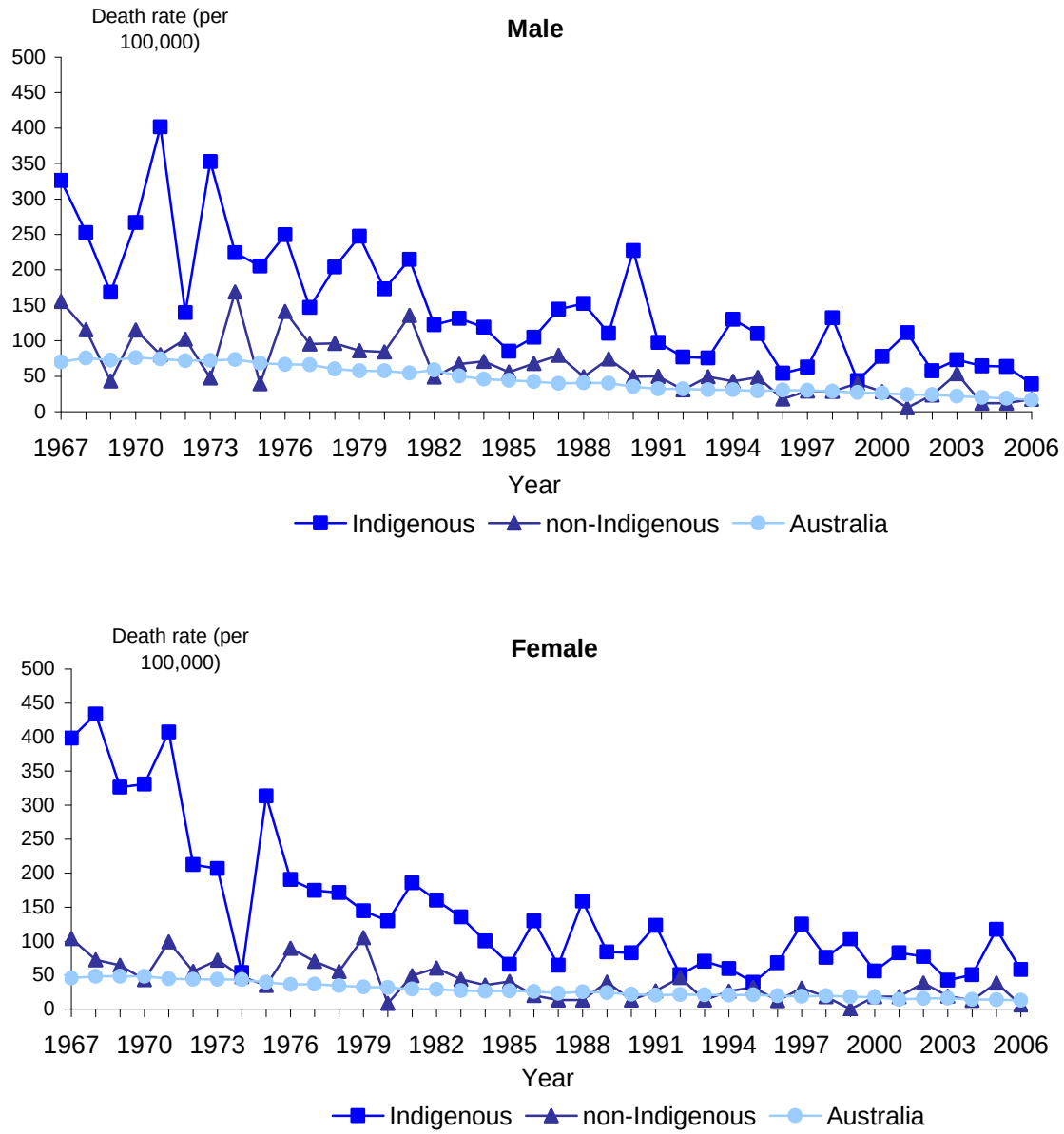
Table 3: Indigenous Infant Death Rates, 2008

	NSW	Qld	SA	WA	NT
Males	8.3	8.4	6.8	11.5	15.1
Females	7.1	7.4	5.9	8.8	11.9
Total indigenous	7.7	7.9	6.4	10.1	13.6
All persons	4.5	5.1	3.5	3.5	7.8

Source ABS 2009, Deaths Australia, 2008
Rates calculated per 1,000 live births

The NT infant death rate for 2008 was considerably higher than other jurisdictions (Table 3). When compared to Indigenous infant death rates in other jurisdictions the NT rate is considerably higher. These higher rates have a significant impact on the overall infant death rates for the NT.

Figure 3: NT Mortality 1 – 17 Years by Gender and Indigenous Status, NT and Australia 1967–2006



Source: Health Gains Planning branch, NT Department of Health and Families using ABS deaths dataset and population data.

For those aged 1-17 years, NT death rates have decreased by approximately 90% during the 40 year period from 1967 to 2006 (Figure 3). The relative Australian rate decreased by approximately 70%. Even though there has been a larger decrease over this period the Indigenous rates, particularly Indigenous females in recent times, remain well above the Australian rate. The NT non-Indigenous rate has been similar to Australian rates during the last 20 years for both males and females.

Chapter 5

Child Deaths in the Northern Territory – 2006-2009

As noted in Chapter 3, the current report of the CDRPC focuses on the presentation of child deaths data for the 2009 calendar year. In order to provide some context, child deaths data for the years 2006, 2007 and 2008 are also presented. The current report relies on data obtained from the NT BDM Registry, as well as from the Territory Coroner and health facilities both interstate and intrastate. Last year's report provided only basic child death statistics for the NT. In addition to those statistics this report provides further statistics on causes of death and underlying causes of death. As previously mentioned, the figures reported in last year's Annual Report have been reviewed and updated. The main causes of these changes were due to the reporting of child deaths when the child was not an NT resident and registration of deaths indicated the incorrect year.

Figure 4: NT Child Deaths in 2009

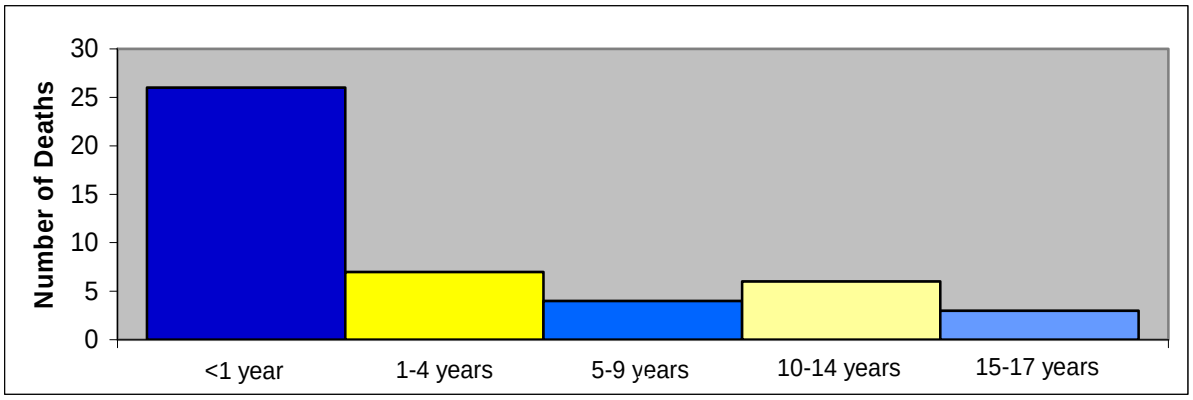


Table 4: NT Child Deaths in 2009

Year of Death	<1 year	1-4 years	5-9 years	10-14 years	15-17 years	Total
2009	26	7	4	6	3	46

There were 46 infant and child deaths registered in 2009. Of these deaths, 26 (57%) occurred during infancy (the first 12 months) with the remainder distributed across the 1-17 year age range.

Figure 5: NT Child Deaths by Age Category 2006–2009

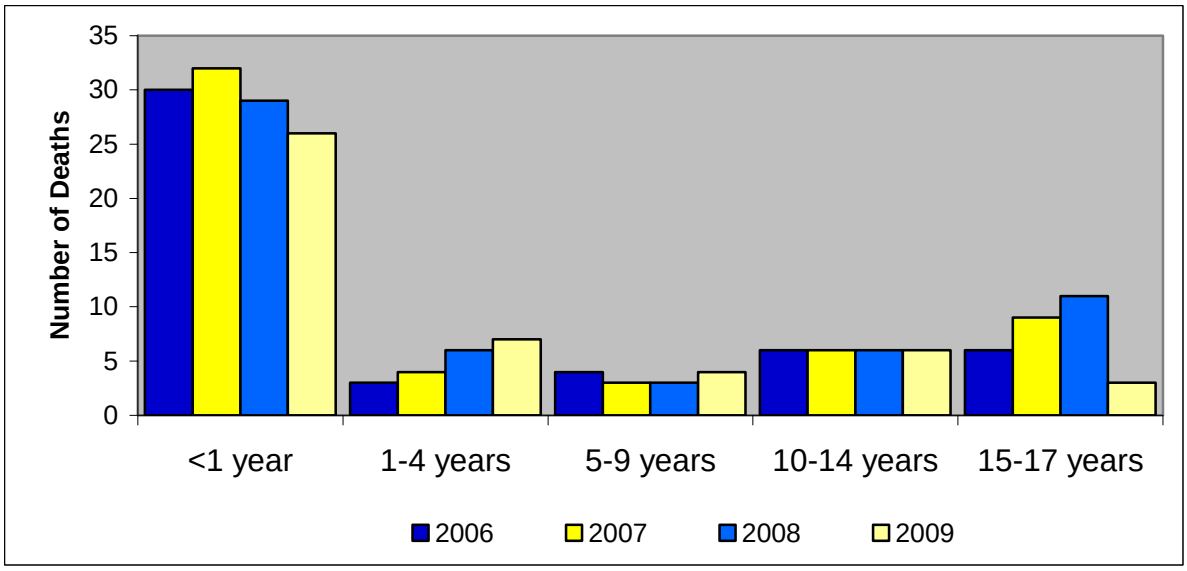


Table 5: NT Child Deaths by Age Category 2006–2009

Year of Death	<1 year	1-4 years	5-9 years	10-14 years	15-17 years	Total
2006	30	3	4	6	6	49
2007	32	4	3	6	9	54
2008	29	6	3	6	11	55
2009	26	7	4	6	3	46
4 Year Total	117	20	14	24	29	204
4 Year Average	29	5	4	6	7	51
4 Year Average Rates per 100,000	772	35	20	36	74	82

Death rates calculated per 100,000 child population.

It can be seen that registered child deaths for the years 2006, 2007, 2008 and 2009 have been recorded as 49, 54, 55 and 46 respectively. The percentages of infant deaths (out of total child deaths) for the four years are 61%, 59%, 53% and 57% respectively.

Over the four years from 2006 – 2009 there is a consistent pattern with the highest number of child deaths occurring during the first year of life, numbers then fall sharply and start to rise in the 10-14 years and 15-17 years age groups. There appears to be a gradual decrease in the numbers of infant deaths and a fall in the number of deaths in the 15-17 year in 2009. However the observed changes in 2009 are not inconsistent with long term trends (reported in chapter 4) and due to the small numbers no meaningful conclusion can be drawn. Future years data will help assess trends.

Death rates rather than numbers provide a sounder basis for time series, interstate and international comparisons. Child death rates in the present publication are based on ABS Estimated Residential Population data (ABS, 2009a) and are calculated on 100,000 children and young people aged 0-17 years in the NT. Given the relatively small numbers involved and the statistical variation that might be expected from year to year, rates are based on an

average of the four years reported. The total average child death rate for the four years 2006-2009 was 82 per 100,000 children.

