

Cancer in the Northern Territory, 1991-2019

Introduction

Cancer is the most common cause of death among non-Aboriginal residents and the second most common cause of death in Aboriginal residents of the Northern Territory (NT).¹ This factsheet reports malignant cancer incidence, mortality and survival in NT residents for 1991 to 2019 for all cancers combined. Trends in individual cancers were described in [Cancer in the NT, 1991-2018](#).²

Cancer statistics were sourced from the NT cancer registry (NTCR) and Australian Cancer Database.^{3,4} Mortality data were obtained from the Australian Coordinating Registry.⁵ Australian and NT resident population estimates were sourced from the Australian Bureau of Statistics.^{6,7} Rates are expressed as the number of new cases per 100,000 population and adjusted to the 2001 Australian standard population using direct age-standardisation.⁸ Error bars in figures represent 95% confidence intervals.

All cancer incidence

Overall, NT residents have lower incidence for all cancers combined compared to the Australian average (Table 1). Cancer incidence is higher in males, regardless of Indigenous status. Figures 1 and 2 show cancer incidence increases with age, with similar incidence in Australian and NT populations up to 45-54 years of age.

Table 1 All cancers combined, age-standardised incidence, by five-year periods, Indigenous status and sex, NT and Australia, 1991-2019

| Time periods (years) | Northern Territory | | | | Australia Rate |
|----------------------|--------------------|-------|----------------|-------|----------------|
| | Aboriginal | | Non-Aboriginal | | |
| | No. * | Rate | No. * | Rate | |
| Male | | | | | |
| 1991-1995 | 135 | 461.1 | 720 | 501.4 | 574.4 |
| 1996-2000 | 176 | 612.2 | 982 | 487.8 | 558.9 |
| 2001-2005 | 233 | 545.0 | 1,225 | 509.2 | 580.0 |
| 2006-2010 | 297 | 525.9 | 1,586 | 548.0 | 613.2 |
| 2011-2015 | 347 | 502.8 | 1,883 | 536.8 | 579.0 |
| 2016-2019 | 278 | 410.3 | 1,613 | 513.8 | 571.7 |
| All years | 1,466 | 477.0 | 8,009 | 519.1 | 580.5 |
| Female | | | | | |
| 1991-1995 | 152 | 315.4 | 548 | 427.4 | 383.9 |
| 1996-2000 | 201 | 417.7 | 670 | 379.1 | 396.8 |
| 2001-2005 | 240 | 339.5 | 787 | 350.3 | 407.0 |
| 2006-2010 | 328 | 391.5 | 947 | 359.7 | 412.9 |
| 2011-2015 | 394 | 436.7 | 1,268 | 413.6 | 427.5 |
| 2016-2019 | 331 | 330.9 | 1,117 | 386.2 | 437.2 |
| All years | 1,646 | 363.2 | 5,337 | 381.7 | 411.8 |

Notes: *Cancer counts differ by up to 1% of annual notifications from previous report² due to ongoing data quality & completeness audits.

Figure 1 All cancers combined, age-specific rate, by age-group for NT Aboriginal, non-Aboriginal and Australian males, 1991-2019

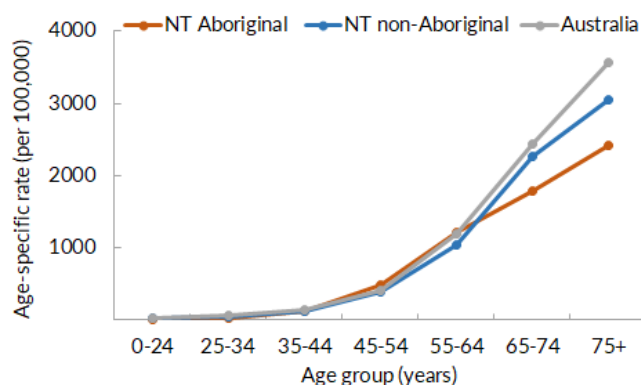
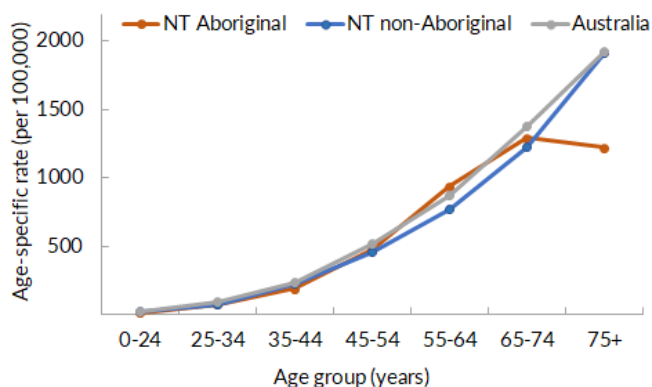


