Mortality in the Northern Territory, 1967–2020

Key findings

From 1967–2020:

- Mortality rates have declined in the NT, by: 40% for Aboriginal males; 46% for Aboriginal females; 62% for non-Aboriginal males and 63% for non-Aboriginal females.
- Infant mortality rates decreased in the NT from 52 to 8 deaths per 1,000 live births. For Aboriginal infants, deaths per 1,000 live births dropped from 90 to 13.
- Life expectancy at birth has improved in the NT. For Aboriginal peoples, life expectancy increased from 53 to 67 years for males and from 54 to 70 years for females.
- Despite these overall improvements, the gap in mortality and life expectancy outcomes between Aboriginal and non-Aboriginal peoples remains.

During 2011–2020:

- There were 11,031 deaths amongst NT residents.
- The majority of deaths (69%) were due to non-communicable diseases.
- The mortality rate due to non-communicable diseases was 1,057 and 439 deaths per 100,000 population, for Aboriginal and non-Aboriginal peoples, respectively.
- Coronary heart disease was the leading cause of chronic disease deaths in the NT for males at 249 and 87 deaths per 100,000 population for Aboriginal males and non-Aboriginal males, respectively.
- Dementia was the leading cause of chronic disease deaths in the NT for females at 108 and 50 deaths per 100,000 population for Aboriginal females and non-Aboriginal females, respectively.
- The median age of death in the NT was 56 years for Aboriginal peoples and 71 years for non-Aboriginal peoples.

Background

Mortality and related life expectancies are important indicators of the health of populations. This factsheet provides a routine update on mortality statistics[1] in the Northern Territory (NT). We present long-term trends between 1967 and 2020 for all-cause mortality. We also report key causes of death over a 10-year period 2011–2020.

Mortality data was sourced from the Australian Bureau of Statistics (ABS) and the Australian Coordinating Registry (ACR).[2] We used the NT historical research mortality datasets for the years 1967 to 1988.[3] To calculate mortality rates, population data based on the ABS estimated resident population and live births from the ABS was used.[4, 5] Age-adjusted rates are estimated using the ABS 2001 Australian standard population.[6]

Mortality trends

Since 1967, all-cause mortality rates have markedly decreased in both the NT and Australia across all population groups (**Table 1 and 2**).

Table 1: Male mortality rates for all causes, NT and Australia, 1967–2020

Males			
Years	Northern Territory		Australia
	Aboriginal	Non-Aboriginal	
1967–1970	2538.4	1805.7	1607.8
1971–1975	2662.6	2084.3	1502.5
1976–1980	2736.9	1490.0	1331.2
1981–1985	2227.3	1320.7	1200.1
1986–1990	2468.6	1179.7	1088.9
1991–1995	2134.1	1221.5	980.4
1996–2000	2078.3	942.5	875.3
2001–2005	2049.3	808.7	761.2
2006–2010	1690.5	903.5	722.6
2011–2015	1655.3	766.9	659.9
2016–2020	1528.3	684.1	616.2
% change	39.8%	62.1%	61.7%

Note: Age-adjusted mortality rates per 100,000 population by 5-year periods.

Table 2: Female mortality rates for all causes, NT and Australia, 1967–2020

Females			
Years	Northern Territory		Australia
	Aboriginal	Non-Aboriginal	
1967–1970	2409.2	1152.3	1017.5
1971–1975	1919.0	1200.8	944.6
1976–1980	2081.6	920.5	825.3
1981–1985	1700.6	732.8	755.8
1986–1990	1839.1	598.1	703.4
1991–1995	1635.1	739.2	647.6
1996–2000	1571.0	610.6	598.1
2001–2005	1366.4	539.9	546.7
2006–2010	1411.9	507.4	491.9
2011–2015	1421.0	464.3	462.9
2016–2020	1308.7	428.7	435.5
% change	45.7%	62.8%	57.2%

Note: Age-adjusted mortality rates per 100,000 population by 5-year periods.

In the NT, mortality rates decreased by: 40% for Aboriginal males; 46% for Aboriginal females; 62% for non-Aboriginal males and 63% for non-Aboriginal females (**Table 1 and 2**). The decline in mortality rates aligns with international trends, of which the main drivers have been identified as improvements in cardiovascular health among older adults and reductions in deaths among infants.[7] These factors were explored for the NT context in the below sections that report on causes of death and infant mortality.

Across all years, mortality rates in the NT were highest in the Aboriginal populations. For NT males in 2016–2020, the age-adjusted mortality rates were 1,528 and 684 deaths per 100,000 population for Aboriginal and non-Aboriginal males, respectively (**Table 1**). For NT females in 2016–2020, the age-adjusted mortality rates were 1,309 and 429 deaths per 100,000 population for Aboriginal and non-Aboriginal females, respectively (**Table 2**).

