

A stylized map of the Northern Territory of Australia is centered on a background of a bright blue sky with soft, white clouds. Numerous white birds, resembling terns or similar seabirds, are scattered across the sky, some in flight and others resting on the map's landmass. The overall color palette is dominated by various shades of blue and white, creating a clean and serene atmosphere.

Northern Territory Child Deaths Review and Prevention Committee

Annual Report 2016-2017



Northern Territory Child Deaths Review and Prevention Committee

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

Postal Office of the Children's Commissioner, Northern Territory
PO Box 40598 Casuarina NT 0811

Telephone 08 8999 6076

Facsimile 08 8999 6072

E-mail occ@nt.gov.au

Web occ.nt.gov.au

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ISSN 1837-3852

Printed by UniPrint

Suggested citation

CDRPC (2017). *Annual Report 2016-2017*,
Northern Territory Child Deaths Review and Prevention Committee,
Office of the Children's Commissioner, Darwin

This report is available in electronic format on the
Office of the Children's Commissioner's website located at www.occ.nt.gov.au

Child Deaths Review and Prevention Committee

Letter to Parliament

The Honourable Natasha Fyles MLA
Attorney-General and Minister for Justice
Parliament House
Mitchell Street
DARWIN NT 0800

Dear Minister

I am pleased to provide you with the Annual Report of the Northern Territory Child Deaths Review and Prevention Committee for 2016-2017, in accordance with section 213 of the *Care and Protection of Children Act*.

Yours sincerely,



Ms Colleen Gwynne
Convenor
NT Child Deaths Review and Prevention Committee
31 October 2017



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Northern Territory Child Deaths Review and Prevention Committee

Members as at 30 June 2017

Ms Colleen Gwynne

Convenor, NT Child Deaths Review and Prevention Committee
Children's Commissioner, NT

Ms Leonie Warburton

Senior Manager,
Quality and Practice Integrity
Territory Families, NT

Ms Victoria Pollifrone

Deputy Convenor,
Manager, Children and Families
Commonwealth Department
Social Services, NT Office

Mr Peter Pangquee

Principal, Aboriginal and Torres Strait Islander
Health Practitioner Advisor
Department of Health, NT

Detective Superintendent

Kristopher Evans

Officer in Charge of Sex Crimes Unit,
Child Abuse Taskforce
NT Police Force, Darwin NT

Ms Annette Flaherty

Consultant
Darwin, NT

Ms Priscilla Collins

CEO, North Australian Aboriginal Justice
Agency (NAAJA) Darwin NT

Professor Gary Robinson

Director, Centre for
Child Development and Education
Menzies School of Health Research
Advisor to the Committee

Dr Steven Guthridge

Director, Health Gains Planning
Department of Health NT

Professor Jeremy Oats

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

Dr Charles Kilburn

Co-Director, Women Children and Youth Division,
Royal Darwin Hospital, Department of Health, NT

Associate Professor Robert Parker

Director of Psychiatry,
Top End Mental Health Services,
Department of Health. NT

Committee Secretariat

Ms Marg Sullivan

Executive Assistant,
Office of the Children's Commissioner

Glossary of Terms

ABS	Australian Bureau of Statistics
AGD	Department of Attorney –General and Justice, NT
AIFS	Australian Institute of Family Studies
ANZCDR&PG	Australia and New Zealand Child Death Review and Prevention Group
ASGC	ABS Australian Standard Geographical Classification
BDM	Northern Territory Office of the Registrar of Births, Deaths and Marriages
CDR	Child Death Register
CDRPC	Child Deaths Review and Prevention Committee
COD	Cause of Death
Committee	Child Deaths Review and Prevention Committee
Coroner	Office of the NT Coroner
DoH	Department of Health, NT
ICD-10 AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision – Australian Modified
LGA	Northern Territory Local Government Areas
Menzies	Menzies School of Health Research
NCIS	National Coronial Information System
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
Register	Child Deaths Register
SUDI	Sudden Unexpected Death in Infancy
SIDS	Sudden Infant Death Syndrome
TF	Territory Families
the Act	<i>Care and Protection of Children Act 2007</i>
UCOD	Underlying Cause of Death
WHO	World Health Organisation

Definitions

Aboriginal

The following definition is provided for the term Aboriginal in section 13 of the Act:

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

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

Cause of death (COD)

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

Child

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

Child death

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

Congenital malformations

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

Greater Darwin

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

Infancy

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

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

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*

Neonatal

The neonatal period extends from birth to 28 days of age. A neonatal death is the death of a live born baby within 28 days of birth³

Perinatal

The Perinatal period extends from 20 weeks gestation to 28 days following birth. A perinatal death is a fetal death (of at least 20 weeks gestation or at least 400 grams birthweight⁴) or a neonatal death (of a live baby within 28 days from birth).

Post-neonatal

The post-neonatal period is the period from 28 days to 1 year of age.

Rest of the NT

Rest of the NT incorporate those areas outside the City of Darwin, the City of Palmerston and the Litchfield Shire.

Stillbirth (fetal death)

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

Sudden unexpected death in infancy (SUDI)

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

Underlying cause of death (UCOD)

- (a) The disease or injury which initiated the train of morbid events leading directly to death; or
- (b) The circumstances of the accident or violence, which produced the fatal injury (WHO).⁶

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

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 Ibid

5 Ibid

6 op cit.

Foreword

This is the ninth Annual Report of the Northern Territory Child Deaths Review and Prevention Committee. The report is based on information provided to the Committee on the 34 deaths of children whose usual place of residence is the NT and of 30 stillbirths that occurred during the calendar year 2016. The report also provides summary information on 216 child and infant deaths that occurred in the five-year period 2012-2016.

This will be the last report produced by the Office of the Children's Commissioner as the responsibility for the Child Deaths Review and Prevention Committee will be transferred to the Coroner's Office.

The death of any child is a tragedy and the members of the Committee extend their sincere condolences to the family, friends and communities of the children and young people cited in this report. In highlighting the circumstances relating to these deaths and by conducting research based on identified patterns and trends, the Committee's objective is to effect change that will prevent and reduce child deaths, accidents and diseases in the NT.

In addition to providing an analysis of the child and infant deaths that occurred during 2016 and the preceding four years, this report provides information on injury related child deaths released by the NT Child Deaths Review and Prevention Committee and tabled in Parliament.

The Committee is concerned about the cases of intentional self-harm by hanging, strangulation and suffocation (25) reported within the external causes of morbidity and mortality category. The numbers are significant considering our small population. The Committee previously commissioned research into suicide however the recent trend and increase in intentional self-harm will require further examination.

Extremely low birthweight (14) fetuses and newborn affected by chorioamnionitis (14) remain the highest underlying causes of child deaths originating in the perinatal period. This requires further examination to understand the drivers and what prevention practices are in place.

This year we saw the resignation from the Committee of 2 members, Dr Annie Whybourne and Ms Vicki Baylis. Both members made invaluable contributions and on behalf of the Committee I would like to express our sincere gratitude.



Ms Colleen Gwynne
Convenor
NT Child Deaths Review and Prevention Committee

31 October 2017

Executive Summary

Background and overview of the Committee activities

The Committee is established pursuant to Part 3.3 of the *Care and Protection of Children Act* (the Act). The purpose of the child deaths review process undertaken by the Committee is to assist in the prevention and reduction of child deaths in the Northern Territory. It achieves this through:

- a) Maintaining a database on child deaths;
- b) Conducting research about child deaths, diseases and accidents involving children and
- c) Contributing to the development of appropriate policy to deal with such deaths, diseases and accidents.