Figure 2 All cancers combined, age-specific rate, by age-group for NT Aboriginal, non-Aboriginal and Australian females, 1991-2019



Most common cancers

Cancer profiles differ between Aboriginal and non-Aboriginal Territorians, and between genders as shown in Figures 3 and 4. The most common cancers in Aboriginal males are lung cancers, followed by liver, oral cavity and pharyngeal cancers. In contrast, the three most common cancers diagnosed in non-Aboriginal males are prostate, melanoma and bowel cancer.

In women, breast cancer is the most prevalent, regardless of Indigenous status. For Aboriginal females, lung cancer and cancers of unknown primary site are the second and third most common cancers. For non-Aboriginal females, bowel and melanoma are the subsequent most common cancers, a similar finding to non-Aboriginal males.

Figure 3 Most common cancers, age-standardised incidence by Indigenous status, males, NT, 2012–2019

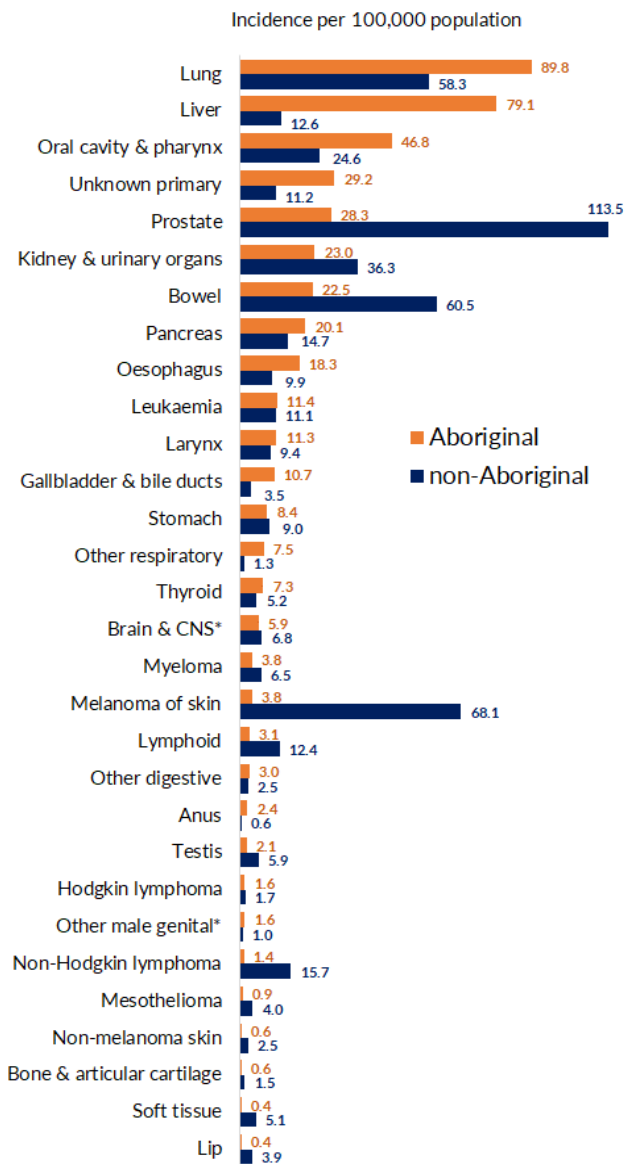
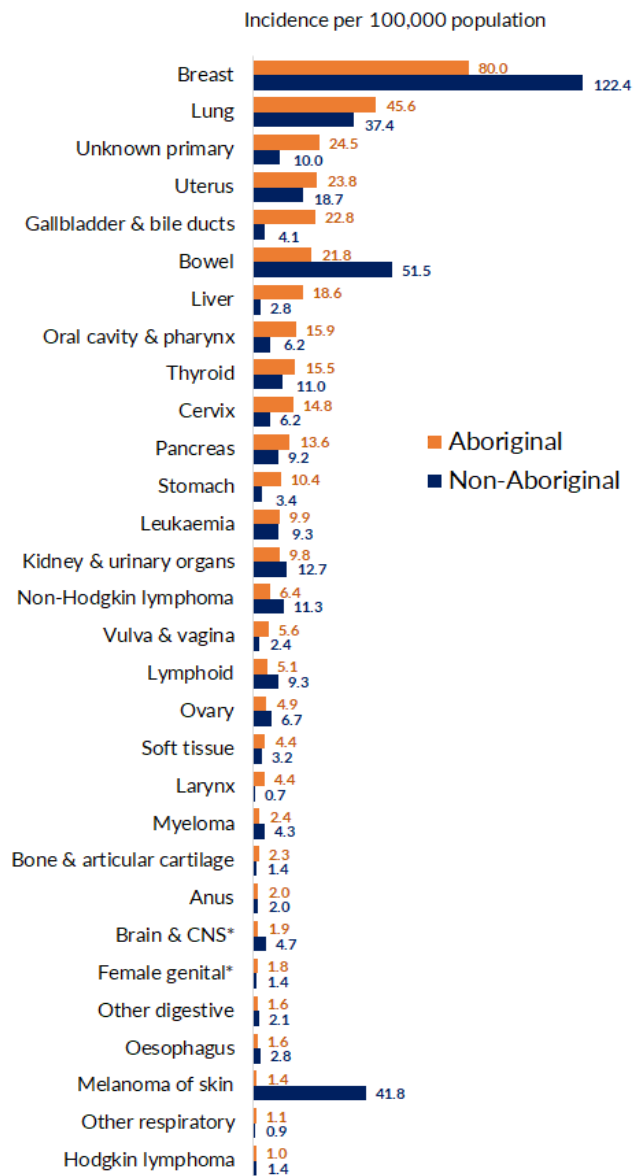