Aboriginal peoples in the NT had higher death rates than the national average. The Australian Institute of Health and Welfare (AIHW) for the years 2018 to 2022 reported age-adjusted rates of death at 1,109 deaths per 100,000 population for Aboriginal males and 884 deaths per 100,000 population for Aboriginal females.[8]

The interplay between population and mortality is bidirectional. Globally, improvements in the health of older adults, declines in fertility rates and reduced infant mortality have directly contributed to ageing populations.[9, 10] In the NT, the recent decrease in outbound migration of older NT residents,[11] mean the total proportion of Territorians aged 65 and older increased from 2.5% in 1986 to 6.9% in 2016.[12] In line with these changes, the proportion of deaths among older Territorians (age ≥65 years) increased from 34% in 1991–2000 (**Figure 1**) to 49% in 2011–2020 (**Figure 2**).

Figure 1: Age distribution of mortality, proportion of the number of deaths, by Aboriginal status, NT, 1991–2000

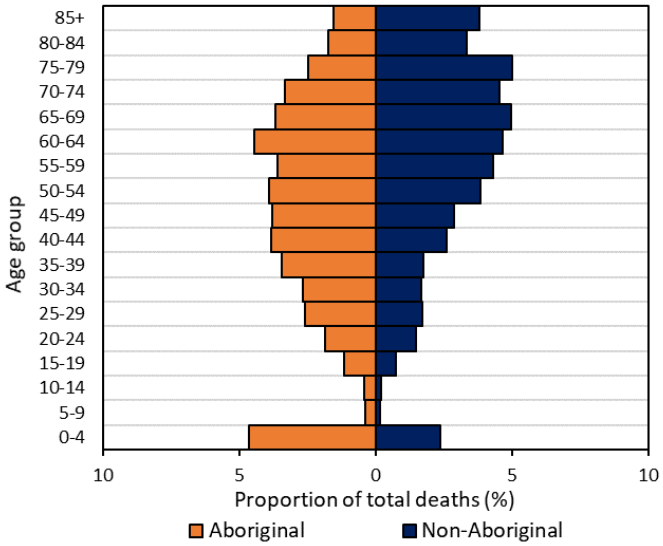
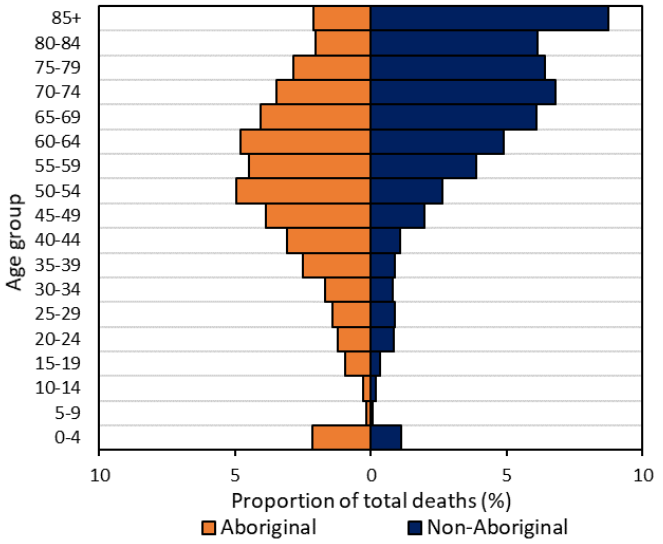


Figure 2: Age distribution of mortality, proportion of the number of deaths, by Aboriginal status, NT, 2011–2020