The Committee's specific functions are set out in the Act.

- d) Action on issues arising from the on-going quality assurance of the Child Deaths Register (the Register);

Issues relating to child deaths data in the NT

Chapter 2 examines contextual factors and sources of data for the work of the Committee. This includes data obtained from national bodies such as the Australian Bureau of Statistics (ABS) and the National Coroners Information System (NCIS), which provide data on child deaths and demographics.

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

Other issues include the following:

- Although this is the Committee's 2016-2017 Annual Report, the focus is on child deaths for the calendar year 2016 with a further overview of calendar years 2012-2016.
- Presentation of data is based on the actual year of death rather than the year of registration of the death which is used by other agencies (e.g. ABS);
- ICD-10-AM codes are used for classifying the cause of death in line with the practice of most other similar committees within Australia;
- For all child deaths that involved a review by the NT Coroner, the delivery of coronial findings follows a thorough coronial investigation to determine a cause of death before it is reported to BDM. This may take months, possibly years to complete these investigations, hence the delay in reporting these deaths;
- The need to obtain additional data beyond that supplied by BDM;
- The need to canvas other jurisdictions including BDM registries in other states and territories, for information on the deaths of NT children that occurred interstate.

Child deaths in the NT, 2012-2016

Chapters 3 and 4 provide data on the deaths of children whose usual place of residence is the NT. The data for 2016 is current but it is important to view data aggregated over five years when determining trends or interpreting changes.

2016 snapshot

34 deaths of children whose usual place of residence is in the NT.

- » 18 (52.9%) were male; 16 (47.1%) were female;
- » 26 (76.4%) were Aboriginal; 8 (23.5%) were non-Aboriginal
- » 24 (70.5%) were from outside the Greater Darwin area.

34
deaths
in 2016

23 (67.6%) of the 34 were infant deaths; 6 (17.6%) were 1 to 4 years olds, 3 (8.8%) were 5 to 9 year olds, 1 (2.9%) was 10-14 years old and 1 (2.9%) was 15-17 years old.

Of the 23 infant deaths, 12 (52.1%) were female and 11 (47.8%) were male; 18 (78.2%) were Aboriginal and 5 (21.7%) were non-Aboriginal.

Of the 23 infant deaths, 15 (65.2%) were neonatal (under 1 month old) deaths, of which 13 (86.6%) were Aboriginal and 2 (13.3%) were non-Aboriginal.

30
stillbirths
in 2016

In addition, **30 stillbirths** were registered as having occurred in the NT. 11 (36.6%) were female and 19 (63.3%) were male; 15 (50%) were Aboriginal and 15 (50%) were non-Aboriginal.

There were 45 perinatal (30 stillbirths + 15 neonatal) deaths registered in the NT: 28 (62.2%) were Aboriginal and 17 (37.7%) were non-Aboriginal.

2012-2016 aggregated snapshot

216 deaths of children who were usually resident in the NT:

- » 108 (50%) were female and 108 (50%) were male;
- » 157 (72.6%) were Aboriginal and 59 (27.3%) were non-Aboriginal
- » 148 (68.5%) were from outside the urban Greater Darwin area.

216
deaths over
2012 - 2016

116 (53.7%) were infants, 29 (13.42%) were 1 to 4 years old, 12 (5.5%) were 5 to 9 years old, 26 (12.03%) were 10 to 14 years old and 33 (15.2%) were 15 to 17 years old.

Of the 116 infant deaths, 61 (52.5%) were females and 55 (47.4%) were males;

85 (73.27%) were Aboriginal and 31 (29.7%) non-Aboriginal.

Of the 116 infant deaths, 78 were neonates, under one month of age of which 59 (75.6%) were Aboriginal and 19 (24.3%) were non-Aboriginal.

In addition, 164 stillbirths were registered in the NT: 90 (54.8%) were male and 74 (45.1%) were female. 83 (50.6%) were non-Aboriginal and 81 (49.3%) were Aboriginal.

There were 242 perinatal (164 stillbirths + 78 neonatal) deaths registered in the NT 140 (57.8%) were Aboriginal and 102 (42.1%) were non-Aboriginal.

Chapter 1 – Introduction

Introduction

This is the Child Deaths Review and Prevention Committee's (CDRPC or Committee) ninth annual report. It provides information related to the deaths of 34 children under the age of 18 years whose usual place of residence is in the Northern Territory (NT) and 30 stillbirths registered in 2016. The report also includes information on child deaths and stillbirths from 2012 to 2016 for comparative and historical purposes.

Functions of the Committee

The Committee's function 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 rates 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;

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.

The Committee is required by legislation to conduct at least three meetings a year. For the financial year 2016-2017 the Committee held three meetings and has therefore fulfilled this statutory requirement.

The Child Deaths Register

Under the *Care and Protection of Children Act*, there is a statutory obligation for the CDRPC to establish and maintain a Child Deaths Register (the Register). The Register contains information relating to the deaths of children and young people under the age of 18 years whose usual place of residence is the NT. Section 208 of the Act defines a child death as:

- a) the death of a child who usually resided in the Territory (whether the death occurred in the Territory or not); or
- b) a stillbirth as defined in the *Births, Deaths and Marriages Registration Act* that occurred in the Territory.

The Register contains information related to date of birth, date of death, date of registration, age, gender, Aboriginal and Torres Strait Islander status, place of birth, place of death, usual place of residence and family details. Information is also gathered in relation to the underlying causes of deaths and external factors which may have contributed to the death. Information in the Register is predominantly sourced from data held by a number of NT government agencies, including the Department of the Attorney-General and Justice, Department of Health (DoH) and Territory Families (TF). Information is also provided by government funded health clinics and private medical centres.

Information relating to the deaths interstate of children whose usual place of residence is the NT, is sourced either from child death registers of other jurisdictions or the respective state or territory BDM's. Due to a number of legislative impediments preventing some jurisdictions sharing identifiable information relating to child deaths, including children whose usual place of residence is in the Northern Territory, it is not possible to report on these deaths.

Activities of the Committee

National representation and engagement

The CDRPC has representation on the Australian and New Zealand Child Death Review and Prevention Group (ANZCDR&PG), which comprises representatives from all the Australian jurisdictions and New Zealand.

The aim of the ANZCDR&PG is to identify, address and potentially decrease the number of infant and children deaths by sharing of information across jurisdictions and working collaboratively to improve national and international reporting.

One of the projects that the ANZCDR&PG agreed to is the collation of information on cases of sudden unexplained deaths in infants (SUDI), using the New South Wales Child Death Review Team's approach to classifying these cases. This project is based on SUDI cases that occurred in 2015. The goal of this classification is to draw attention to modifiable risk factors so that prevention efforts can be targeted.

Modifiable risk factors can include placing infants to sleep prone (on their front); sharing a bed with an infant; placing infants in bedding not designed for them; exposing infants to tobacco smoke; excess thermal insulation and overheating; and placing loose bedding or other items in an infant's sleep environment.

Chapter 2 – Issues relating to child death data in the Northern Territory

Sources of data on child deaths

Australian Bureau of Statistics (ABS)

The Australian Bureau of Statistics (ABS) publishes a series of reports and tables on deaths that occur in all Australian jurisdictions.