Infant death rates are calculated per 1,000 live births. Using this multiplier (instead of the 100,000 used for all children) the average infant death rate for the NT stands at 7.7 per 1,000 live births. For purposes of comparison, the national infant death rate reported by the ABS for 2008 is 4.1 per 1,000 live births. This finding is consistent with the longer-term infant death patterns (see Chapter 4) in which NT rates are around double the national average.

It should be noted that both the numbers and death rates published by the ABS differ from those provided here, which are based directly on NT BDM Registry data. For example, the tables in *Deaths, Australia, 2008* (ABS, 2009c) list a total of 24 NT infant deaths (16 males and 8 females) for 2008 whereas the data supplied by NT BDM Registry indicate 29 infant deaths comprising 16 males and 13 females. In 2008, child death information obtained from other jurisdictions' BDM registries concerning NT residents reveal no additional deaths of NT residents. However, in other years, there have been a number of additional child deaths registered and these will have an impact on the discrepancy in the statistics published by the ABS and the CDRPC. The biggest difference in the method of calculation is that the ABS calculates the number of deaths in the year they were registered whereas the CDRPC uses the year of the actual death. As noted in Chapter 2, the CDRPC has been provided some interstate BDM information though this is not yet comprehensive. Differences in population estimates used for various calculations can also contribute to differences in rates.

Figure 6: NT Child Deaths by Gender 2006–2009

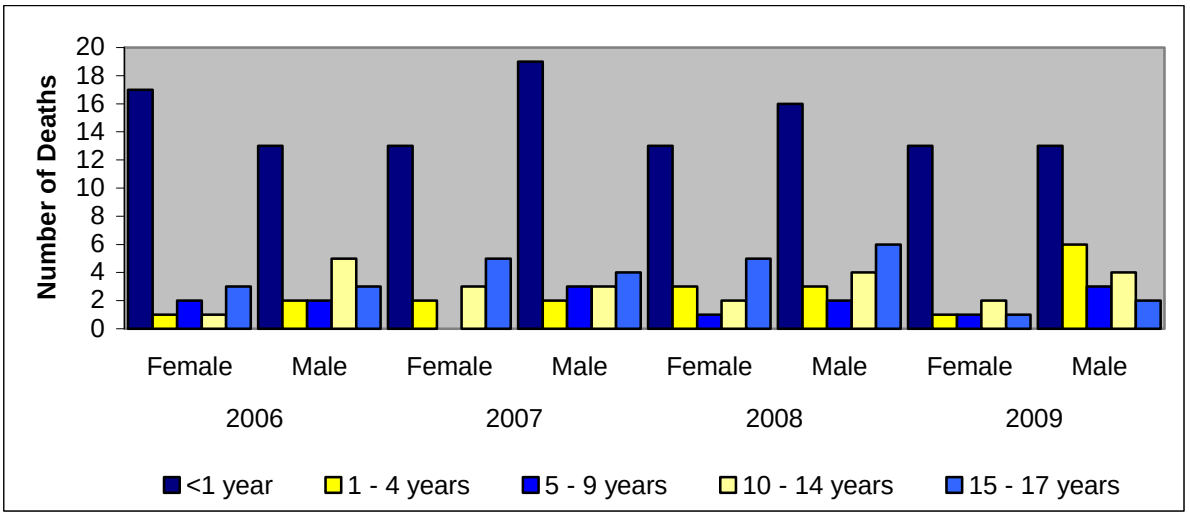


Table 6: NT Child Deaths by Gender 2006–2009

Year of Death	Sex	<1 year	1 - 4 years	5 - 9 years	10 - 14 years	15 - 17 years	Total
2006	Female	17	1	2	1	3	24
	Male	13	2	2	5	3	25
2006 Total		30	3	4	6	6	49
2007	Female	13	2	0	3	5	23
	Male	19	2	3	3	4	31
2007 Total		32	4	3	6	9	54
2008	Female	13	3	1	2	5	24
	Male	16	3	2	4	6	31
2008 Total		29	6	3	6	11	55
2009	Female	13	1	1	2	1	18
	Male	13	6	3	4	2	28
2009 Total		26	7	4	6	3	46
Total		117	20	14	24	29	204

It is difficult to draw any firm conclusions on gender patterns, given these small numbers in each year and category. However, it does appear that, consistent with national data, there were generally more male deaths than female deaths in most age groups and for total child deaths. The deaths in 2009 are representative of this disproportionate number of male deaths.

Figure 7: NT Child Deaths by Aboriginal Status 2006–2009

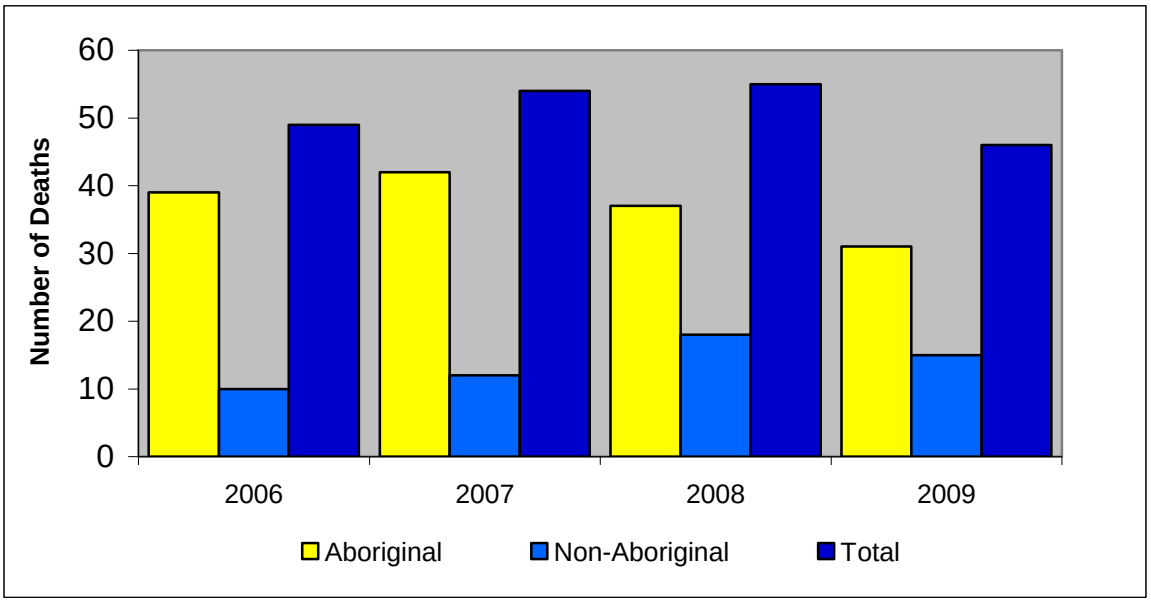


Table 7: NT Child Deaths by Aboriginal Status 2006–2009

Year of Death	Aboriginal	Non-Aboriginal	Total
2006	39	10	49
2007	42	12	54
2008	37	18	55
2009	31	15	46
4 Year Total	149	55	204
4 Year Average	37	14	51
4 Year Average Rate per 100,000	139	39	82

For all four years, elevated child death numbers for Aboriginal children are evident. Aboriginal children make up around 43% of the NT child population (ABS, 2009a & b), but the number of Aboriginal child deaths was around three times and a half times greater than those for non-Aboriginal children. Likewise, the overall child death rate reveals that Aboriginal children are at almost four times greater risk of dying than their non-Aboriginal counterparts. Even though there was a drop in the number of child deaths between 2008 and 2009 the greater percentage was attributed to the non-Aboriginal population with a 28% reduction and the Aboriginal child death numbers only reducing by 16%. However, as previously discussed, year to year comparisons and numbers with such a small population cohort should be treated with caution.

Figure 8: NT Infant Deaths by Aboriginal Status 2006–2009

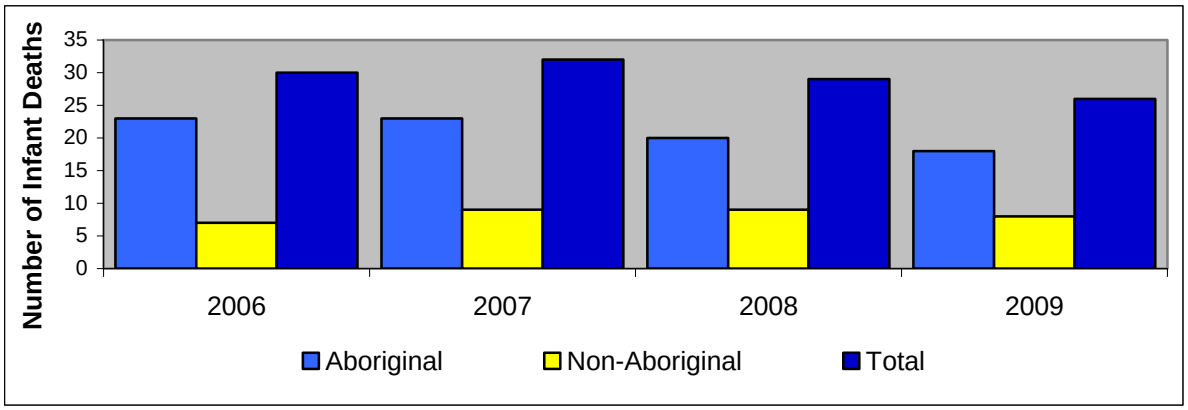


Table 8: NT Infant Deaths by Aboriginal Status, 2006–2009

Year of Death	Aboriginal	Non-Aboriginal	Total
2006	23	7	30
2007	23	9	32
2008	20	9	29
2009	18	8	26
4 year Total	84	33	117
4 Year Average	21	8	29
4 Year Average Rate per 1,000	13.3	3.7	7.7

The death rates for infants also reveal that Aboriginal infants are at much greater risk (just over three and a half times greater) than non-Aboriginal infants. The Aboriginal infant death rate over the aggregated period, as specified in Table 8, is 13.3. The published ABS 2006-2008 equivalent rate is 13.6 which is different because of the ABS's different methodology for calculation and the rate is based on a different aggregated period.

Underlying Causes of Death and Causes of Death of Children in the Northern Territory

The CDRPC will this year report on Cause of Death and Underlying Causes of Death for child deaths in the period 2006-2009. The World Health Organisation (WHO) clearly distinguishes between the cause of death (COD) and the underlying cause of death (UCOD). 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".* 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 can be the same or can differ. An example of when they differ would be if a person was a passenger in a car, that car was involved in a traffic accident, leading to the passenger dying of internal haemorrhaging. In that case, the COD would be the internal haemorrhaging as it was the injury that caused the death of the person, and the UCOD would be the traffic accident as it was the major event that caused the death.

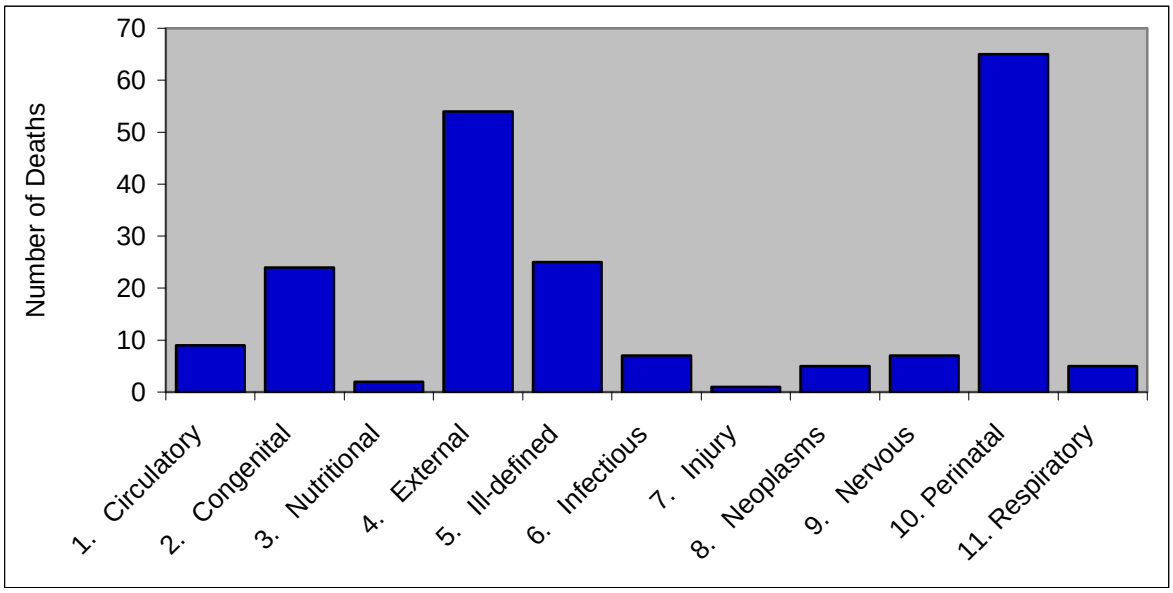
In the tables and figures representing the COD and UCOD, child deaths have been grouped in classifications that are based on ICD-10 AM groupings with slight modification for simplicity and improved understanding.