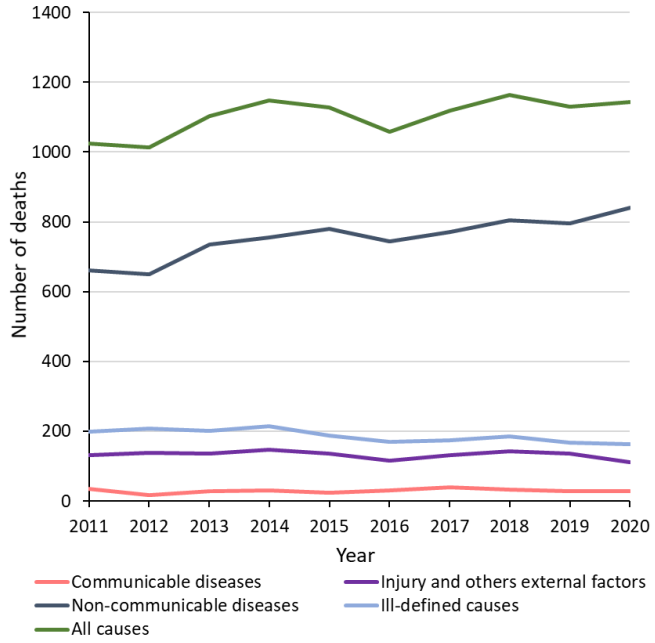
Mortality in 2011–2020

Between 2011 and 2020, there were 11,031 deaths amongst NT residents. Of these deaths, 59% were males, 46% were Aboriginal peoples, and 28% were remote residents (remote refers to all areas in the NT excluding the Darwin and Alice Springs urban districts and the towns of Katherine, Tenant Creek and Nhulunbuy).

The analysis by cause of death is based on the underlying cause of death (UCoD), coded in ICD-10-AM.[13] Following the Institute for Health Metrics and Evaluation (IHME) global burden of disease study,[14] the UCoD was classified into four broad disease groups. Note, we did not redistribute the ill-defined causes of death into the other categories of death.

From 2011 to 2020, the total number of deaths in the NT due to all causes increased by 119 from 1,025 to 1,144 deaths as seen in **Figure 3**. Non-communicable was the main cause of death in the NT, accounting for 69% of deaths. Decreases were observed in deaths due to communicable, maternal, neonatal and nutritional diseases (hereafter referred to as communicable diseases), as well as injury and other external factors, and ill-defined causes, whilst deaths due to non-communicable diseases increased by 179 from 662 to 841 deaths (**Figure 3**).

Figure 3: Number of deaths by disease group, NT, 2011–2020



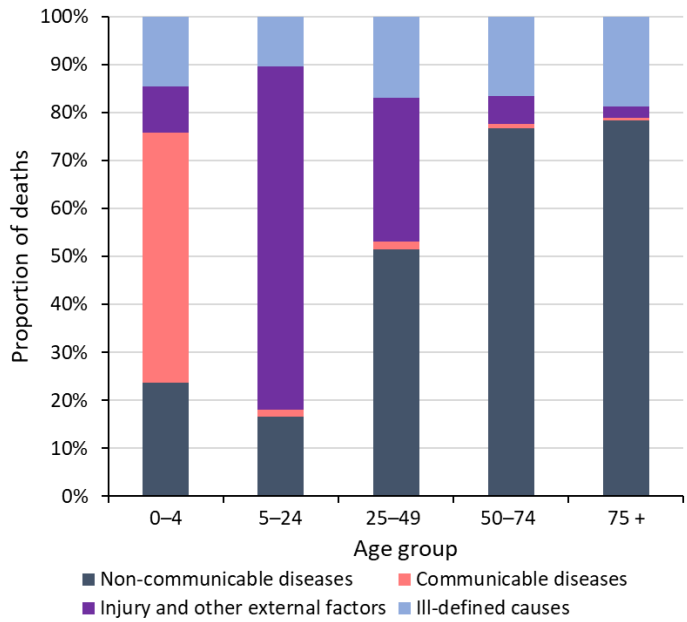
Note: Communicable diseases includes maternal, neonatal and nutritional diseases aligned with GBD classifications.[13]

There was variation in cause of death by age groups, which is in line with expected results. **Figure 4** graphs death from the main disease groups by age group, as listed in **Table 3**. Communicable diseases was the major cause of deaths in the age group 0–4 years; injury and other external factors claimed the majority of deaths in the age group 5–24 years. Unlike communicable diseases, the proportion of deaths due to injury and other external factors persisted in older age groups at 30% among 25–49 years old and 6% in the age group 50–74 years. Non-communicable diseases accounted for an increasing proportion of deaths with age, contributing to over 75% of deaths from age 50 onwards (**Figure 4**).

Table 3: Number of deaths by age group, 2011–2020

Northern Territory				
0–4	**5–24**	**25–49**	**50–74**	**75+**
364	444	2,009	5,091	3,123

Figure 4: Proportion of deaths by disease group and age group, 2011–2020



Note: Communicable diseases includes maternal, neonatal and nutritional diseases aligned with GBD classifications.[13]

The age-adjusted mortality rate due to non-communicable diseases was 559 deaths per 100,000 population for all Territorians. Whereas, the mortality rate due to injury and others external factors, and communicable diseases for all Territorians was considerably lower at 60 and 13 deaths per 100,000 population, respectively (**Table 4**).

Mortality rates were the highest among Aboriginal populations across all disease groups especially in the non-communicable diseases. For Aboriginal and non-Aboriginal peoples, the mortality rate from non-communicable diseases was 1,057 and 439 deaths per 100,000 population, respectively (**Table 4**).