There are a number of other limitations with the ABS data, which include: the time lag between the recorded date of death with the NT BDM Registry and the publication of the ABS reports, only the medical causes of death are recorded and not the related risks such as the social factors that may have contributed to the deaths. The ABS child death tables do not provide data for each individual year of age so 15, 16 and 17 years olds, for example, are included in the 15-19 age grouping.

Registry of Births, Deaths and Marriages

The Department of the Attorney-General and Justice's (AGD) Registry of Births, Deaths and Marriages provides details of all child deaths occurring in the NT such as name, residence, date of birth, age, gender, Aboriginal or Torres Strait Islander status, date and place of death and where available the cause of death.

The Registry of Births, Deaths and Marriages also provides information relating to stillbirths in the NT including date and place of birth, gestation age and gestation weight.

The National Coroner's Information System

The Committee obtains information such as Coronial Findings, Autopsy Reports, Toxicology Reports and Police Reports related to reportable deaths in the NT from the National Coroner's Information System (NCIS).

Office of the NT Coroner

The Office of the NT Coroner provides information to NCIS related to deaths of children deemed to be reportable under provisions contained in the *Coroner's Act*.

A reportable death is defined as a death that:

- appears to have been unexpected, unnatural or violent;
- appears to have resulted, directly or indirectly from an accident or injury;
- occurred during an anaesthetic or as a result of an anaesthetic and is not due to natural causes;
- occurred when a person was held in, or immediately before death, was held in care or custody;
- was caused or contributed to by injuries sustained while the person was held in custody;
- is of a person whose identity is unknown;
- and in certain other circumstances.

The death of a child that is considered to have occurred whilst being in care or custody includes those circumstances:

- where the child or young person is deemed to be 'in care' in accordance with provisions contained in the *Care and Protection of Children Act*; or
- where the child or young person is an involuntary patient under the *Mental Health and Related Services Act*, whether in hospital or temporarily removed from hospital; or
- if the young person's death occurs in a detention centre approved under the *Youth Justice Act*.

Other sources of data

Doctor issued death certificates and other relevant information required by the Committee is provided by the Department of Health (DoH) and other health service providers.

Confidentiality of information

The *Care and Protection of Children Act* contains provisions that help ensure the confidentiality of information obtained by the Committee in the exercising of its statutory responsibilities. It is an offence under the Act for a person to disclose, or use information obtained as part of the performance of their functions.

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

Coding cause of death

The Committee uses the International Statistical Classification of Diseases and Related Health Problems, (ICD-10 which was developed by the World Health Organisation, WHO) to code the underlying and multiple causes of death. The ICD-10 is designed to promote international compatibility in the collection, processing, classification and presentation of morbidity and mortality statistics. ICD-10-AM (Australian Modified) 9th Edition has been modified to ensure that the classification is current and appropriate for Australian clinical practice whilst ensuring that international compatibility is maintained.

Calendar year reporting

The Committee has elected to report on child deaths based on the calendar year as opposed to the financial year. The majority of other Australian jurisdictions use the same reporting period.

Chapter 3 – Child deaths in the Northern Territory

This chapter provides statistical data related to child deaths in the calendar year 2016 and for the period 2012-2016. The data includes demographic details relating to age, gender, Aboriginal status and underlying causes of death and whether the child and/or a sibling is known to the child protection system. Updated data is used in the present report so there may be some variations in the data reported for previous years.

Child deaths rates

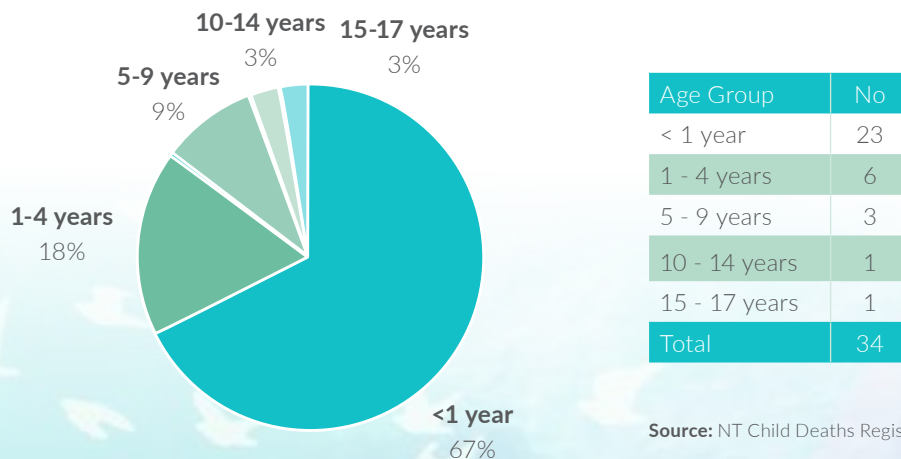
A child death rate is a measure that adjusts the number of deaths for difference in the population size. Child death rates are reported as the number of deaths per 100,000 population of children, with the exception of the number of deaths in infancy which are reported per 1000 live births. Both child death rates and infant death rates are standard units of measurement. Rates within age groups are reported, as age-group specific rates (number of deaths per 100,000 populations)

Child deaths in 2016

Child deaths by age group, NT, 2016

There were 34 child deaths registered in 2016. The highest number of deaths 23 (67.6%) occurred during infancy. There was double the rate of deaths (6 or 17.6%) in the 1 to 4 years age group compared to last year. 3 (8.8%) 5-9 years age group, and 1 (2.9%) in both the 10-14 years and 15-17 years age groups.

Figure 1: Number of child deaths by age group, NT, 2016



Source: NT Child Deaths Register

Child deaths by age group and gender, NT, 2015

Table 1: Number of child deaths by age group and gender and Aboriginal status, NT, 2016

Age Group	Female	Male	Total
< 1 year	12	11	23
1 - 4 years	2	4	6
5 - 9 years	1	2	3
10 - 14 years	1		1
15 - 17 years		1	1
Grand Total	16	18	34
Aboriginal Status			Total
Aboriginal			26
Non-Aboriginal			8
Grand Total			34

Source: NT Child Deaths Register

Child deaths, 2012-2016

Between 1 January 2012 and 31 December 2016, a total of 216 deaths of children normally resident in the NT were registered in the NT.

Child deaths by year, gender and age group, NT, 2012-2016

The majority of child deaths over the five year period occurred during infancy (116 deaths or 53.7% of all child deaths). The age group with the second largest number of deaths was the 15-17 years age group (33 or 15.2%, while the 5-9 years age group had the fewest number of deaths (12 or 5.5%). Although the year dates have changed these figures are similar to last year's figures.

Males made up 50.9% of all children in the NT population (ABS 2016), and accounted for 59.2% of all child deaths over these years.

Table 2: Child deaths by year, gender and age group, NT, 2012-2016

Year and Gender		< 1 year	1-4 years	5-9 years	10-14 years	15-17 years
2012	Female	13	2	3	2	2
	Male	10	4	1	3	6
	Subtotal	23	6	4	5	8
2013	Female	17	3		4	5
	Male	11	4	1	2	5
	Subtotal	28	7	1	6	10
2014	Female	8	4	1	4	6
	Male	11	3	2	4	3
	Subtotal	19	7	3	8	9
2015	Female	11	1		3	3
	Male	12	2	1	3	2
	Subtotal	23	3	1	6	5
2016	Female	12	2	1	1	
	Male	11	4	2		1
	Subtotal	23	6	3	1	1
Total	Female	61	12	5	14	16
	Male	55	17	7	12	17
	Total	116	29	12	26	33

Source: NT Child Deaths Register and ABS 3010, June 2016

Totals may differ from last year's report due to late registrations and interstate deaths

Child deaths by year, Aboriginal status and age group, NT, 2012-2016

In the years 2012-2016, the number of Aboriginal child deaths was substantially greater than the number of non-Aboriginal children. There was a total of 157 (72.6%) deaths of Aboriginal children, which is much greater than the proportion of Aboriginal children (42.9%) in the total NT population for these age groups.