This data allows the child deaths occurring throughout the Northern Territory to be more thoroughly examined with regard to how and why the deaths occurred. Such understanding can help raise public awareness and may also contribute to the development of targeted responses to reduce the incidence of such deaths.

Table 9: NT Underlying Causes of Child Deaths by specific event 2006–2009

ICD-10 Coding Descriptions	UCOD	Year of Death 2006	2007	2008	2009	Total
A00-B99 Certain infectious and parasitic diseases	(Infectious and Parasitic Diseases)		2	3	2	7
C00-D48 Neoplasms	(Neoplasms)	2		2	1	5
E00-E90 Endocrine, nutritional and metabolic diseases	(Endocrine, Nutritional and Metabolic Diseases)			1	1	2
G00-G99 Diseases of the nervous system	(Nervous System)	2		1	4	7
I00-I99 Diseases of the circulatory system	(Circulatory System)	2	7			9
J00-J99 Diseases of the respiratory system	(Respiratory System)	1	2	2		5
P00-P96 Certain conditions originating in the perinatal period	(Perinatal Conditions)	15	19	16	15	65
Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities	(Congenital Malformations)	7	6	4	7	24
R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	(Ill-defined Symptoms and Signs)	7	2	6	10	25
S00-T98 Injury, poisoning and certain other consequences of external causes	(Injury and Poisoning)			1		1
V01-Y98 External causes of morbidity and mortality	(External Causes)	13	16	19	6	54
Total		49	54	55	46	204

Figure 9: NT Underlying Causes of Child Deaths by Classification Grouping 2006–2009 Aggregate



Key to Categories:

1. Circulatory System;
2. Congenital Malformations;
3. Endocrine, Nutritional and Metabolic Diseases;
4. External Causes;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Injury and Poisoning;
8. Neoplasms;
9. Nervous System;
10. Perinatal Conditions;
11. Respiratory System.

Table 10: NT Underlying Causes of Child Deaths by Classification Grouping 2006–2009 Aggregate

	2006	2007	2008	2009	Total
1. Circulatory	2	7			9
2. Congenital	7	6	4	7	24
3. Nutritional			1	1	2
4. External	13	16	19	6	54
5. Ill-defined	7	2	6	10	25
6. Infectious		2	3	2	7
7. Injury			1		1
8. Neoplasms	2		2	1	5
9. Nervous	2		1	4	7
10. Perinatal	15	19	16	15	65
11. Respiratory	1	2	2		5
Total	49	54	55	46	204

The UCOD figures clearly establish that one of the leading underlying causes of death is from External Causes that include events such as transport accidents, intentional self-harm, accidental poisoning, interaction with dangerous animals or creatures and drowning, whilst the leading underlying causes of death are Perinatal Conditions which includes events such as complications during pregnancy, birth or labour, disorders relating to gestation, respiratory, digestive, infection and circulatory system of a fetus or newborn or infection. This latter grouping has a clear correlation to the high number of infant deaths that occur

which can also be attributed to the number of deaths occurring from congenital malformations.

The decrease in child deaths relating to external causes in 2009 as shown in Table 10 is the result of the absence of any intentional self-harm events in 2009. There is no specific action or targeted Government program that can be attributed to having caused this large decrease other than a random anomaly has occurred, or there may have been an increase in deaths of this type in the age categories above the age of a child of 17 years. Alternatively, there maybe outstanding deaths of this type still before the Territory Coroner.

The ill-defined symptoms and signs grouping is quite large as there are a number of child deaths, particularly in 2009, that have not yet been determined by the Territory Coroner, therefore their cause of death remains un-coded. This grouping also includes Sudden Unexpected Death in Infancy (SUDI) deaths.

Figure 10: NT Underlying Causes of Infant Deaths by Classification Grouping 2006–2009 Aggregate

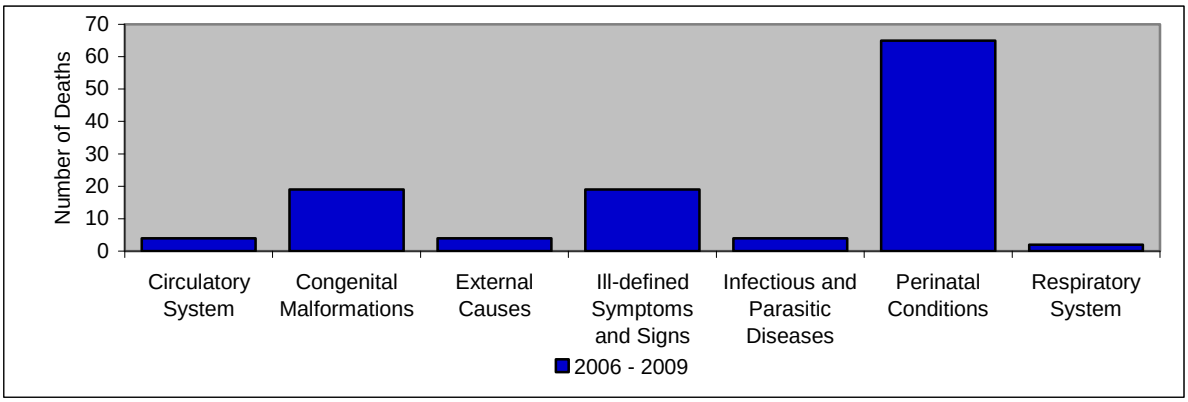
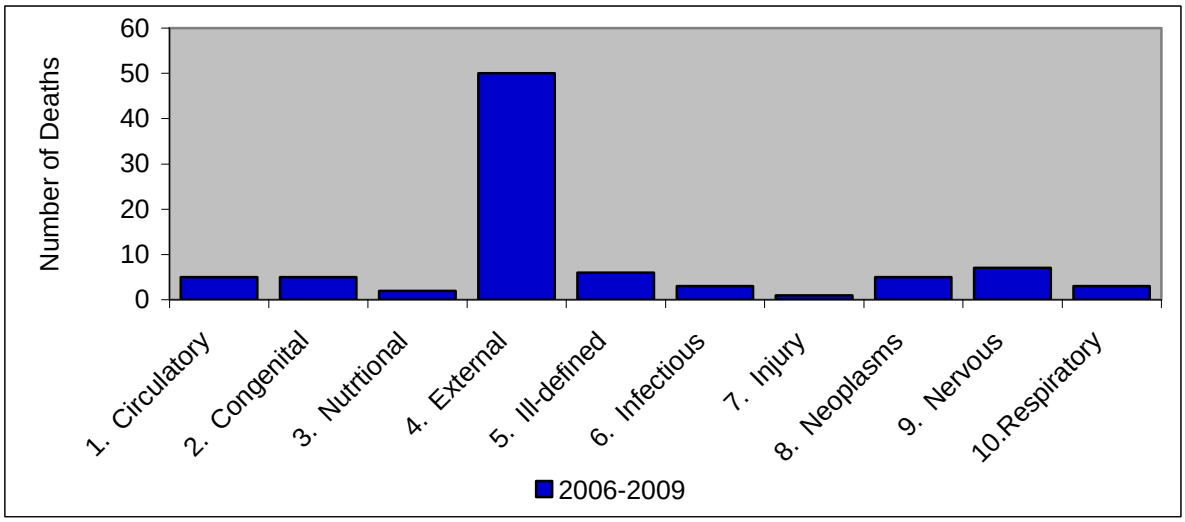


Table 11: NT Underlying Causes of Infant Deaths by Classification Grouping 2006–2009 Aggregate

	2006	2007	2008	2009	Total
Circulatory System	1	3			4
Congenital Malformations	6	5	4	4	19
External Causes	1	2	1		4
Ill-defined Symptoms and Signs	7	1	5	6	19
Infectious and Parasitic Diseases		1	2	1	4
Perinatal Conditions	15	19	16	15	65
Respiratory System		1	1		2
Total	30	32	29	26	117

As previously noted the most prominent causes of death for infants are Perinatal Conditions and Congenital Malformations, which are consistent with the national infant UCOD occurrences. Further breakdown of the Circulatory System shows that four (three infants and one child in the 1-4 age group, Appendix 2) of these nine deaths were due to Myocarditis all occurring in 2007. This particular condition is quite rare in infants and younger children.

Figure 11: NT Underlying Causes of Deaths by Age 1-17 and Classification Grouping 2006–2009 Aggregate



Key to Categories:

1. Circulatory System;
2. Congenital Malformations;
3. Endocrine, Nutritional and Metabolic Diseases;
4. External Causes;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Neoplasms;
8. Nervous System;
9. Injury and Poisoning;
10. Respiratory System.

Table 12: NT Underlying Causes of Deaths by Age 1-17 and Classification Grouping 2006–2009 Aggregate

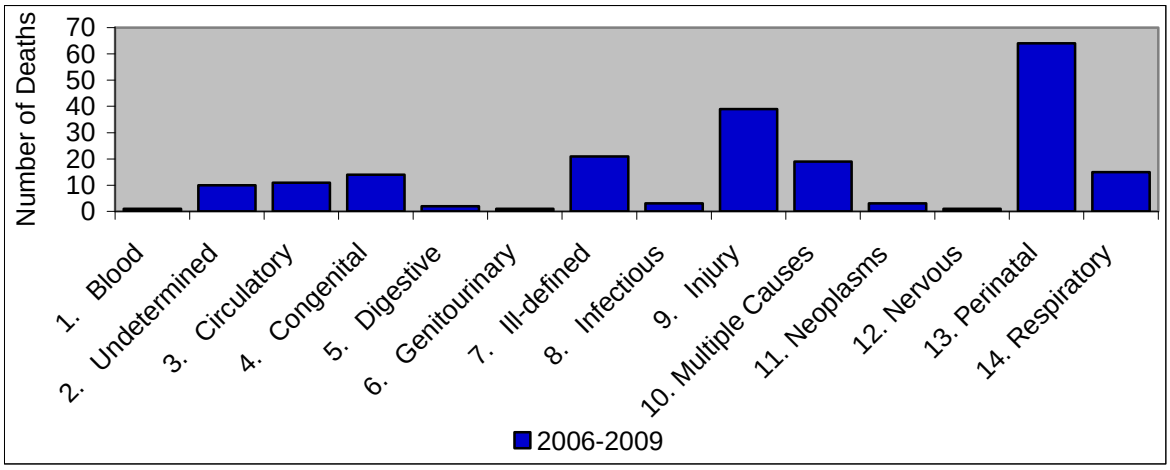
	2006	2007	2008	2009	Total
1. Circulatory	1	4			5
2. Congenital	1	1		3	5
3. Nutrtional			1	1	2
4. External	12	14	18	6	50
5. Ill-defined		1	1	4	6
6. Infectious		1	1	1	3
7. Injury			1		1
8. Neoplasms	2		2	1	5
9. Nervous	2		1	4	7
10.Respiratory	1	1	1		3
Total	19	22	26	20	87

As previously stated, External Causes which include events such as transport accidents, intentional self-harming, accidental poisoning, interaction with dangerous animals or creatures and drowning are prevalent in children above the infant age range. External Causes as the UCOD is more prevalent in the age groups of 15-17 with a trend of lower death numbers in the age groups following infancy (particularly 1–4 and 5-9 age groups). In 2009, as evidenced in Table 12, there was a significant fall in the number of External Causes as the UCOD, mainly due to the elimination of any self-harm events occurring in that year. Though noteworthy, this result must be treated with caution because of the Northern Territory's small population. Over the four year aggregated period transport accidents accounted for 20 deaths (Appendix 2) of which 18 deaths were in the age group 1-17. This amounts to 21% of all deaths in this age group. A total of nine children were passengers or

occupants who were not driving. A further six were pedestrians or non-occupants while only three were drivers of the vehicle.