Table 4: Disease group, age-adjusted mortality rates per 100,000 population, by Aboriginal status, NT and Australia, 2011–2020

Northern Territory			
Disease group	**Aboriginal**	**Non-Aboriginal**	**Total**
Communicable	23.5	8.4	13.1
Non-communicable	1057.0	439.1	559.3
Injury	95.1	44.2	59.6
Ill-defined causes	288.8	97.4	135.0
All causes	**1464.5**	**589.1**	**767.1**

Note: Communicable diseases includes maternal, neonatal and nutritional diseases aligned with GBD classifications.[13]

Leading causes of death

The ranking of underlying causes is based on ICD-10-AM[15] chapters. Each chapter is a group of disorders in the same physiological system or with a similar pathological nature. Between 2011 and 2020, the most common cause of death in the NT was cancer with a rate of 254 deaths (per 100,000 population) for males and 165 deaths for females, which is comparable with Australian mortality statistics **(Table 5 and 6**).

The top three most common causes of death for NT Aboriginal males and females were circulatory system diseases, cancer and endocrine disorders. Mortality rates due to circulatory system diseases were 398 and 291 deaths per 100,000 population for Aboriginal males and females, respectively (**Table 5 and 6**).

The top three causes for NT non-Aboriginal males and females were cancer, circulatory system diseases and respiratory disorders. Mortality rates due to cancer were 236 and 135 deaths per 100,000 population for non-Aboriginal males and females, respectively (**Table 5 and 6**).

For most causes, death rates were higher among males than females. However, Aboriginal females had higher death rates from endocrine and genitourinary disorders (214 and 64 per 100,000 population, respectively) than males (171 and 63 per 100,000 population, respectively) as seen in **Table 5 and 6**.

Compared to Australia, the NT had higher mortality rates in every cause of death except for nervous system disorders for both males and females. Within the NT, disparity by Aboriginality was most evident in genitourinary and endocrine disorders as Aboriginal females had an age-adjusted rate over eight times higher and Aboriginal males had an age-adjusted rate over five times higher than their non-Aboriginal counterparts (**Table 5 and 6**).

Table 5: Top ten causes of death in males, age-adjusted mortality rates per 100,000 population, by Aboriginal status, NT and Australia, 2011–2020

Males				
Cause of death	**Northern Territory**			**Australia**
	Aboriginal	**Non-Aboriginal**	**Total**	
Cancer	341.7	235.8	253.5	200.1
Circulatory	397.9	165.7	208.6	169.7
Injury	150.6	71.9	92.8	55.5
Respiratory	170.3	74.1	89.3	57.0
Endocrine	170.8	32.2	53.7	26.7
Mental	103.4	39.1	48.5	28.1
Digestive	71.0	25.5	34.2	23.0
Nervous	37.9	29.2	31.4	31.8
Genitourinary	63.3	11.1	18.9	13.1
Infectious	27.0	10.3	13.4	10.3

Note: The causes of death were classified using the ICD-10-AM disease chapters[15] and ranked in order of NT Total.

Table 6: Top ten causes of death in females, age-adjusted mortality rates per 100,000 population, by Aboriginal status, NT and Australia, 2011–2020

Females				
Cause of death	**Northern Territory**			**Australia**
	Aboriginal	**Non-Aboriginal**	**Total**	
Cancer	274.4	135.2	165.3	129.8
Circulatory	291.4	99.5	143.0	122.4
Endocrine	214.3	25.4	66.3	19.0
Respiratory	154.2	39.3	64.1	39.8
Mental	99.7	38.6	51.1	31.0
Injury	82.0	31.1	46.4	25.1
Digestive	68.6	14.6	27.8	16.9
Nervous	25.5	21.7	23.1	26.7
Genitourinary	64.1	7.5	19.7	10.6
Infectious	24.2	6.3	10.7	7.5

Note: The causes of death were classified using the ICD-10-AM disease chapters[15] and ranked in order of NT Total.

Key chronic conditions causing death

From 2011 to 2020, the five most common chronic conditions in the NT by numbers and age-adjusted rates were coronary heart disease, dementia, chronic obstructive pulmonary disease (COPD), cancer of the lung and chronic kidney disease (**Figure 5 and 6**). Males accounted for the majority of deaths due to coronary heart disease, lung cancer and COPD, whereas females accounted for the majority of deaths due to chronic kidney diseases and dementia in the NT (**Figure 5**).