Table 3: Child deaths by year, Aboriginal status and age group, NT, 2012-2016

Year and Aboriginal Status		< 1 year	1-4 years	5-9 years	10-14 years	15-17 years
2012	Aboriginal	16	5	3	5	7
	Non-Aboriginal	7	1	1		1
	Subtotal	23	6	4	5	8
2013	Aboriginal	19	5	1	3	6
	Non-Aboriginal	9	2		3	4
	Subtotal	28	7	1	6	10
2014	Aboriginal	15	5	2	4	6
	Non-Aboriginal	4	2	1	4	3
	Subtotal	19	7	3	8	9
2015	Aboriginal	17	2	1	5	4
	Non-Aboriginal	6	1		1	1
	Subtotal	23	3	1	6	5
2016	Aboriginal	18	4	2	1	1
	Non-Aboriginal	5	2	1		
	Subtotal	23	6	3	1	1
Total	Aboriginal	85	21	9	18	24
	Non-Aboriginal	31	8	3	8	9
	Total	116	29	12	26	33

Source: NT Child Deaths Register

Total may differ from last year's report due to late registrations and interstate deaths

Child deaths by usual residence, age group and Aboriginal status, NT, 2012-2016

Usual residence refers to the child’s usual place of residence as recorded in the BDM register and reported by the parents or next of kin. For the purposes of this report, usual residence has been classified as either Greater Darwin or the Rest of the NT.

In the five year period from 2012 to 2016, the majority of child deaths (148 or 68.5%) occurred among children living outside Greater Darwin region, even though the proportion of NT child population are similar between Greater Darwin and the Rest of NT.

Table 4: Child deaths by usual residence, age group and Aboriginal status, NT, 2012-2016

Age Group	Greater Darwin	%	Rest of NT	%
< 1 year	37	55%	79	53%
1 - 4 years	9	13%	20	14%
5 - 9 years	6	9%	6	4%
10 - 14 years	7	10%	19	13%
15 - 17 years	9	13%	24	16%
Total Aboriginal Status	68	100%	148	100%
Aboriginal	27	40%	130	88%
Non-Aboriginal	41	60%	18	12%
Total	68	100%	148	100%

Source: NT Child Deaths Register

Total may differ from last year’s report due to late registrations and interstate deaths

Child death rates by year, NT, 2012-2016

In this report, population numbers for the denominator are based on ABS Estimated Resident Population data for single years – for children aged 0-17 years in the NT (ABS Cat. 3101.0, 2016). Given the relatively small number of deaths each year in the NT, aggregating data across five years provides a more reliable indicator of the underlying rates.

For the five year period from 2012-2016, there were a total of 216 deaths of NT children. The annualised death rate for this period was 68.9 deaths per 100,000 children. The annual rates are presented in Table 5 and Figure 2. Apart from a higher rate in 2013 there is a suggestion that annual NT death rates are falling. It needs to be remembered that there may be additional deaths in recent years that have not yet been reported.

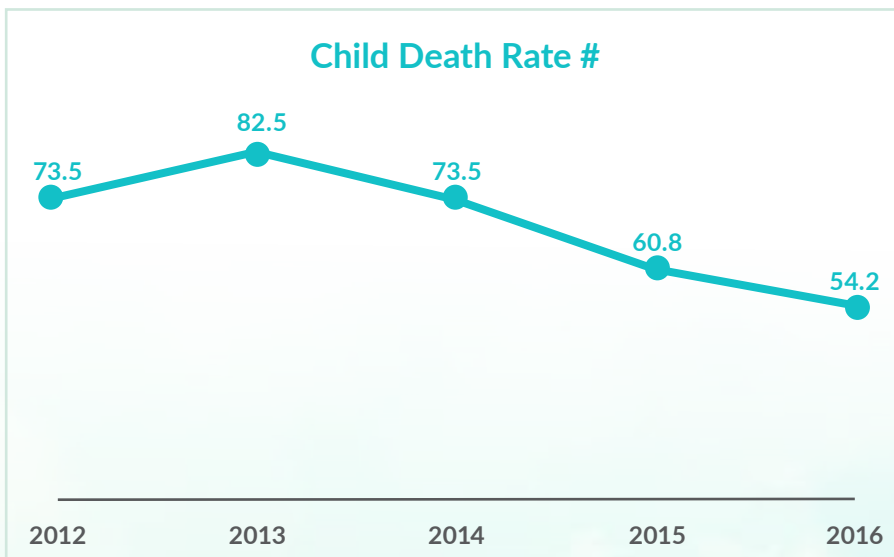
Table 5: Child death rates by year, NT, 2012-2016

Year	Number of Deaths	Rate #
2012	46	73.5
2013	52	82.5
2014	46	73.5
2015	38	60.8
2016	34	54.2
Total	216	68.9

Source: NT Child Deaths Register and ABS 3010, June 2016

per 100,000 children

Figure 2: Child death rates by year, NT, 2012-2016



Child death rates by age group, NT, 2012-2016

Annualised age group specific death rates for the five year period are shown in Table 9. The infant death rate of 582.6 deaths per 100,000 infants reflects the large number of deaths, most in the neonatal period, that occur in this age group and were the majority of all NT child deaths. The 15-17 years age group are the second highest death rate at 71.4 deaths per 100,000 population and the lowest death rate is the 5 to 9 years age group at 13.5 deaths per 100,000 population.

Table 6: Child death rates by age group, NT, 2012-2016

Age Group	Number of Deaths	Rate #
< 1 year	116	582.6
1 - 4 years	29	38.0
5 - 9 years	12	13.5
10 - 14 years	26	31.8
15 - 17 years	33	71.4
Total	216	68.9

Source: NT Child Deaths Register and ABS Cat 3101, June 2016

per 100,000 children

Child death rates by age group and gender, NT, 2012-2016

Of the total of 216 deaths, there were 108 (50%) were male and 108 (50%) were female. The respective rates were 70.9 for females and 67.1 for males with an overall rate of 69 per 100,000 children. Across the 5 year period, the annualised infant death rate was 621.2 per 100,000 infants for females and 544 for males.

Table 7: Child death rates by age group and gender, NT, 2012-2016

Age Group	Female		Male	
	Number of Deaths	Rate #	Number of Deaths	Rate #
< 1 year	61	621.2	55	544.0
1 - 4 years	12	32.1	17	43.7
5 - 9 years	5	11.5	7	15.3
10 - 14 years	14	35.2	12	29.0
15 - 17 years	16	73.2	17	69.8
Total	108	70.9	108	67.1

Source: NT Child Deaths Register and ABS Cat 3101, June 2016

per 100,000 children

Some totals may vary from last year's report due to late registrations and interstate deaths

Infants Deaths, 2012-2016

Infant deaths by gender and Aboriginal status, NT, 2012-2016

There were 116 infant deaths between 2012-2016 in the NT. A slight majority of those were female (52.6%) and 73.3% were Aboriginal children.