Over the four year aggregated period External Causes, and particularly self-harming events and transport accidents (which combined contribute to 38% of the deaths in this age group), are substantially higher than any other type of UCOD for the age group 1-17. The NT has a death rate for intentional self-harm that far exceeds the national average figure that suggests the need for preventative action. Chapter 6 of this Report explores this issue in more depth.

Figure 12: NT Causes of Child Deaths by Classification Grouping 2006–2009 Aggregate



Key to Categories:

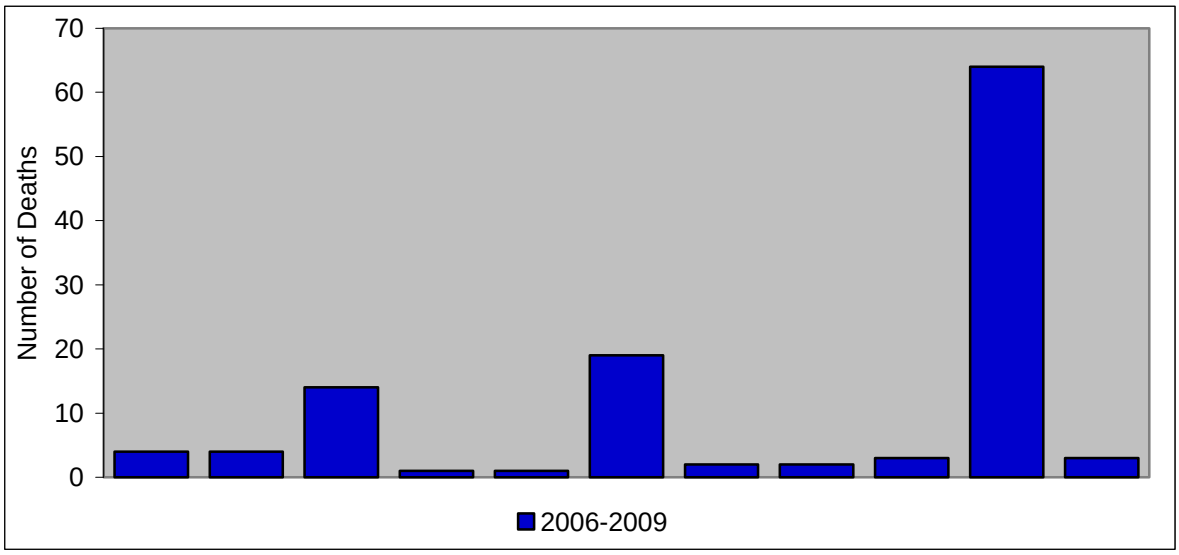
1. Blood diseases and disorders involving the immune mechanism;
2. Cause of death not determined;
3. Circulatory system;
4. Congenital Malformations;
5. Digestive System;
6. Genitourinary System;
7. Ill-defined Systems and Signs;
8. Infectious and Parasitic Diseases;
9. Injury and Poisoning;
10. Multiple Causes of Death;
11. Neoplasms;
12. Nervous System;
13. Perinatal Conditions;
14. Respiratory System.

Table 13: NT Causes of Child Deaths by Classification Grouping 2006–2009 Aggregate

	2006	2007	2008	2009	Total
1. Blood	1				1
2. Undetermined		1	1	8	10
3. Circulatory	3	7		1	11
4. Congenital	4	6	2	2	14
5. Digestive			2		2
6. Genitourinary	1				1
7. Ill-defined	9	3	6	3	21
8. Infectious		1	1	1	3
9. Injury	9	12	14	4	39
10. Multiple Causes	4	3	6	6	19
11. Neoplasms			2	1	3
12. Nervous				1	1
13. Perinatal	15	17	17	15	64
14. Respiratory	3	4	4	4	15
Total	49	54	55	46	204

As with the UCOD for child deaths, the highest COD are grouped in the Perinatal Conditions classification. This is generally the case in infants where the UCOD tends to be the actual event that results or contributes to the death. Deaths which involve Multiple Causes of Death account for approximately 9% of the total amount of child deaths. As with the UCOD figures there is still a large portion of CODs which are not yet coded due to the death not being determined by the Territory Coroner.

Figure 13: NT Causes of Infant Deaths by Classification Grouping 2006–2009 Aggregate



Key to Categories:

1. Cause of death not determined;
2. Circulatory System;
3. Congenital Malformations;
4. Digestive System;
5. Genitourinary System;
6. Ill-defined Symptoms and Signs;
7. Infectious and Parasitic Diseases;
8. Injury and Poisoning;
9. Multiple Causes of Death;
10. Perinatal Conditions;
11. Respiratory System.

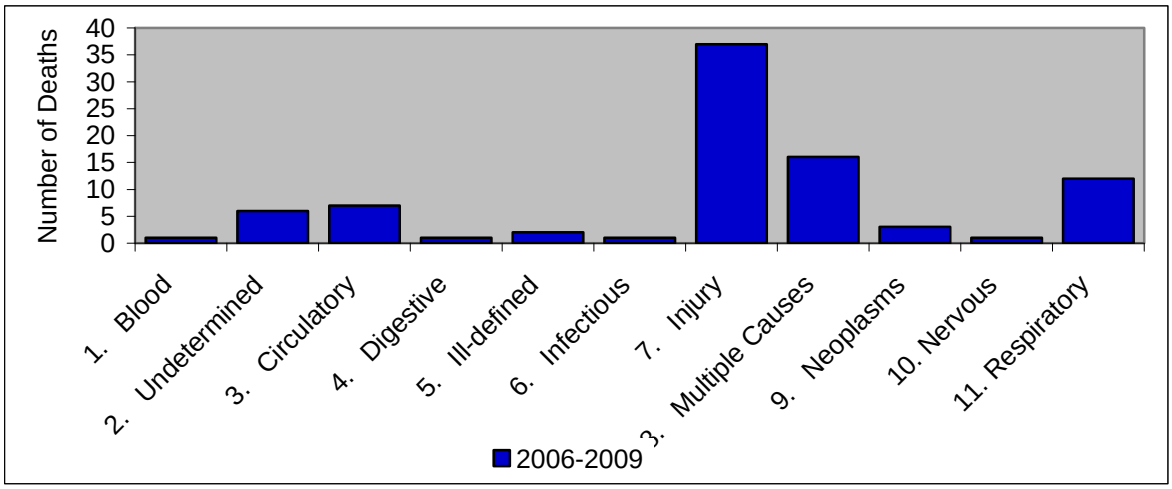
Table 14: NT Causes of Infant Deaths by Classification Grouping 2006–2009 Aggregate

	2006	2007	2008	2009	Total
1. Undetermined				4	4
2. Circulatory	1	3			4
3. Congenital	4	6	2	2	14
4. Digestive			1		1
5. Genitourinary	1				1
6. Ill-defined	8	3	5	3	19
7. Infectious			1	1	2
8. Injury	1	1			2
9. Multiple Causes		1	1	1	3
10. Perinatal	15	17	17	15	64
11. Respiratory		1	2		3
Total	30	32	29	26	117

As previously discussed, the COD for infants tends to directly relate to the UCOD for the same death with a vast majority of Congenital and Perinatal Conditions directly corresponding with the UCODs classification. Infant deaths involving Multiple Causes of Death account for a very small number with only approximately 3% of the deaths occurring

as a result of a variety of causes. It seems as though infants tend to have one particular disease, condition or injury that causes the death.

Figure 14: NT Causes of Deaths by Age 1-17 and Classification Grouping 2006–2009 Aggregate



Key to Categories:

1. Blood diseases and disorders involving the immune mechanism;
2. Cause of death not determined;
3. Circulatory system;
4. Digestive System;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Injury and Poisoning;
8. Multiple Causes of Death;
9. Neoplasms;
10. Nervous System;
11. Respiratory System.

Table 15: NT Causes of Deaths by Age 1-17 and Classification Grouping 2006–2009 Aggregate

	2006	2007	2008	2009	Total
1. Blood	1				1
2. Undetermined		1	1	4	6
3. Circulatory	2	4		1	7
4. Digestive			1		1
5. Ill-defined	1		1		2
6. Infectious		1			1
7. Injury	8	11	14	4	37
8. Multiple Causes	4	2	5	5	16
9. Neoplasms			2	1	3
10. Nervous				1	1
11. Respiratory	3	3	2	4	12
Total	19	22	26	20	87

Injury and Poisoning make up the majority of the CODs in this age range that tends to correlate with the majority of the External Causes group classification of UCODs for this age range. This is the case, for example, where a child's death occurred through intentional self-harm by hanging. The UCOD will be grouped as an External Cause and the resulting asphyxiation caused by the hanging will be grouped within the Injury and Poisoning category as the COD.

In this age range there tends to be more deaths which were the result of Multiple Causes with Multiple Causes representing 17% of the total deaths. This is in contrast to the low percentage represented in the infant age range. As previously noted there remains a number of deaths that have no COD as they remain with the Territory Coroner.

Stillbirths and Neonatal Deaths in the Northern Territory

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 to be "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 NT BDM Register is the source of data for the following tables.

Figure 15: NT Stillbirths by Gender 2006–2009

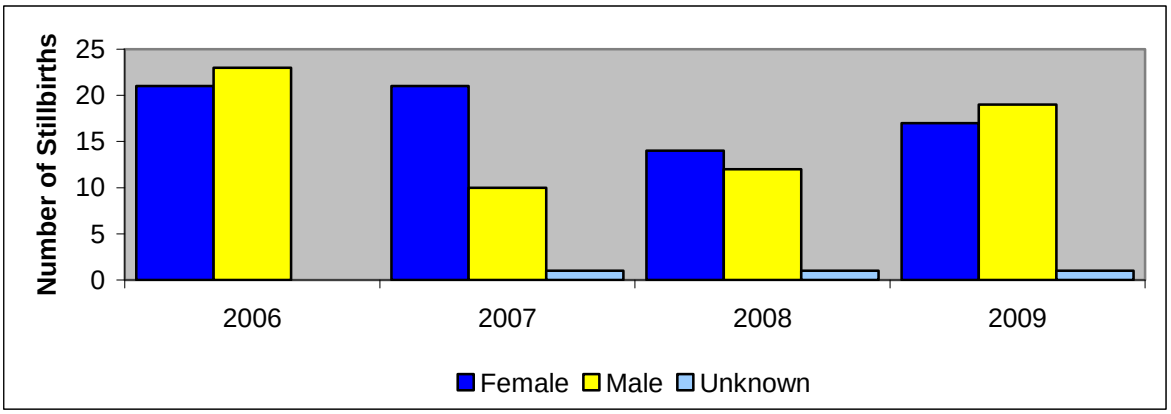


Table 16: NT Stillbirths by Gender 2006–2009

	Female	Male	Unknown	Total
2006	21	23		44
2007	21	10	1	32
2008	14	12	1	27
2009	17	19	1	37
Total	73	64	3	140

There appears to be great annual variability in the number of stillbirths registered with the NT BDM Registry. A total of 37 stillbirths were registered in 2009 compared with 27 in 2008, 32 in 2007 and 44 in 2006. There appears to be a consistent pattern for each gender across all years apart from 2007. There might be a correlation between the increase in stillbirths for 2009 when compared to 2008 and the lower number of infant deaths experienced in 2009 when compared to 2008 (Figure 8).