Australia reported the same top five chronic conditions except had cerebrovascular disease (stroke) instead of chronic kidney disease (**Figure 6**). This difference can likely be explained by the disproportionate impact chronic kidney disease has on the Aboriginal population in the NT.[16] Chronic kidney condition was the common cause of death for Aboriginal females (175 deaths per 100,000 population) and the second most common cause of death for Aboriginal males (132 deaths per 100,000 population), significantly greater than non-Aboriginal Territorians (**Figure 6**).

Across all population groups, NT Aboriginal peoples had higher rates of chronic conditions compared to NT non-Aboriginal peoples. A pronounced difference by Aboriginal status was observed from coronary heart disease among Aboriginal males, whose death rate was nearly three times higher than non-Aboriginal males (248.7 vs 87.1 deaths per 100,000 population) (**Figure 6**).

Additionally, Aboriginal females were also the only population group to have diabetes in its top five chronic disease causes of death (94 per 100,000 population) (**Figure 6**).

Between 2011 and 2020, the median age of death in the NT was 56 years for Aboriginal peoples and 71 years for non-Aboriginal people. Across all five leading chronic conditions causing death, Aboriginal peoples had a lower median age of death than non-Aboriginal peoples (**Table 7**). The most pronounced difference was observed in coronary heart disease, where the median age of death was 55 years for Aboriginal peoples, compared to 73 years for non-Aboriginal peoples – a difference of 18 years. Whereas, dementia had the lowest difference in the median age of death between Aboriginal and non-Aboriginal peoples at 4.3 years.

Table 7: Median age of death for the most common chronic conditions, by Aboriginal status, NT, 2011–2020

Northern Territory			
Cause of Death	**Aboriginal**	**Non-Aboriginal**	**Difference in years**
Coronary heart disease	55.0	73.0	18.0
Dementia	81.7	86.0	4.3
Chronic obstructive pulmonary disorder	66.0	74.0	8.0
Lung cancer	63.0	69.0	6.0
Chronic kidney disease	63.0	79.0	16.0
All causes	**56.0**	**71.0**	**15.0**

Figure 5: Five most common chronic conditions causing death, number of deaths, by sex, NT, 2011–2020

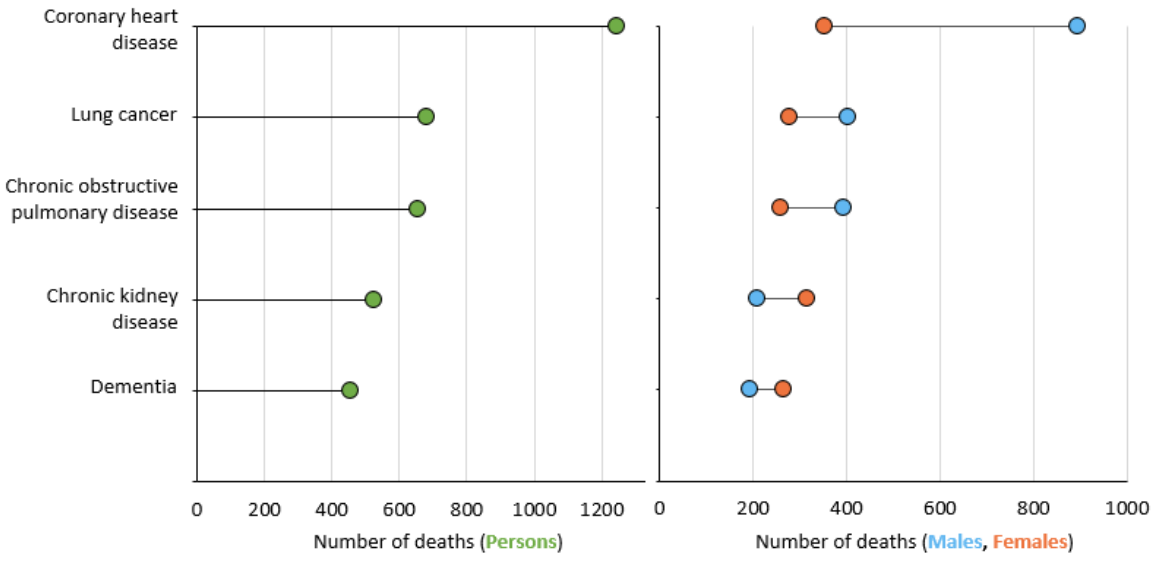


Figure 6: Five most common chronic conditions causing death, age-adjusted mortality rates, by sex and Aboriginal status, NT and Australia, 2011–2020