Table 8: Infant deaths by gender and Aboriginal status, NT, 2012-2016

Aboriginal Status	Female	Male	Total
Aboriginal	40	45	85
Non-Aboriginal	21	10	31
Total	61	55	116
Percentage	52.59%	47.41%	100.00%

Source: NT Child Deaths Register

Perinatal deaths by type, Aboriginal status and year, NT, 2012-2016

Given that there is a substantially greater risk of death in the perinatal period, the Committee has always monitored this period. Perinatal deaths are the combination of neonatal deaths and stillbirths. Table 9 shows there are a total 164 (67.7%) stillbirths and 78 (32.3%) neonatal deaths. The percentage of Aboriginal (49.4%) and non-Aboriginal (50.6%) stillbirths is very similar. There is a slightly higher percentage of stillborn babies (90 or 54.9%) were male. In the period 2012-2016 there were 78 neonatal deaths. The majority of neonatal deaths (75.6%) were of Aboriginal children and just over half (41 or 52.6%) were male babies.

Table 9: Perinatal deaths by type, Aboriginal status and year, NT, 2012-2016

Row Labels	2012	2013	2014	2015	2016	Total (%)
Aboriginal						
Neonatal	7	15	13	11	13	59
StillBirth	13	27	11	15	15	81
Subtotal	20	42	24	26	28	140 (57.9%)
Non-Aboriginal						
Neonatal	4	5	4	4	2	19
StillBirth	13	17	18	20	15	83
Subtotal	17	22	22	24	17	102 (42.1%)
Total	37	64	46	50	45	242 (100%)

Source: NT Child Deaths Register

Individual totals may differ from last year's report due to late registrations and interstate deaths

Post neonatal infancy by Aboriginal status and year, NT, 2012-2016

Table 10 presents post-neonatal infant deaths over the recent five year period by Aboriginal status. Of the total number of deaths in this age group, there is a majority that were Aboriginal children (68.4%).

Table 10: Post neonatal infancy by Aboriginal status and year, NT, 2012-2016

Year Post Neonatal	2012	2013	2014	2015	2016	Total
Aboriginal	9	4	2	6	5	26
Non-Aboriginal	3	4		2	3	12
Total	12	8	2	8	8	38

Source: NT Child Deaths Register

Deaths of children with a family involvement in child protection service 2012-2016

Children involved with the child protection system are considered to be a particularly vulnerable subgroup of the population. Given that it is prudent that child deaths committees consider the child protection history of children who have died as well as that of their siblings, as an indicator of vulnerability.

A child is considered to be 'known' to the child protection system if an 'action' has been taken under Chapter 2 of the Care and Protection of Children Act to safeguard the wellbeing of the child. This 'action' by Territory Families can involve; receiving and assessing notifications, conducting child protection investigations, undertaking protective assessments, the provision of family support services, the taking out of statutory child protection orders, or the placement of a child into care.

The death of a child who is in the care of the Chief Executive Officer of Territory Families is required by law to be referred to the Office of the NT Coroner for him/her to make a finding on the child's death. In the present reporting period 2012-2016 there have been 6 deaths of children who were known to Territory Families.

Characteristics of child death by children and families known to TF status, NT, 2012-2016

Children known to child protection services may originate from families characterised by dysfunction, including domestic and family violence, alcohol drug and volatile substance abuse, mental illness, and/or involvement with the criminal justice system

Of the 216 recorded child deaths in the NT in the reporting period 2012-2016, 61(28%) were 'known' to Territory Families and 155 (72%) were 'not known' to Territory Families within the 3 years prior⁷ to their death. Of the 61 deaths of children known to Territory Families, 29 had siblings who also had involvement in the child protection system at some time.

The highest number of involvement was in the <1 year range (20 or 33%) and the lowest number of involvement was in the 5-9 years range (6 or 9.8%).

Of the deaths of children involved in the child protection system, 52 (85%) were Aboriginal and 9 (15%) were non-Aboriginal.

Table 11: Characteristics of child death by children and families known to TF status, NT, 2012-2016

Child Characteristics	Known to TF Number (%)		Not known to TF Number (%)	
Gender				
Female	29	48%	79	51%
Male	32	52%	76	49%
Total	61	100%	155	100%
Aboriginal Status				
Aboriginal	52	85%	105	68%
Non-Aboriginal	9	15%	50	32%
Total	61	100%	155	100%
Location				
Greater Darwin	12	20%	49	32%
Rest of NT	49	80%	106	68%
Total	61	100%	155	100%
Age Group				
< 1 year	20	33%	96	62%
1 - 4 years	12	20%	17	11%
5 - 9 years	6	10%	6	4%
10 - 14 years	13	21%	13	8%
15 - 17 years	10	16%	23	15%
Total	61	100%	155	100%

Source: NT Child Deaths Register

7 The counting rules for children known to TF varied within this reporting period, and in 2012 were refined to only count engagement with TF in the three years prior to the child's death.

Chapter 4 – Underlying causes of child deaths in the Northern Territory, 2012-2016

This section provides information about the Underlying Cause of Death (UCOD) for 200 of the 216 child deaths in this five year reporting period. At the time of this report, there were 16 deaths awaiting the outcome of coronial investigations. One of these deaths is from 2014, 4 are from 2015 and the remaining 11 are from 2016.

Underlying cause of death by ICD-10 chapter and year, NT, 2012-2016

Tables 12 to 15 provide a comparative breakdown of the UCOD by reporting years, gender and Aboriginal status, usual residence and age groups.

Table 12 details the underlying cause of death for children, which has been classified using the standard international coding system at broad chapter level. External causes (68) and the conditions originating in the perinatal period (67) made up the greatest number of deaths in the 216 total.

Table 12: Underlying cause of death by ICD-10 chapter and year, NT, 2012-2016

ICD-10-AM Chapter No.	Code prefix	ICD-10-AM Chapter Descriptions	2012	2013	2014	2015	2016	Total
1	A and B	Certain infectious and parasitic diseases	0	0	1	1	1	3
2	C and D	Neoplasms	1	0	2	1	2	6
4	E	Endocrine, nutritional and metabolic diseases	0	1	0	1	0	2
6	G	Diseases of the nervous system	3	2	1	0	0	6
8	H	Diseases of the ear and mastoid process	1	0	0	0	0	1
9	I	Diseases of the circulatory system	0	0	1	1	0	2
10	J	Diseases of the respiratory system	2	3	0	0	0	5
16	P	Certain conditions originating in the perinatal period	8	17	17	10	15	67
17	Q	Congenital malformations, deformations and chromosomal abnormalities	3	4	1	6	2	16
18	R	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	11	3	4	5	0	23
20	U-Y	External causes of morbidity and mortality	17	22	18	9	3	69
	Not yet coded	Awaiting coronial findings and/or cause of death*			1	4	11	16
	Total	Total	46	52	46	38	34	216

Source: NT Child Deaths Register

Proportions may differ from last year's report due to updated numbers, late registration etc.

*includes 16 deaths which are still open coronial cases

Underlying cause of death by ICD-10 chapter, gender and Aboriginal status, NT, 2012-2016

Table 13 shows for all sub-groups the leading coded causes of death were “deaths from external causes” and certain conditions originating in the perinatal period”. There were similar numbers of male and female deaths over this period and significantly more Aboriginal (157) than non-Aboriginal (59).