Figure 4 Most common cancers, age-standardised incidence by Indigenous status, females, NT, 2012–2019



Note: Cancers ranked in order of Aboriginal male rates
 *CNS = Central nervous system
 *Other male genital = penis, other and unspecified male genital organs

Note: Cancers ranked in order of Aboriginal female rates
 *CNS = Central nervous system
 *Other female genital = placenta, other and unspecified female organs

Cancer survival

Figures 5 to 8 show trends in relative survival of NT residents reported with all cancers combined at one year and five years after diagnosis. All population groups have improved survival trends. Non-Aboriginal peoples have better survival outcomes than Aboriginal peoples with the poorest survival observed amongst Aboriginal males and best survival outcomes observed in non-Aboriginal females.

The most significant improvements are observed in Aboriginal peoples, with the probability of being alive one year after cancer diagnosis for Aboriginal males more than doubling from 31.2% in 1991–1995 to 65.3%, 2016–2019. For the same time periods,

Aboriginal female one-year survival has increased from 43.6% to 73.3%, non-Aboriginal males 65.9% to 88.7%, and non-Aboriginal females from 80.6% to 92.0%.

Aboriginal peoples have the lowest probability of survival five years after diagnosis. In the most recent complete five year study period, 2011–2015, Aboriginal males had 36.8% probability of survival five years after diagnosis and Aboriginal females 46.5%. However, the five-year survival had increased from 18.6% and 29.1% in 1991–1995 for Aboriginal males and females respectively. Non-Aboriginal males show the greatest increase in probability of survival five years after diagnosis, with a baseline of 45.4% in 1991-1995

improving to 73.7% in 2011-2015. Over the same period, non-Aboriginal female five-year survival improved from 62.9% to 92.0%. Comparatively, Australian five-year cancer survival is reported as 68.5% (males) and 71.1% (females) for the reporting period 2013-2017.⁹ This suggests NT non-Aboriginal people have a higher probability of survival compared to Australian outcomes however NT cancer survival is likely overestimated as transiency of the non-Aboriginal population means death of cases who move interstate after diagnosis are not recorded on the NT cancer registry.