Figure 16: NT Stillbirths by Aboriginal Status 2006–2009

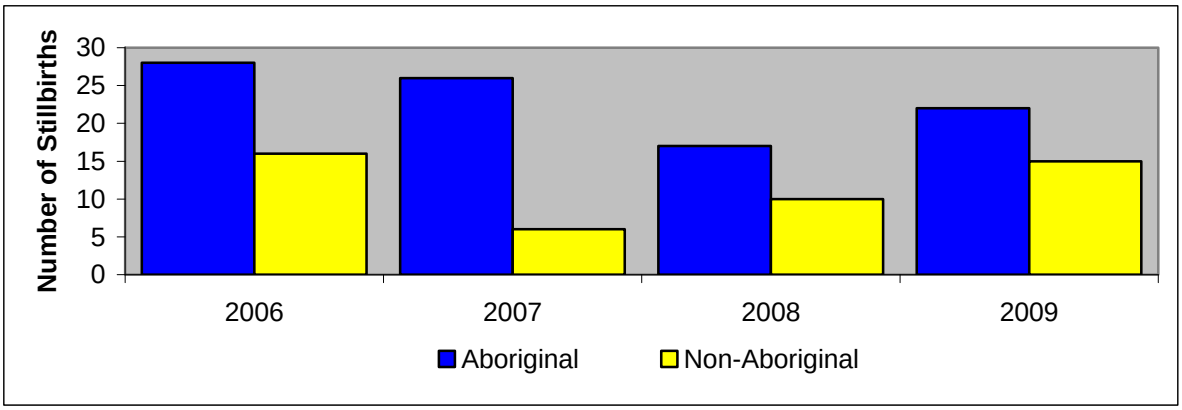


Table 17: NT Stillbirths by Aboriginal Status 2006–2009

	Aboriginal	Non-Aboriginal	Total
2006	28	16	44
2007	26	6	32
2008	17	10	27
2009	22	15	37
Total	93	47	140

As with child deaths, there is a consistent pattern in which the number of registered stillbirths is higher for the Aboriginal population. However, there may be an overall trend for decline in stillbirths even though there is an increase of deaths for 2009. A longer period of analysis is likely to be required to ascertain if this is a consistent trend.

Figure 17: NT Neonatal Deaths 2006–2009

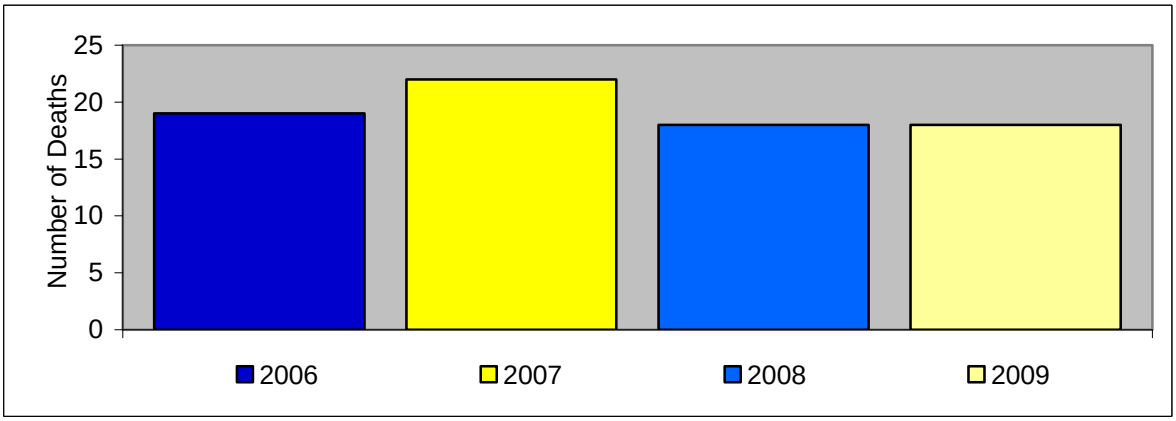


Table 18: NT Neonatal Deaths 2006–2009

	2006	2007	2008	2009	Total
Total	19	22	18	18	77

The neonatal period is from birth to 28 days of age. There is no discernible variation over the 4 year period.

Figure 18: NT Neonatal Deaths by Aboriginal Status 2006–2009

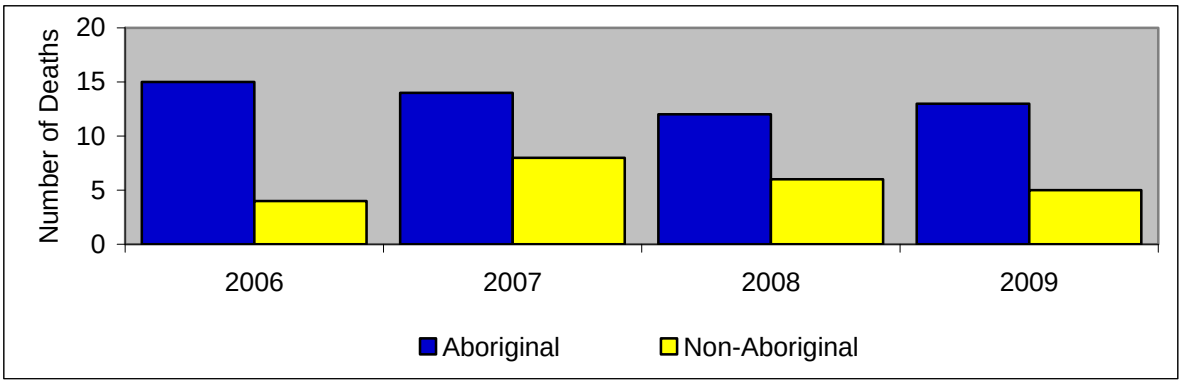


Table 19: NT Neonatal Deaths by Aboriginal Status 2006–2009

	Aboriginal	Non-Aboriginal	Total
2006	15	4	19
2007	14	8	22
2008	12	6	18
2009	13	5	18
	54	23	77

As with stillbirths, perinatal deaths and deaths in general, Aboriginal neonatal deaths are over-represented. Although the gap between Aboriginal and non-Aboriginal neonatal deaths may have been closing a little there was some increase in that gap for 2009. The aggregate over the four years indicates just over twice as many neonatal deaths for the Aboriginal population when compared to the non-Aboriginal population, but the rate ratio is much higher.

Figure 19: NT Perinatal Deaths 2006–2009

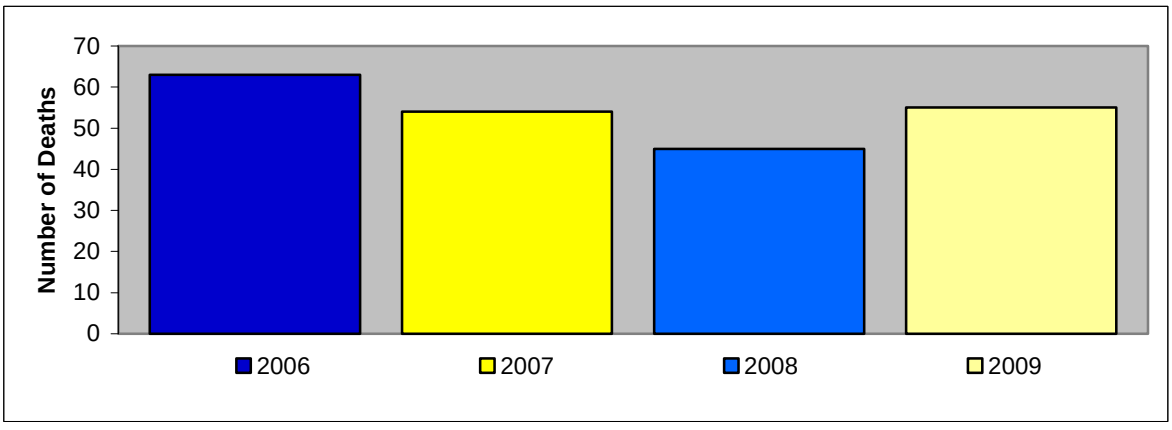


Table 20: NT Perinatal Deaths 2006–2009

	Year of Death				
	2006	2007	2008	2009	Total
Total	63	54	45	55	217

Given that there is an elevated risk in the perinatal period (immediately prior to and following the birth), the CDRPC will seek to specifically monitor stillbirths and deaths occurring in this period. In Australia the perinatal period[6] commences at the 20th completed week of gestation and ends 28 completed days after birth. The perinatal data in Table 20 and 21 combine stillbirths (as defined in the NT *Births Deaths and Marriages Registration Act*) and neonatal deaths. The numbers represented over the four year period tend to suggest an overall decline in the number of these deaths though it is difficult to draw meaningful conclusions considering the relatively short time period examined.

Figure 20: NT Perinatal Deaths by Aboriginal Status 2006–2009

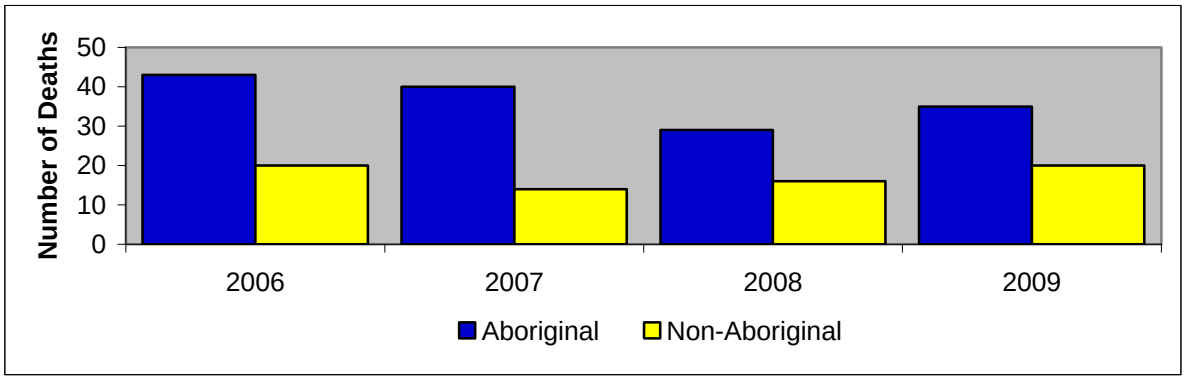


Table 21: NT Perinatal Deaths by Aboriginal Status 2006–2009

	Aboriginal	Non-Aboriginal	Total
2006	43	20	63
2007	40	14	54
2008	29	16	45
2009	35	20	55
Total	147	70	217

There appears to be an overall pattern in the declining number of Aboriginal perinatal deaths but a longer period of analysis will be needed to establish whether or not this is a consistent trend. As is the case with all of the child death statistics, the Aboriginal population appears to be over-represented.

[6] see Australian Institute of Health and Welfare Meteor Online Registry, definition of perinatal period, http://meteor.aihw.gov.au/content/index.phtml/itemId/327314

Chapter 6

Research

Co-sponsorship of Research

One of the functions of the Committee is to sponsor research into child deaths. The Department of Health and Families (DHF) and more specifically their Health Gains Planning (HGP) branch, has approached the Committee to co-sponsor research in relation to Aboriginal infant death rates. The research question is based on whether the reduction in Aboriginal fetal death rates has moderated the smaller improvement in Aboriginal infant deaths rates. The Committee has agreed to support this research with the provision of the Committee's perinatal data to HGP to better examine the trends of fetal, neonatal and post-neonatal deaths within the target cohort. These specified infant death rates are key measures that indicate quality of life outcomes and it is crucial that these rates are comprehensively validated and contain the most relevant data. These are crucial for a variety of reasons such as the measurement of the success of some of government's key policy decisions.