Table 13: Underlying cause of death by ICD-10 chapter, gender and Aboriginal status, NT, 2012-2016

ICD-10-AM Chapter Descriptions	Gender		Aboriginal Status	
	Female	Male	Aboriginal	Non-Aboriginal
Certain infectious and parasitic diseases	1	2	2	1
Neoplasms	3	3	3	3
Endocrine, nutritional and metabolic diseases	0	2	1	1
Diseases of the nervous system	2	4	3	3
Diseases of the ear and mastoid process	0	1	1	0
Diseases of the circulatory system	2	0	1	1
Diseases of the respiratory system	4	1	4	1
Certain conditions originating in the perinatal period	31	36	52	15
Congenital malformations, deformations and chromosomal abnormalities	8	8	10	6
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	16	7	16	7
External causes of morbidity and mortality	32	37	52	17
Awaiting coronial findings and/or cause of death*	9	7	12	4
Total	108	108	157	59

Source: NT Child Deaths Register

*includes 16 deaths which are still open coronial cases

Sixty nine deaths were due to ‘external causes’ of which 52 deaths were of Aboriginal children and 17 were non-Aboriginal children. Of these 26 (37%) deaths were the result of intentional self-harm, 21 Aboriginal and 5 non-Aboriginal. There were 10 (14.4%) children who died from drowning, 5 Aboriginal and 5 non-Aboriginal and there were 12 (17.4%) children who died from motor vehicle related accidents, 10 Aboriginal and 2 non-Aboriginal.

Underlying cause of death by ICD-10 chapter and gender, and chapter and Aboriginal status, NT, 2012-2016

Figures 3 and 4 provide a comparison by gender and Aboriginal status for each of the ICD-10-AM chapters. Six of the 12 categories were dominated by males and 2 categories were equally represented in ‘neoplasms’ and ‘congenital malformations’.

Figure 3: Underlying cause of death by ICD-10 chapter and gender, NT, 2012-2016

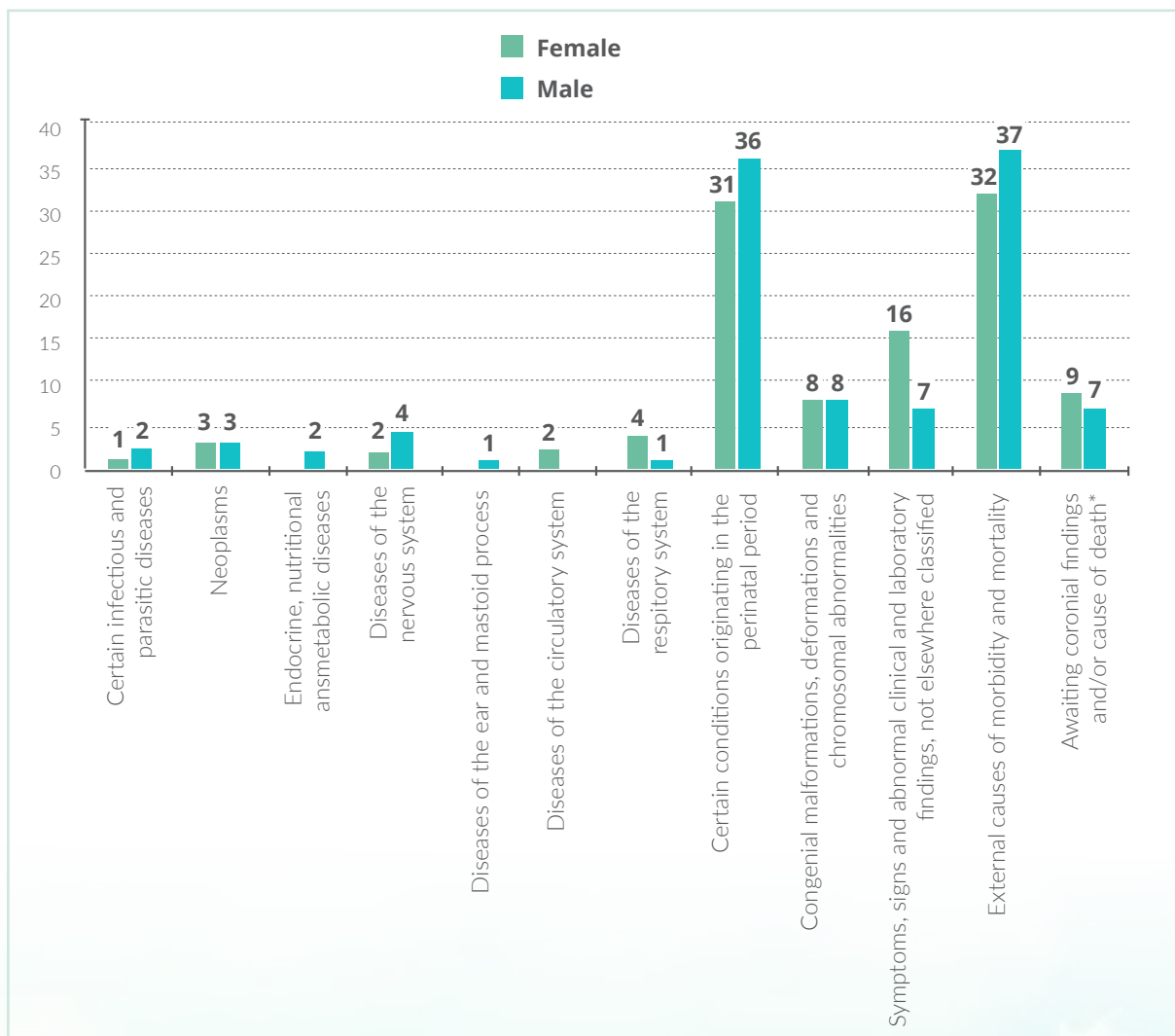
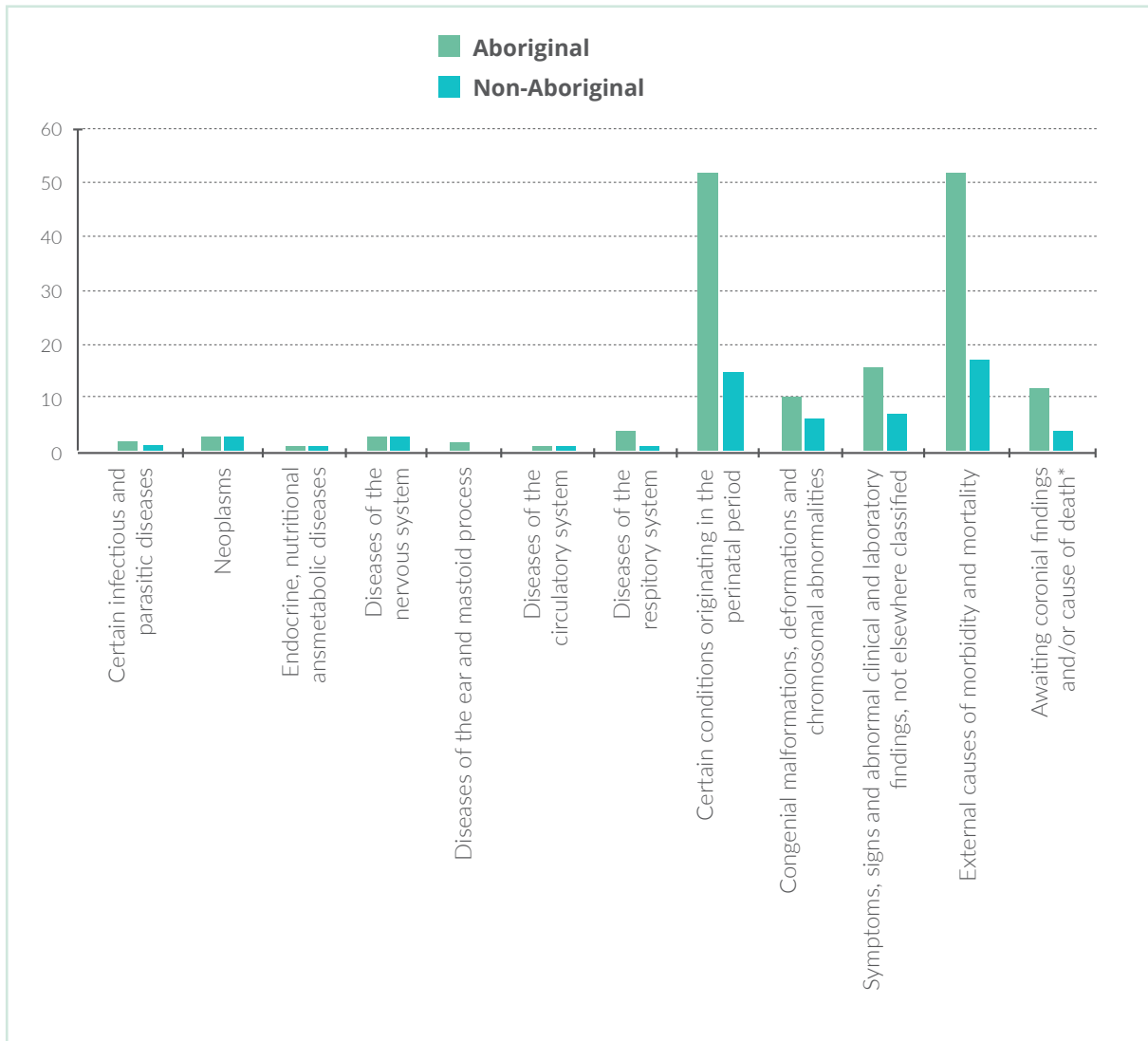