Figure 5 Relative survival at one year and five years after cancer diagnosis by five-year periods, Aboriginal males, NT 1991-2019

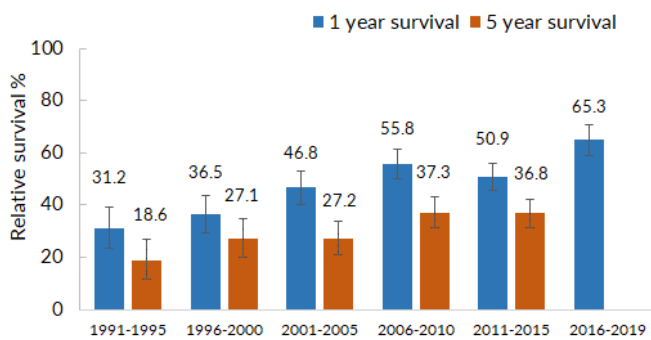


Figure 6 Relative survival at one year and five years after cancer diagnosis by five-year periods, non-Aboriginal males, NT 1991-2019

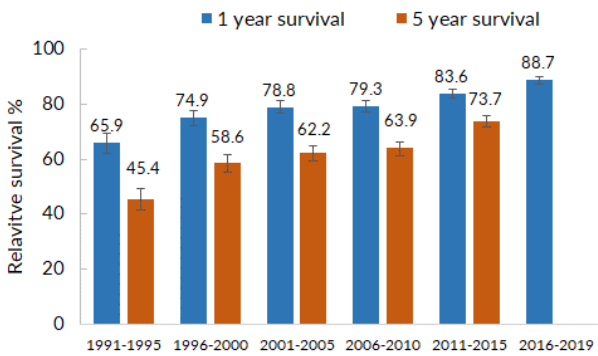


Figure 7 Relative survival at one year and five years after cancer diagnosis by five-year periods, Aboriginal females, NT 1991-2019

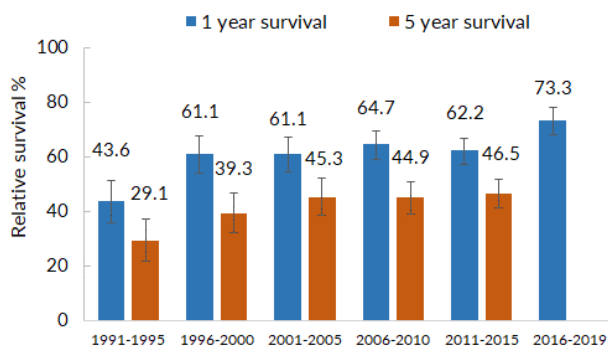
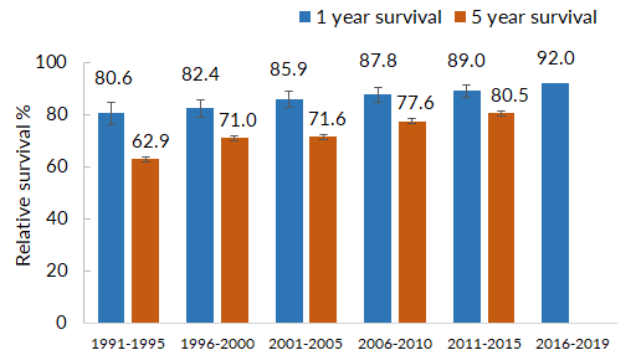


Figure 8 Relative survival at one year and five years after cancer diagnosis by five-year periods, non-Aboriginal females, NT 1991-2019



Cancer mortality

Age-adjusted cancer mortality rates among Aboriginal males and females were respectively 1.6 and 1.7 times higher comparative to non-Aboriginal males and females (Table 2). Non-Aboriginal NT residents had a similar mortality rate compared with the total Australian population.

Since 1991, cancer mortality has trended downward in all populations as shown in Figures 9 and 10. The largest decrease occurred in Aboriginal males.

Table 2 All cancers combined, age-standardised mortality rate, by Indigenous status and sex, NT and Australia, 1991-2019

| | Northern Territory | | | | Australia |
|--------|--------------------|-------|----------------|-------|-----------|
| | Aboriginal | | Non-Aboriginal | | Rate |
| | No. | Rate | No. | Rate | Rate |
| Male | 1009 | 381.6 | 2874 | 237.9 | 227.6 |
| Female | 936 | 252.3 | 1541 | 148.9 | 141.8 |

Note: Numerator source Australian Coordinating Registry⁵ including all NT residents with cancer reported as the primary cause of death; Denominators: Total population for NT⁷ and Australia⁶

Figure 9 All cancers combined age-standardised mortality rate by five-year periods, sex and Indigenous status, males, NT and Australia, 1991-2019