Rank	Males		Females		NT Total	Australia Total
	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal		
1	Coronary Heart Disease (248.7)	Coronary Heart Disease (87.1)	Chronic Kidney Disease (174.5)	Dementia (50.4)	Coronary Heart Disease (86.7)	Coronary Heart Disease (64.0)
2	Chronic Kidney Disease (132.4)	COPD (54.3)	Dementia (107.6)	Coronary Heart Disease (40.0)	Dementia (59.0)	Dementia (42.1)
3	COPD (122.7)	Dementia (49.4)	Coronary Heart Disease (106.1)	Lung Cancer (32.0)	COPD (52.9)	Stroke (34.3)
4	Dementia (91.7)	Lung Cancer (47.1)	COPD (102.6)	COPD (25.4)	Lung Cancer (44.7)	Lung Cancer (29.7)
5	Lung Cancer (80.1)	Stroke (26.2)	Diabetes (93.5)	Stroke (21.4)	Chronic Kidney Disease (36.6)	COPD (23.4)

Note: All rates presented above were age-adjusted mortality rates. This analysis differed from previous mortality reporting[1] by classifying chronic diseases according to the leading conditions identified in the recent NT report[17] on the burden of disease and injury. These conditions were subsequently ranked based on their age-adjusted mortality rates.

Neonatal, post-neonatal and infant mortality

Infant mortality (age <365 days), more specifically neonatal mortality (age <28 days) and post-neonatal mortality (age 28 days to <365 days), are key indicators of the health of a population. Neonatal mortality globally serves as a measure of access to high-quality antenatal and perinatal care, highlighting a population's ability to manage complications such as prematurity, birth asphyxia, and neonatal infectious-related diseases. In contrast, post-neonatal mortality reflects the effectiveness of public health initiatives, including breastfeeding promotion, infection control, immunisation programs, and the influence of broader social and environmental conditions on child health.[18]

Since 1967, the NT has made significant progress in reducing both neonatal and post-neonatal mortality rates across all populations. Neonatal mortality rates decreased by 72% and 71% for Aboriginal and non-Aboriginal populations, respectively (**Table 8**). Post-neonatal mortality rates have also decreased in the NT by 94% and 86% for Aboriginal and non-Aboriginal populations, respectively (**Table 9**).

These improvements can largely be attributed to the increased access to antenatal care, greater number of births within hospitals, improved neonatal care, vaccination uptake among infants and mothers, and effective perinatal screening.[19, 20]

Table 8: Neonatal deaths, crude mortality rates per 1,000 live births by 5-year period, by Aboriginal status, NT and Australia, 1967–2020

Neonatal mortality (<28 days)				
Years	Northern Territory			Australia
	Aboriginal	Non-Aboriginal	Total	
1967–1970	35.6	14.4	23.6	~
1971–1975	30.5	17.0	22.1	~
1976–1980	19.0	10.8	14.2	~
1981–1985	12.5	8.2	9.8	~
1986–1990	14.6	5.8	9.0	5.1
1991–1995	13.2	6.2	8.7	4.0
1996–2000	13.8	4.1	7.8	3.6
2001–2005	9.2	3.7	6.0	3.4
2006–2010	7.8	2.2	4.5	3.0
2011–2015	8.8	2.2	4.6	2.5
2016–2020	9.9	4.2	6.3	2.3
% change	72.2	70.8	73.3	54.9

Note: ~ Neonatal deaths for Australia could not be calculated prior to 1986 without data of actual age in days of newborns.

Table 9: Post-neonatal deaths, crude mortality rates per 1,000 live births by 5-year period, by Aboriginal status, NT and Australia, 1967–2020

Post-neonatal mortality (>=28 days, <365 days)				
Years	Northern Territory			Australia
	Aboriginal	Non-Aboriginal	Total	
1967–1970	54.8	8.1	28.4	~
1971–1975	40.5	5.7	18.9	~
1976–1980	19.0	3.4	9.9	~
1981–1985	14.7	4.0	8.0	~
1986–1990	12.0	2.7	6.0	3.4
1991–1995	10.4	2.0	5.0	2.2
1996–2000	9.1	1.4	4.3	1.8
2001–2005	6.2	2.1	3.8	1.5
2006–2010	5.3	1.6	3.1	1.3
2011–2015	5.4	1.3	2.8	1.0
2016–2020	3.3	1.1	1.9	0.8
% change	94.0	86.4	93.3	76.5

Note: ~ Neonatal deaths for Australia could not be calculated prior to 1986 without data of actual age in days of newborns.