Figure 4: Underlying cause of death by ICD-10 chapter and Aboriginal status, NT, 2012-2016



Underlying cause of death by ICD-10 chapter and usual residence, NT, 2012-2016

Table 14: Underlying cause of death by ICD-10 chapter and usual residence, NT, 2012-2016

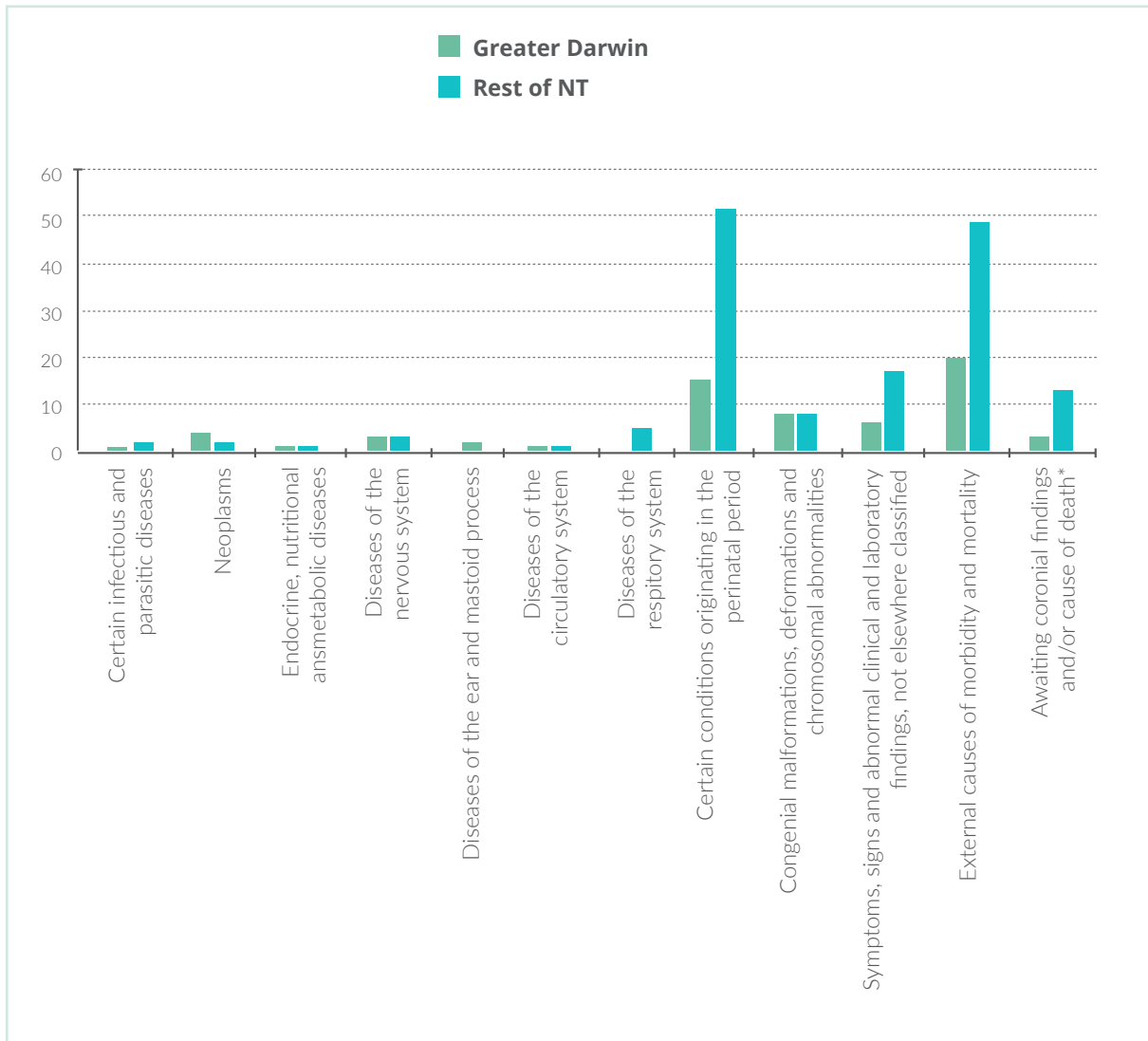
ICD-10-AM Chapter Descriptions	Greater Darwin	Rest of NT
Certain infectious and parasitic diseases	1	2
Neoplasms	4	2
Endocrine, nutritional and metabolic diseases	1	1
Diseases of the nervous system	2	4
Diseases of the ear and mastoid process	0	1
Diseases of the circulatory system	1	1
Diseases of the respiratory system	0	5
Certain conditions originating in the perinatal period	19	48
Congenital malformations, deformations and chromosomal abnormalities	8	8
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	6	17
External causes of morbidity and mortality	22	47
Awaiting coronial findings and/or cause of death*	4	12
Total	68	148

Source: NT Child Deaths Register

*includes 16 deaths which are still open coronial cases

Of the 216 child deaths recorded, 148 (68.9%) were from the Rest of the NT. The leading cause of death in Greater Darwin was 'external causes' (32.4%) and in the Rest of the NT was 'certain conditions originating in the perinatal period' (33.5%)

Figure 5: Underlying cause of death by ICD-10 chapter and usual residence, NT, 2012-2016



Source: NT Child Deaths Register

*includes 16 deaths which are still open coronial cases

Underlying cause of death by ICD-10 chapter and age group, NT, 2012-2016

The largest number of deaths in children aged less than 1 year was from 'conditions originating in the perinatal period' 66 or 56.8% followed by 'symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified' 21 or 18.1%. The latter figure includes Sudden Infant Deaths (SIDS) and Sudden Unexpected Death in Infancy (SUDI). For all other age groups, the leading cause of death was 'external causes'. As previously stated under Table 13 'external causes' includes motor vehicle accidents, drownings and intentional self-harm which are potentially preventable causes of death.