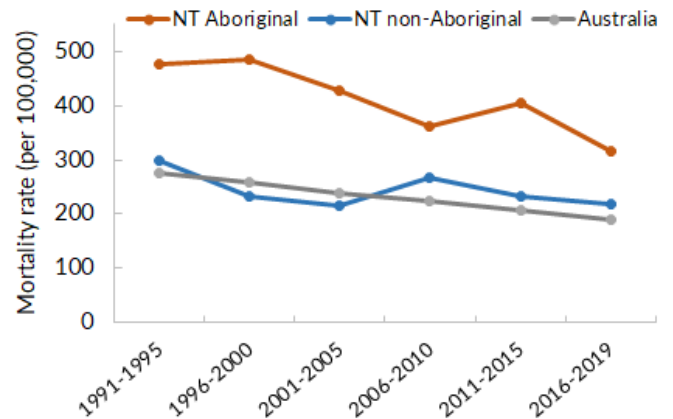
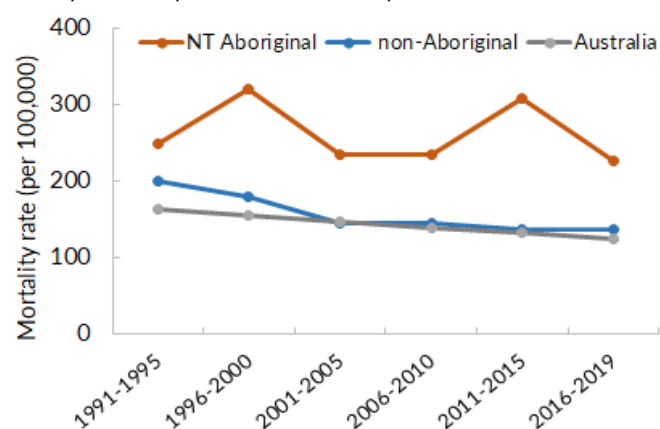


Figure 10 All cancers combined age-standardised mortality rate by five-year periods, sex and Indigenous status, females, NT and Australia, 1991–2019



Snapshot of 2019 NT cancers

In 2019, there were 824 reportable, malignant cancers diagnosed in NT residents.¹⁰ The most common types of cancer in 2019 are listed in Table 3 with lung, breast and oral cavity cancers the most common in Aboriginal peoples. For non-Aboriginal people, melanoma, breast and prostate cancer were the most prevalent cancers.

Table 3 Number of cases of cancer reported by site and Indigenous status, NT, 2019

| Cancer site | Aboriginal | non-Aboriginal | Total |
|---------------------------------|------------|----------------|------------|
| Lung ^a | 21 | 71 | 92 |
| Breast | 17 | 85 | 102 |
| Oral cavity ^b | 15 | 34 | 49 |
| Female genital organs | 14 | 27 | 41 |
| Liver ^c | 13 | 11 | 24 |
| Bowel | 9 | 76 | 85 |
| Kidney & urinary organs | 7 | 41 | 48 |
| Stomach ^d | 7 | 15 | 22 |
| Pancreas | 5 | 15 | 20 |
| Thyroid | 5 | 15 | 20 |
| Oesophagus | 5 | 12 | 17 |
| Prostate | 4 | 98 | 102 |
| Unknown primary | 4 | 3 | 7 |
| Non-Hodgkin lymphoma | 3 | 13 | 16 |
| Others ^e | 3 | 5 | 8 |
| Brain & CNS ^f | 3 | 4 | 7 |
| Melanoma of skin | 2 | 107 | 109 |
| Lymphoid tissues ^g | 2 | 11 | 13 |
| Leukaemia | 1 | 11 | 12 |
| Gallbladder & bile ducts | 1 | 3 | 4 |
| Hodgkin lymphoma | 1 | 1 | 2 |
| Bone & articular cartilage | 1 | 1 | 2 |
| Myeloma | 0 | 9 | 9 |
| Other male genital ^h | 0 | 8 | 8 |
| Soft tissue | 0 | 4 | 4 |
| Mesothelioma | 0 | 1 | 1 |
| Total | 143 | 681 | 824 |

Notes ^a Lung, other respiratory & intrathoracic organs; ^b Lip, larynx, oral cavity & pharynx; ^c Liver cancers are likely underreported, as liver cancer diagnosis move from predominately pathological to radiological basis of liver cancer diagnosis. As laboratories have traditionally been the main source of cancer notifications, advocacy for alternative pathways of cancer notifications is ongoing; ^d Stomach & other digestive organs; ^e Anus, other and ill-defined sites; ^f Brain and central nervous system; ^g Other lymphoid, haematopoietic & related tissue; ^h All male genital organs excluding prostate

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