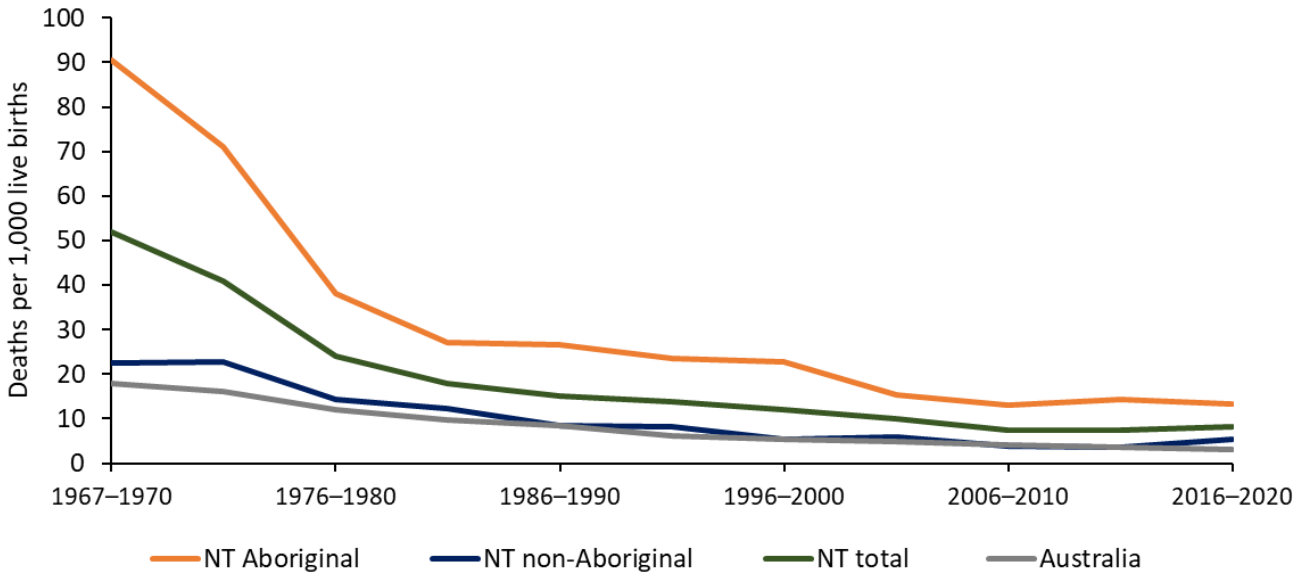
Over the years, infant mortality rates have improved for all NT infants reducing mortality by 84%. For NT Aboriginal infants, rates declined by 85% and for NT non-Aboriginal infants, rates declined by 76%. This was similar to the fall in rates for Australia at 82% (**Table 10**). The large reductions in infant mortality rates are graphed in **Figure 7.**

Despite these overall improvements, across all years, the infant death rates were higher for Aboriginal populations compared to non-Aboriginal and Australia populations (**Table 10**). Addressing these disparities requires targeted efforts to improve healthcare access, reduce socio-economic inequities, and address preventable risk factors such as smoking and alcohol consumption. Culturally appropriate programs and investments in housing, education, and infrastructure remain essential to closing the gap in infant mortality rates and achieving equitable health outcomes.[21, 22]

Table 10: Infant deaths, crude mortality rate per 1,000 live births by 5-year period, by Aboriginal status, NT and Australia, 1967–2020

Infant mortality (<365 days)				
Years	Northern Territory			Australia
	Aboriginal	Non-Aboriginal	Total	
1967–1970	90.4	22.4	51.9	18.0
1971–1975	71.1	22.7	41.0	16.2
1976–1980	38.1	14.2	24.1	12.1
1981–1985	27.2	12.2	17.9	9.8
1986–1990	26.6	8.5	15.0	8.4
1991–1995	23.6	8.1	13.7	6.2
1996–2000	22.8	5.5	12.1	5.4
2001–2005	15.4	5.8	9.9	4.9
2006–2010	13.1	3.8	7.5	4.2
2011–2015	14.2	3.5	7.4	3.5
2016–2020	13.2	5.3	8.3	3.2
% change	85.4	76.3	84.0	82.2

Figure 7: Infant mortality rate trends by 5-year period, by Aboriginal status, NT and Australia, 1967–2020



Life expectancy at birth

Life expectancy at birth is a measure of the average lifespan a newborn is expected to live and reflects the overall mortality level of a population. From 1967 to 2020, life expectancy in the NT has improved for all Territorians. Among males, life expectancy increased by 14.2 and 15.5 years for Aboriginal and non-Aboriginal peoples, respectively (**Table 9**). Among females, life expectancy increased by 16.1 and 13.3 years for Aboriginal and non-Aboriginal peoples, respectively (**Table 10**).