Table 15: Underlying cause of death by ICD-10 chapter and age group, NT, 2012-2016

ICD-10-AM Chapter Descriptions	< 1 year	1 - 4 years	5 - 9 years	10 - 14 years	15 - 17 years
Certain infectious and parasitic diseases	1	1			1
Neoplasms	1	2	2	1	
Endocrine, nutritional and metabolic diseases		2			
Diseases of the nervous system	2		1	2	1
Diseases of the ear and mastoid process		1			
Diseases of the circulatory system	1				1
Diseases of the respiratory system	3	1			1
Certain conditions originating in the perinatal period	66	1			
Congenital malformations, deformations and chromosomal abnormalities	12	1	2	1	
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	21	2			
External causes of morbidity and mortality	2	13	5	20	29
Awaiting coronial findings and/or cause of death*	7	5	2	2	0
Total	116	29	12	26	33

Source: NT Child Deaths Register

Proportions may differ from last year's report due to updated numbers, late registration etc.

*includes 16 deaths which are still open coronial cases

Appendices

Appendix 1: Table of underlying cause of child deaths by ICD-10 chapters, NT, 2012-2016

Number of Deaths	Causes - ICD-10 Chapter 1: Certain infectious and parasitic diseases (A00-B99)
1	Diseases of the respiratory system
1	Meningococcal meningitis
1	Certain infectious and parasitic diseases
3	Total

Number of Deaths	ICD-10 Chapter 2: Neoplasms (C00-D48)
1	Malignant neoplasms of respiratory and intrathoracic organs
1	Malignant neoplasms of urinary tract
3	Malignant neoplasms of eye, brain and other parts of central nervous system
1	Malignant neoplasms of thyroid and other endocrine glands
6	Total

Number of Deaths	ICD-10 Chapter 4: Endocrine, nutritional and metabolic diseases (E00-E99)
1	Disorders of copper metabolism
1	Other sphingolipidosis
2	Total

Number of Deaths	ICD-10 Chapter 6: Diseases of the nervous system
1	Bacterial meningitis, not elsewhere classified
1	Encephalitis, myelitis and encephalomyelitis, unspecified
1	Dyskinetic cerebral palsy
2	Cerebral palsy. Unspecified
1	Anoxic brain damage, not elsewhere classified
6	Total

Number of Deaths	ICD-10 Chapter 8: Diseases of the ear and mastoid process
1	Other chronic suppurative otitis media
1	Total

Number of Deaths	ICD-10 Chapter 9: Diseases of the circulatory system (I00-I99)
1	Dilated cardiomyopathy
1	Ventricular tachycardia
2	Total

Number of Deaths	ICD-10 Chapter 10: Diseases of the respiratory system (J00-J99)
1	Viral pneumonia, unspecified
1	Pneumonia due to Haemophilus influenzae
2	Bronchopneumonia, unspecified
1	Respiratory disorder, unspecified
5	Total

Number of Deaths	ICD-10 Chapter 16: Certain conditions originating in the perinatal period (P00-P96)
2	Fetus and newborn affected by maternal hypertensive disorders
1	Fetus and newborn affected by maternal infectious and urinary tract diseases
2	Fetus and newborn affected by incompetent cervix
8	Fetus and newborn affected by premature rupture of membranes
3	Fetus and newborn affected by multiple pregnancy
2	Fetus and newborn affected by other maternal complications of pregnancy
3	Fetus and newborn affected by other forms of placental separation and haemorrhage
1	Fetus and newborn affected by other and unspecified conditions of umbilical cord
14	Fetus and newborn affected by chorioamnionitis
1	Fetus and newborn affected by other malpresentation, malposition and disproportion during labour and delivery
14	Extremely low birth weight
7	Extreme immaturity
1	Other preterm infants
1	Respiratory distress syndrome of newborn
1	Other bacterial sepsis of newborn
3	Unspecified intraventricular (nontraumatic) haemorrhage of fetus and newborn
1	Necrotizing enterocolitis of fetus and newborn
2	Termination of pregnancy, affecting fetus and newborn
67	Total

Number of Deaths	ICD-10 Chapter 17: Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)
1	Microcephaly
1	Atresia of foramina of Magendie and Luschka
1	Tetralogy of Fallot
1	Hypoplastic left heart syndrome
2	Patent ductus arteriosus
1	Renal agenesis, unspecified
1	Hypoplasia and dysplasia of lung
1	Osteogenesis imperfecta
1	Other congenital malformations of diaphragm
1	Tuberous sclerosis
1	Congenital malformation syndromes predominately affecting facial appearance
1	Down Syndrome, unspecified
1	Other specified chromosome abnormalities
2	Chromosomal abnormality, unspecified
16	Total

Number of Deaths	ICD-10 Chapter 18: Symptoms, signs and abnormal clinical an laboratory findings, not elsewhere classified (R00-R99)
8	Sudden infant death syndrome with mention of autopsy
15	Other ill-defined and unspecified causes of mortality
23	Total

Number of Deaths	ICD-10 Chapter 20: External causes of morbidity and mortality (V00-Y99)
1	Pedestrian injured in collision with car, pick-up truck or van: nontraffic accident
1	Pedestrian injured in collision with car, pick-up truck or van: traffic accident
1	Pedestrian injured in collision with heavy transport vehicle or bus: nontraffic accident
1	Pedestrian cyclist injured in collision with car, pick-up truck or van: driver injured in traffic accident
1	Pedal cyclist injured in collision with fixed or stationary object: driver injured in nontraffic accident
1	Car occupant injured in collision with fixed or stationary object: person injured while boarding or alighting
2	Car occupant injured in collision with fixed or stationary object: passenger injured in traffic accident
1	Car occupant injured in noncollision transport accident: driver injured in traffic accident
2	Car occupant injured in noncollision transport accident: passenger injured in traffic accident
1	Occupant of pick-up truck or van injured in noncollision transport accident: person on outside of vehicle injured in nontraffic accident
2	Accident to other private fixed-wing aircraft, injuring occupant
1	Struck by thrown, projected or falling object
1	Striking against or struck by other objects
3	Bitten or struck by crocodile or alligator
4	Drowning and submersion following fall into swimming-pool
2	Drowning and submersion while in natural water
3	Drowning and submersion following fall into natural water
1	Other specified drowning and submersion
2	Other accidental hanging and strangulation
2	Inhalation and ingestion of food causing obstruction of respiratory tract
1	Inhalation and ingestion of other objects causing obstruction of respiratory tract
1	Exposure to uncontrolled fire in building or structure
2	Accidental poisoning by and exposure to other gases and vapours
25	Intentional self-harm by hanging, strangulation and suffocation
1	Intentional self-harm by sharp object
2	Assault by hanging, strangulation and suffocation
2	Assault by sharp object
2	Hanging, strangulation and suffocation, undetermined intent
69	Total

Number of Deaths	Not yet coded
16	Awaiting coronial findings
16	Total
	216 deaths over 2012-2016 Period

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