For the Committee to provide the information it holds for the purposes of this research, it had to gain authorisation from the Minister for Child Protection. The Committee put this proposal to the Minister who authorised the disclosure of information for the purpose of this research on 31 May 2010.

The Committee will uphold the principles of the *Information Act* and its own privacy policies when providing this information to HGP, including encryption of data to eliminate the chance of a privacy breach. The Committee has asked that HGP provide updates regarding the progress of the research and provide the trend data for the Committee's consideration.

Preliminary Comparative Analysis for Hangings in the NT

As the data held by the Committee has increased from sources such as the NT BDM Registry and the Territory Coroner, certain trends have begun to be identified. Of note and of particular concern to members of the Committee was the high rate and frequency of child deaths by suicide and particularly by hanging. For the period 2006 to 2009 all child deaths involving hanging as a method of suicide were Aboriginal children. The Aboriginality of the children was not a factor considered for the purposes of this comparative analysis as data in other jurisdictions was not available for this distinction. However, the Committee recognises that this is an issue that also requires some future examination.

There has been some national exposure over previous years regarding the high rate of suicide in the Northern Territory and especially in the Tiwi Islands (Measey et al 2006). There can be many inferences drawn as to why these rates are so high, including the remoteness of many areas in the Territory. Studies undertaken by the AIHW indicate that death rates both generally and for specific categories such as suicide are higher in remote areas of Australia (AIHW, 2003). With the Northern Territory containing some of the most remote areas and populations of Australia there is a strong suggestion that remoteness is one of the contributory factors. This higher rate of mortality including suicide in remote localities is often attributed to limited access to health and community services. Socio-economic deprivation is also prevalent in these areas. Other research suggests that the higher use of alcohol and marijuana in the Northern Territory comparative to the Australian average has also been a contributing factor to the high suicide rates in the Northern Territory (Measey et al 2006).

Given these concerns, the Committee commissioned its Research Officer to undertake preliminary analysis for hanging deaths for the periods 2006-2007 to 2008-2009. This information was compared with similar information from NSW and Qld. The data for other states were sourced from the NSW Child Death Review Team and the Qld Commission for Children and Young People and Child Guardian. Other jurisdictions were not used due to the unavailability of deaths specific to suicide by hanging, or in relation to Victoria and Western Australia the information was only available in relation to children in the child protection system. Deaths of this type in both NSW and Qld are registered against the year in which the death was registered. Therefore, to compare deaths in the NT with these two jurisdictions, the data were aligned by date of registration.

Hangings Data

Table 22: Hanging Numbers and Rates by Jurisdiction 2006-2009

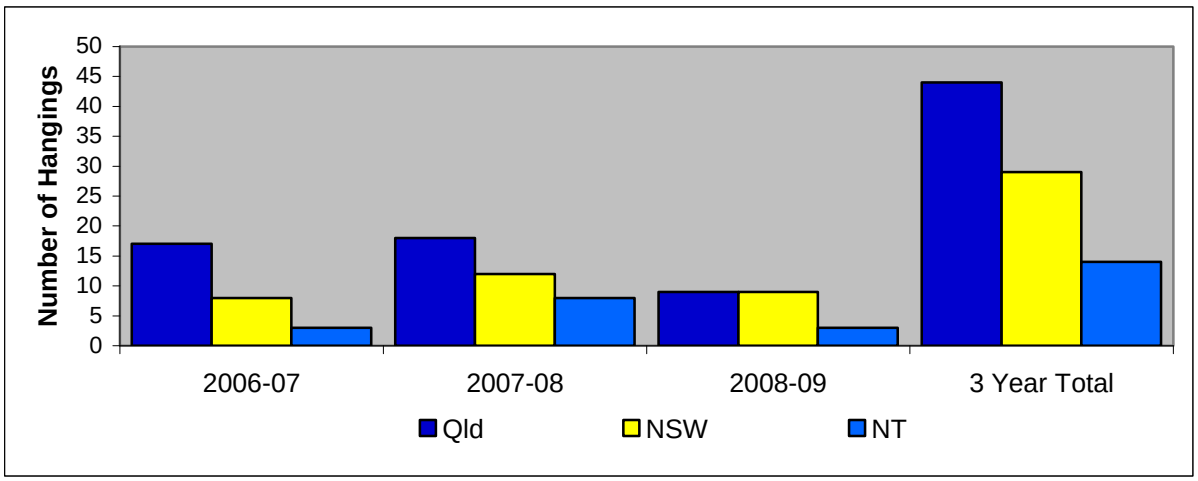
	Qld		NSW		NT	
Year of Death	No	Rate	No	Rate	No	Rate
2006-07	17	4	8	1	3	11
2007-08	18	4	12	2	8	30
2008-09	9	2	9	1	3	11
3 Year Total	44	3	29	1	14	18

Source: Australian Bureau of Statistics (2009), NSW Child Death Review Team (2009) and Qld Commission for Children and Young People and Child Guardian (2009)

Rates of death are calculated per 100,000 children and young people based on the 2006–07 10-17 years, estimated resident population data.

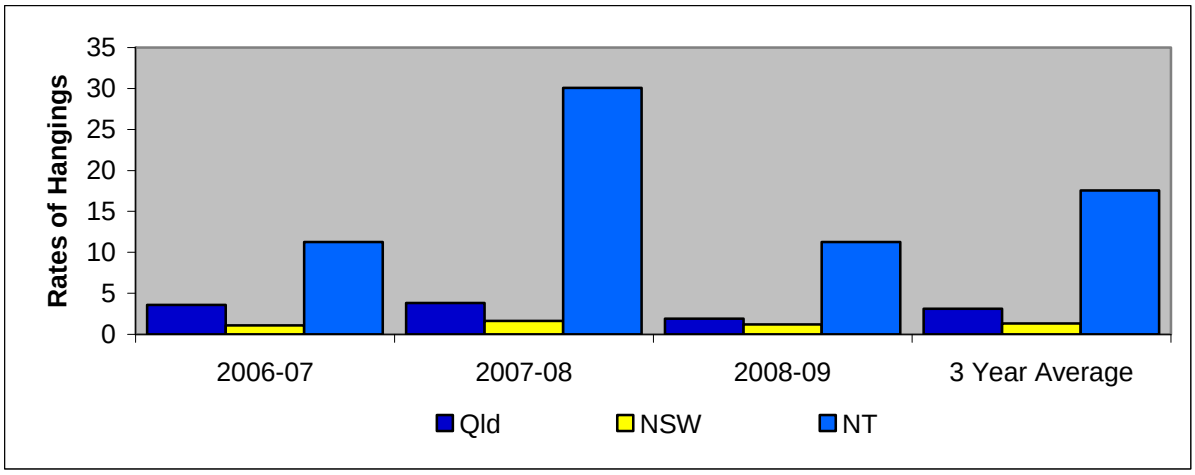
Note: There are currently 9 outstanding deaths for children between the ages of 11 and 17 years of age before the Territory Coroner, some of which may impact on the above figures. Likewise, NSW and Qld may also have cases before their respective Coroner.

Figure 21: Number of Hangings by Jurisdiction 10 – 17 Years, 2006-2009



As a result of the specific nature of the type of child death being analysed, the numbers are quite volatile and vary considerably from year to year especially in the NT with a much smaller population size. Therefore, it is more appropriate to view the numbers on a 3 year aggregated basis.

Figure 22: Rates of Suicide by Hanging, by Jurisdiction, Children aged 10 – 17 Years 2006-2009



The rates of child deaths by hanging indicate that the NT may have a substantially higher rate than both Qld and NSW with the NT's 3 year aggregate rate of 18 being over 13 and 5 times higher than those of NSW and Qld respectively.

The NT appears to have a higher child suicide rate than that of other jurisdictions in Australia. However, those rates are not as disproportionate with other jurisdictions as the rates relating to the child deaths by the means of hanging. When comparing rates involving the NT it should be noted that because of the low population numbers in the NT even rates of an aggregated period such as this can be volatile. Even in light of this these numbers, though only indicative, suggest that the NT has a considerable problem regarding this method of self-harm and that it almost exclusively affects young Aboriginal people. This is likely to be a specific focus of consideration for the committee in the coming year.

Chapter 7

Summary of Key Findings

The data presented for 2006-2009 in Chapter 5 along with the historical and national context provided in Chapter 4 allow the Committee to make balanced and informed observations and findings relating to child deaths in the NT. There are several major findings that give cause for serious concern:

1. The child death rate in the NT continues to be higher than other jurisdictions throughout Australia and particularly in infants among whom the rate is almost double that of the national average.
2. Aboriginal children make up 43% of infants and children in the NT, but are markedly over-represented in mortality statistics with 73% of the NT resident child deaths. Overall NT Aboriginal children are three and a half times more likely to die during childhood than NT non-Aboriginal children. Over-representation of Aboriginal child deaths is also apparent nationally, however at a much lesser extent than in the NT.
3. There was an increase in the number of stillbirths recorded in 2009 to that of the previous two years. However, this is slightly offset by the reduced number of infant deaths in that corresponding year.
4. The leading Underlying Causes of Death (UCOD) were Perinatal Conditions (32%) and External Causes (26%). Child deaths as a result of Perinatal Conditions and Congenital Malformations (11%) are prominent during the first year of life. Child deaths are much less common after infancy before increasing again among children in the 10-17 years age bracket. Deaths among these older children are most commonly a result of external causes, which includes events such as traffic accidents, drowning, intentional self-harm and poisoning.
5. In the 2006-2008 period, 15 child deaths resulted from intentional self-harm. All of these deaths were Aboriginal children and all but one was the result of hanging. Preliminary comparisons with Qld and NSW indicate that NT death rates from self-harm were at least 5 times and up to 13 times higher than these other jurisdictions respectively.

On a positive note and despite these serious concerns:

6. The infant death rate between 1998 and 2008 has decreased nationally and by an even greater extent in the NT where rates have halved.
7. In 2009, there were 46 child deaths in the NT, which is the lowest annual number in the 2006-2009 period captured by the Committee. While this is encouraging it should be noted that the NT has a relatively small child population and child death numbers can be volatile.
8. The reduction in child deaths in 2009 is a result of the absence of self-harm events and the reduction in infant deaths for that year.
9. There has been a general pattern of decline in perinatal deaths over recent years which is consistent with historical trends, even though there was a slight increase in the total for 2009, which can be attributed to a spike in the stillbirth figures for that year.

Many of these key findings are a continuation of the concerns expressed by the Committee in the previous report, particularly the high numbers of Aboriginal and infant deaths.

Future Directions

The Committee will continue to develop the Child Death Register to include not just demographic information and cause of death data but also specific socio-economic factors regarding the death such as alcohol consumption and interaction with the child protection system.

The high incidence of suicides will be further examined by the Committee. There will be a focus on determining if risk factors that can lead to this behaviour, such as alcohol consumption, has a measured affect on the frequency of these types of child deaths. This is particularly relevant to alcohol consumption in light of Government's focus on restricting the supply of alcohol, limiting high-risk consumption and an emphasis on community based alcohol management plans. The educational programs and interventions that take place to help minimise the risk of these types of deaths occurring may also be explored to provide some context for the Committee regarding this issue. This will allow the Committee to provide appropriate policy recommendations to Government to prevent or reduce this type of death.

The co-sponsorship of research into Aboriginal fetal and infant deaths will be monitored by the Committee. It is anticipated that the research will provide insight into the relationship between these categories of death. Other research opportunities will also be explored to provide insight into child deaths.