In 2016–2020, non-Aboriginal males and females had a life expectancy of 80.2 and 85.9 years, respectively. Whilst, Aboriginal males and females life expectancy was 66.7 and 70.0 years, respectively (**Table 11 and 12**). The gap in life expectancy between Aboriginal and non-Aboriginal peoples has persisted over time due to the complexity in addressing the underlying social determinants of health including intergenerational colonial trauma, discrimination, socioeconomic disadvantage, high-risk behaviours and accessibility to culturally safe health care services and prevention programs.[23, 24]

Examining national figures over the years, non-Aboriginal females in the NT had a similar life expectancy to Australian females. However, non-Aboriginal males in the NT generally had a slightly lower life expectancy to Australian males. Both Aboriginal males and females in the NT have a life expectancy lower than their Australian males and females (**Figure 8 and 9**).

Table 11: Male life expectancy at birth by 5-year period by Aboriginal status, NT and Australia, 1967–2020

Males			
Years	Northern Territory		Australia
	Aboriginal	Non-Aboriginal	
1967–1970	52.5	64.7	67.6
1971–1975	52.6	64.7	68.7
1976–1980	53.3	67.9	70.6
1981–1985	57.4	70.4	72.3
1986–1990	55.6	71.9	73.8
1991–1995	58.5	72.3	75.6
1996–2000	59.3	75.9	77.3
2001–2005	59.3	78.5	79.6
2006–2010	63.0	76.9	79.5
2011–2015	64.5	79.0	80.7
2016–2020	66.7	80.2	81.4

Table 12: Female life expectancy at birth by 5-year period by Aboriginal status, NT and Australia, 1967–2020

Females			
Years	Northern Territory		Australia
	Aboriginal	Non-Aboriginal	
1967–1970	53.9	72.6	74.7
1971–1975	58.5	73.3	76.0
1976–1980	60.2	76.2	78.2
1981–1985	63.2	79.9	79.7
1986–1990	62.6	84.1	80.9
1991–1995	64.2	80.2	82.3
1996–2000	65.2	83.5	83.6
2001–2005	67.9	85.3	85.2
2006–2010	68.0	84.0	84.2
2011–2015	67.7	84.7	84.9
2016–2020	70.0	85.9	85.5

Figure 8: Male life expectancy at birth, NT and Australia by Aboriginal status, 1967–2020

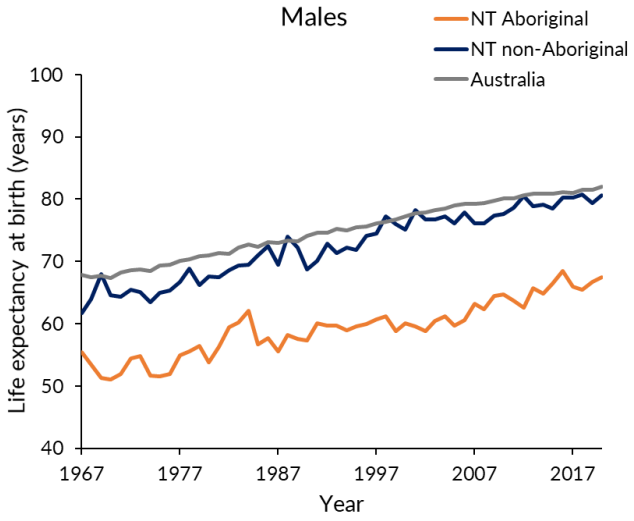
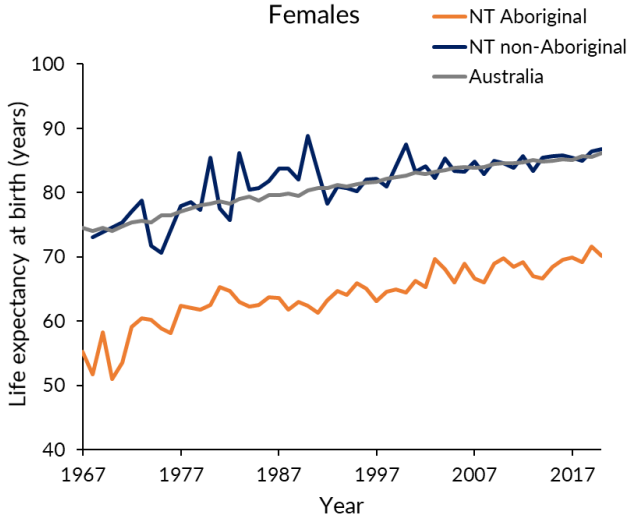


Figure 9: Female life expectancy at birth, NT and Australia by Aboriginal status, 1967–2020



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Information compiled by:

Dzulfikaar Sutandar, Thomas Cherian and Xiaohua Zhang

Enquiries to:

Health Statistics and Informatics
Northern Territory Health
PO Box 40596. Casuarina NT 0811
Email: health.statistics@nt.gov.au