One of the core functions of the Committee is to contribute a national collection of child death data and in this context it is a priority for the Committee to contribute to national discussions regarding the establishment of such a database with dialogue occurring within the Australian and New Zealand Child Death Review and Prevention Group. With the intention for the child death data to include socio-economic factors such as interaction with child protection systems, a national collection would also assist in facilitating one of the 12 national priorities under the National Framework for Protecting Australia's Children. That particular priority is to focus on enhancing the evidence base relating to child protection.

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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.

(2) 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.

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

(4) 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

NT Underlying Causes of Child Deaths by specific event 2006–2009

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Diarrhoea and gastroenteritis of presumed infectious origin	A09		1			1
Melioidosis, unspecified	A24.4		1			1
Whooping cough due to Bordetella pertussis	A37.0			1		1
Septicaemia due to Streptococcus pneumoniae	A40.3				1	1
Streptococcus Septicaemia, unspecified	A40.9			1		1
Septicaemia, unspecified	A41.9			1		1
Unspecified viral encephalitis	A86				1	1
A00-B99 Certain infectious and parasitic diseases	(Infectious and Parasitic Diseases)		2	3	2	7
Malignant neoplasm of Submandibular gland	C08.0				1	1
Malignant neoplasm of rectum	C20			1		1
Malignant neoplasm of brain, unspecified location	C71.9			1		1
Acute lymphoblastic leukaemia without mention of remission	C91.00	1				1
Benign neoplasm of Heart	D15.1	1				1
C00-D48 Neoplasms	(Neoplasms)	2		2	1	5
Organ-limited amyloidosis	E85.4			1		1
Volume depletion (Dehydration)	E86				1	1
E00-E90 Endocrine, nutritional and metabolic diseases	(Endocrine, Nutritional and Metabolic Diseases)			1	1	2
Meningitis (Unspecified)	G03.9				1	1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Sequelae of inflammatory diseases of central nervous system	G09				1	1
Motor neuron disease	G12.2	1				1
Muscular dystrophy	G71.0				1	1
Spastic quadriplegic cerebral palsy	G80.03			1		1
Cerebral palsy, unspecified	G80.9	1				1
Spastic Tetraplegia	G82.4				1	1
G00-G99 Diseases of the nervous system	(Nervous System)	2		1	4	7
Acute rheumatic heart disease, unspecified	I01.9		1			1
Disorders of both mitral and aortic valves	I08.0	1				1
Myocarditis, unspecified	I51.4		4			4
Intercerebral haemorrhage, unspecified	I61.9	1				1
Subdural haemorrhage (acute)(nontraumatic)	I62.0		1			1
Arteritis, unspecified	I77.6		1			1
I00-I99 Diseases of the circulatory system	(Circulatory System)	2	7			9
Bronchopneumonia, unspecified	J18.0		1			1
Acute bronchiolitis, unspecified	J21.9			1		1
Asthma, unspecified	J45.9		1			1
Bronchiectasis	J47			1		1
Other disorders of lung	J98.4	1				1
J00-J99 Diseases of the respiratory system	(Respiratory System)	1	2	2		5
Fetus and newborn affected by other maternal conditions	P00.8		1			1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Fetus and newborn affected by incompetent cervix	P01.0			1		1
Fetus and newborn affected by premature rupture of membranes	P01.1		1	2	3	6
Fetus and newborn affected by other forms of placental separation and haemorrhage	P02.1	1				1
Fetus and newborn affected by other and unspecified morphological and functional abnormalities of placenta	P02.2	2				2
Fetus and newborn affected by chorioamnionitis	P02.7	2	3		1	6
Fetus and newborn affected by other malpresentation, malposition and disproportion during labour and delivery	P03.1		1			1
Fetus and newborn affected by other specified complications of labour and delivery	P03.8		1	3		4
Extreme immaturity, less than 24 completed weeks	P07.21		2	3	5	10
Extreme immaturity, 24 or more completed weeks but less than 28 completed weeks	P07.22			1	1	2
Other preterm infants (prematurity not otherwise stated)	P07.3				1	1
Severe birth asphyxia	P21.0				1	1
Respiratory distress syndrome of newborn	P22.0		1	1		2
Congenital pneumonia, unspecified	P23.9	1				1
Unspecified pulmonary haemorrhage originating in the perinatal period	P26.9		1			1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Primary atelectasis of newborn	P28.0	1				1
Sepsis of newborn due to streptococcus, group B	P36.0				1	1
Other bacterial sepsis of newborn	P36.8	1				1
Bacterial sepsis of newborn, unspecified	P36.9		2	1		3
Infection specific to the perinatal period, unspecified	P39.9				1	1
Intraventricular (nontraumatic) haemorrhage, grade 1, of fetus and newborn	P52.0			1		1
Unspecified Intraventricular (nontraumatic) haemorrhage of fetus and newborn	P52.3	1		2		3
Intracerebral (nontraumatic) haemorrhage of fetus and newborn	P52.4	1				1
Necrotizing enterocolitis of fetus and newborn	P77	1	2			3
Other specified disturbances of cerebral status of newborn	P91.81		1			1
Fetal death of unspecified cause	P95		1			1
Termination of pregnancy, affecting fetus and newborn	P96.4		1			1
Other specified conditions originating in the perinatal period	P96.89	4	1	1	1	7
P00-P96 Certain conditions originating in the perinatal period	(Perinatal Conditions)	15	19	16	15	65
Anencephaly	Q00.0		1			1
Occipital encephalocele	Q01.2		1			1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Encephalocele, unspecified	Q01.9	1				1
Atresia of foramina of Magendie and Luschka (Dandy-Walker syndrome)	Q03.1	1				1
Reduction anomalies of cerebellum	Q04.33	1				1
Other specified congenital malformations of brain (Macrogyria)	Q04.8			1		1
Congenital malformations of brain, unspecified	Q04.9		1			1
Thoracic spina bifida with hydrocephalus, closed, cystica, covered with skin or membrane	Q05.12		1			1
Discordant ventriculoarterial connection	Q20.31			1		1
Tetralogy of Fallot	Q21.3	1		1		2
Congenital malformation of heart, unspecified	Q24.9				1	1
Coarctation of aorta	Q25.13			1		1
Total anomalous pulmonary venous connection	Q26.2				1	1
Other specified congenital malformations of intestine	Q43.89				1	1
Cystic renal dysplasia, bilateral	Q61.42	1				1
Gastroschisis	Q79.3				1	1
Congenital malformation syndromes predominantly affecting facial appearance (Pierre Robin sequence)	Q87.06				1	1
Down syndrome, unspecified	Q90.9	1	1			2
Edwards syndrome, unspecified	Q91.3				1	1
Patau syndrome, unspecified	Q91.7		1			1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Other specified trisomy and partial trisomy of autosomes	Q92.8				1	1
Other deletions from the autosomes	Q93.8	1				1
Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities	(Congenital Malformations)	7	6	4	7	24
Sudden infant death syndrome	R95	3		1	1	5
Instantaneous death	R96.0			1		1
Death occurring less than 24 hours from onset of symptoms, not otherwise explained	R96.1	4	1	3	1	9
Awaiting Coroner's Findings	R99.0		1	1	7	9
Unknown Cause, Death occurred interstate	R99.1				1	1
R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	(Ill-defined Symptoms and Signs)	7	2	6	10	25
Heat exhaustion, anhidrotic, heat prostration due to water depletion	T67.3			1		1
S00-T98 Injury, poisoning and certain other consequences of external causes	(Injury and Poisoning)			1		1
Pedestrian injured in collision with car, pick-up truck or van (non traffic accident)	V03.0		1	1		2
Pedestrian injured in collision with car, pick-up truck or van (traffic accident)	V03.1	1	1	2		4

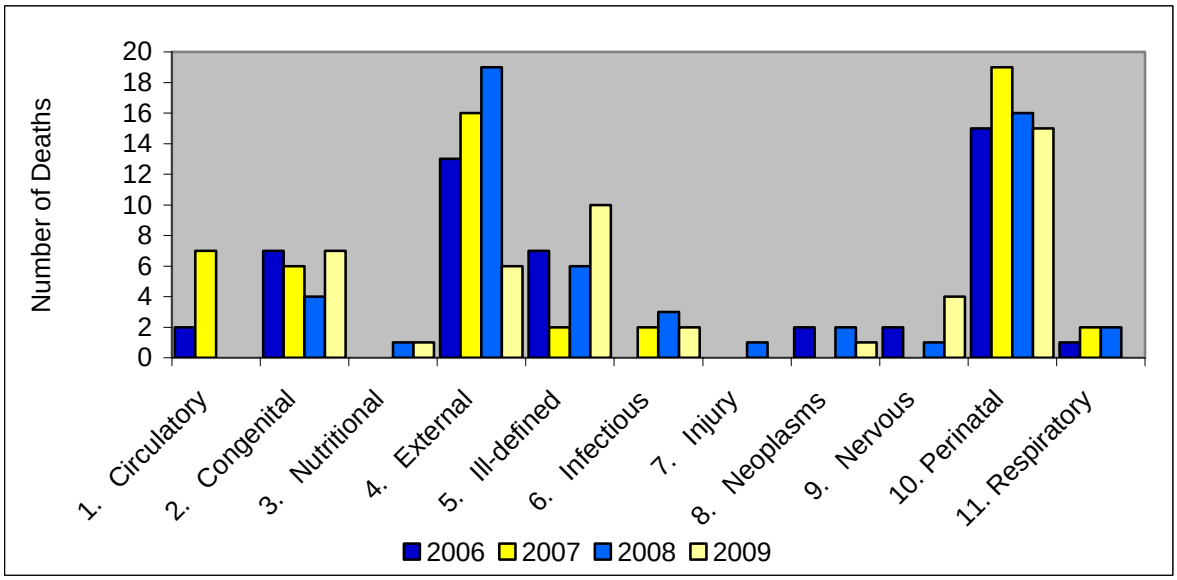
ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Car occupant injured in collision with pedestrian or animal (passenger injured in traffic accident)	V40.61			1		1
Car occupant injured in collision with car, pick-up truck or van (passenger injured in traffic accident)	V43.69	1				1
Car occupant injured in noncollision transport accident (driver injured in traffic accident)	V48.51		1			1
Car occupant injured in noncollision transport accident (driver injured in traffic accident)	V48.59	1				1
Car occupant injured in noncollision transport accident (passenger injured in traffic accident)	V48.60			1		1
Car occupant injured in noncollision transport accident (passenger injured in traffic accident)	V48.61		1	3		4
Car occupant (any) injured in unspecified traffic accident	V49.9		1			1
Occupant of pick-up truck or van injured in noncollision transport accident (person on outside of vehicle injured in traffic accident	V58.7		1			1
Occupant (any) of heavy transport vehicle injured in other specified transport accidents	V69.8			1		1
Driver of all-terrain or other off-road motor vehicle injured in nontraffic accident	V86.52				1	1
Other and unspecified water transport accidents (accident to nonoccupant of watercraft	V94.3				1	1

ICD-10 AM Coding Descriptions	UCOD	Year of Death				
		2006	2007	2008	2009	Total
Struck by thrown, projected or falling object	W20	1				1
Striking against or struck by other objects	W22		1			1
Bitten or struck by crocodile or alligator	W58	1			1	2
Drowning and submersion while in swimming pool	W67.0			1		1
Drowning and submersion while in natural water	W69				1	1
Other specified drowning and submersion	W73			1		1
Other accidental hanging and strangulation	W76	2				2
Exposure to uncontrolled fire in building or structure	X00				1	1
Contact with box jellyfish	X26.00		1			1
Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours	X46	1	1	1		3
Exposure to unspecified factor	X59			2	1	3
Intentional self-harm by hanging, strangulation and suffocation	X70.0	5	5	4		14
Intentional self-harm by other and unspecified firearm discharge	X74.2		1			1
Neglect and abandonment, other family member	Y06.02		1			1
Contact with blunt object, undetermined intent	Y29			1		1
V01-Y98 External causes of morbidity and mortality	(External Causes)	13	16	19	6	54
Total		49	54	55	46	204

Appendix 3

NT Underlying Causes of Child Deaths

Figure 23: NT Underlying Causes of Child Deaths by Classification Grouping 2006–2009



Key to Categories:

1. Circulatory System;
2. Congenital Malformations;
3. Endocrine, Nutritional and Metabolic Diseases;
4. External Causes;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Injury and Poisoning;
8. Neoplasms;
9. Nervous System;
10. Perinatal Conditions;
11. Respiratory System.

Figure 24: NT Underlying Causes of Infant Deaths by Classification Grouping 2006–2009

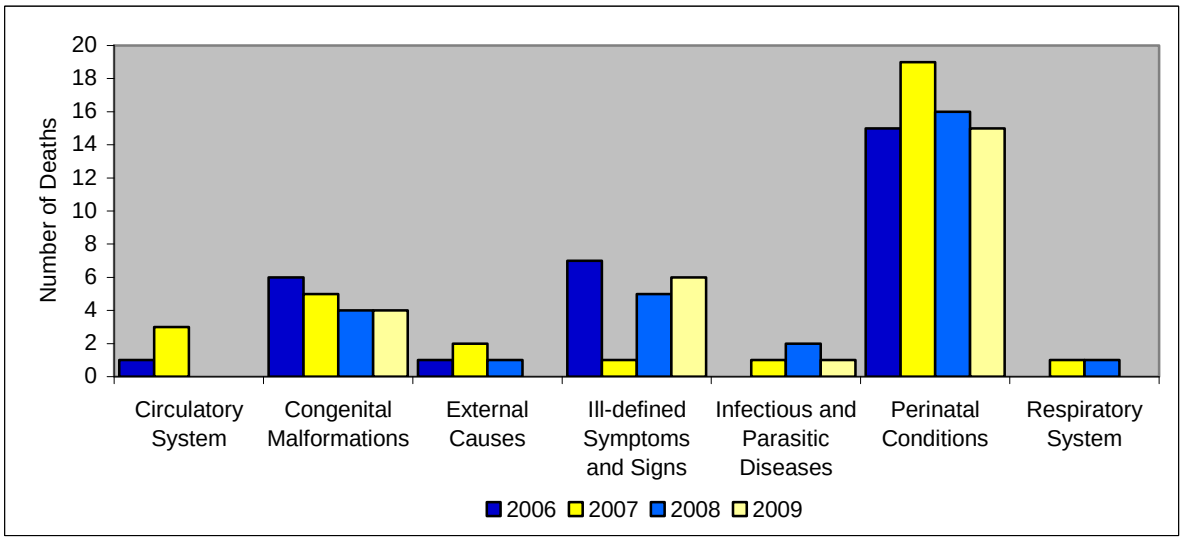
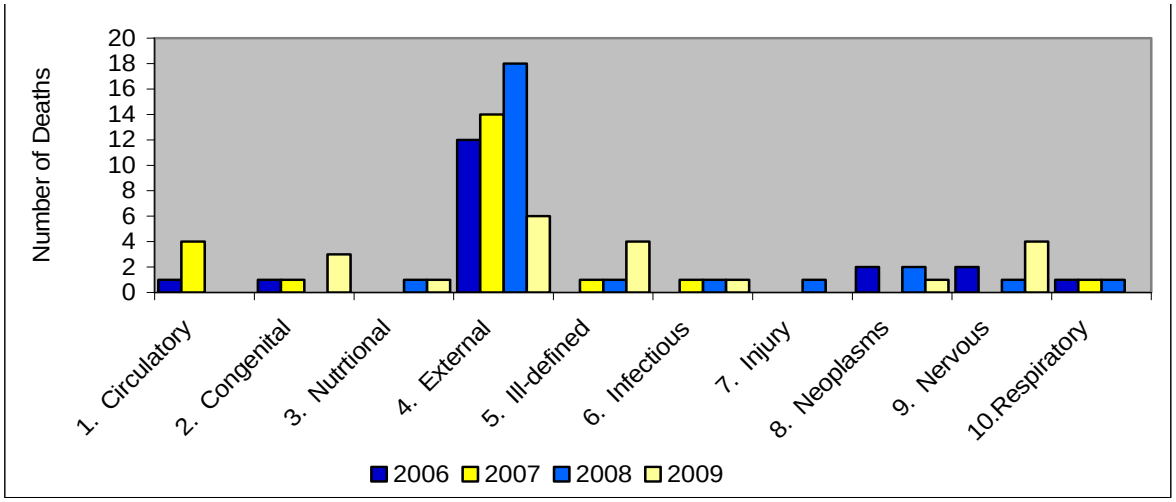


Figure 25: NT Underlying Causes of Deaths 1-17 years and Classification Grouping 2006–2009



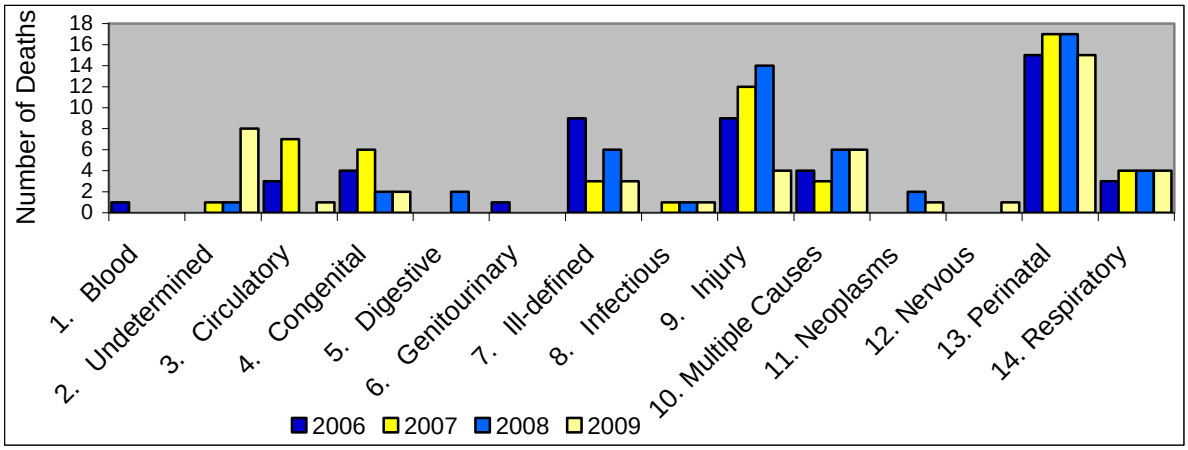
Key to Categories:

1. Circulatory System;
2. Congenital Malformations;
3. Endocrine, Nutritional and Metabolic Diseases;
4. External Causes;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Neoplasms;
8. Nervous System;
9. Injury and Poisoning;
10. Respiratory System.

Appendix 4

NT Causes of Child Deaths

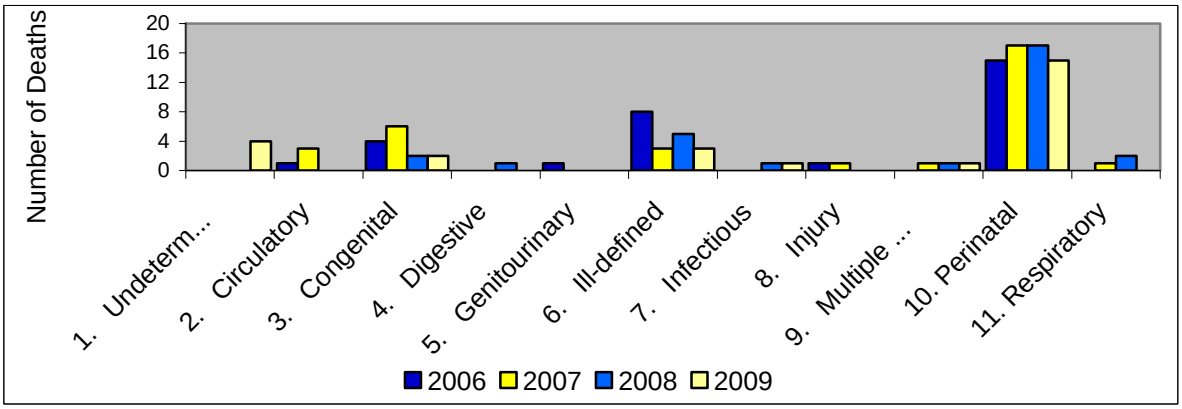
Figure 26: NT Causes of Child Deaths by Classification Grouping 2006–2009



Key to Categories:

1. Blood diseases and disorders involving the immune mechanism;
2. Cause of death not determined;
3. Circulatory system;
4. Congenital Malformations;
5. Digestive System;
6. Genitourinary System;
7. Ill-defined Systems and Signs;
8. Infectious and Parasitic Diseases;
9. Injury and Poisoning;
10. Multiple Causes of Death;
11. Neoplasms;
12. Nervous System;
13. Perinatal Conditions;
14. Respiratory System.

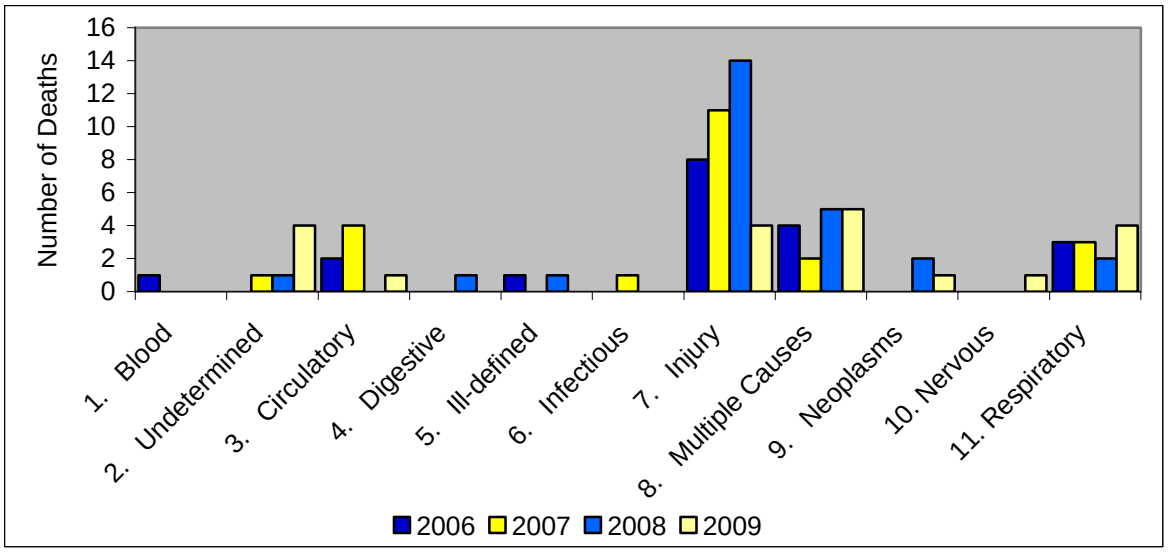
Figure 27: NT Causes of Infant Deaths by Classification Grouping 2006–2009



Key to Categories:

1. Cause of death not determined;
2. Circulatory System;
3. Congenital Malformations;
4. Digestive System;
5. Genitourinary System;
6. Ill-defined Symptoms and Signs;
7. Infectious and Parasitic Diseases;
8. Injury and Poisoning;
9. Multiple Causes of Death;
10. Perinatal Conditions;
11. Respiratory System.

Figure 28: NT Causes of Deaths by Age 1-17 and Classification Grouping 2006–2009



Key to Categories:

1. Blood diseases and disorders involving the immune mechanism;
2. Cause of death not determined;
3. Circulatory system;
4. Digestive System;
5. Ill-defined Systems and Signs;
6. Infectious and Parasitic Diseases;
7. Injury and Poisoning;
8. Multiple Causes of Death;
9. Neoplasms;
10. Nervous System;
11. Respiratory System.

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