

Cancer in the Northern Territory, 1991–2020

Introduction

This factsheet describes cancer statistics for diagnoses in Northern Territory (NT) residents between 1991–2020. It presents statistics on invasive cancers and three in situ cancers (breast, melanoma, bladder). We also report trends for the most common cancers and cancers associated with screening programs. Cancer mortality rates (defined as the underlying cause of death) are presented for all invasive cancers and by cancer type.

Cancer statistics were sourced from the Northern Territory Cancer Registry (NTCR) and Australian

Cancer Database.^{1,2} Mortality data were obtained from the Australian Coordinating Registry³ and estimated resident population derived from Australian Bureau of Statistics.^{4–6} Rates are expressed as the number of new cases (incidence) or deaths (mortality) per 100,000 population and adjusted to the 2001 Australian standard population using direct age-standardisation.⁷ Population denominators are a sum of the annualised population where multiple years are reported collectively. Cancers are categorised in accordance with ICD-10.⁸

All invasive cancers combined

Figure 1. Invasive cancers, age-standardised incidence rate by 5-year period, by sex, NT & Australia, 1991–2020

Incidence of all invasive cancers in the NT increased from 432.4 cases per 100,000 population in 1991–1995 to 455.2 cases in 2016–2020; with the highest incidence noted in 2011–2015 (480.3 cases; Figure 1). Overall, NT cancer rates are lower than Australia. NT males experience higher rates than NT females, and rates among NT Aboriginal peoples are lower than NT non-Aboriginal peoples (Table 1). The number of people diagnosed with cancer is expected to increase with population size and an ageing population.⁹

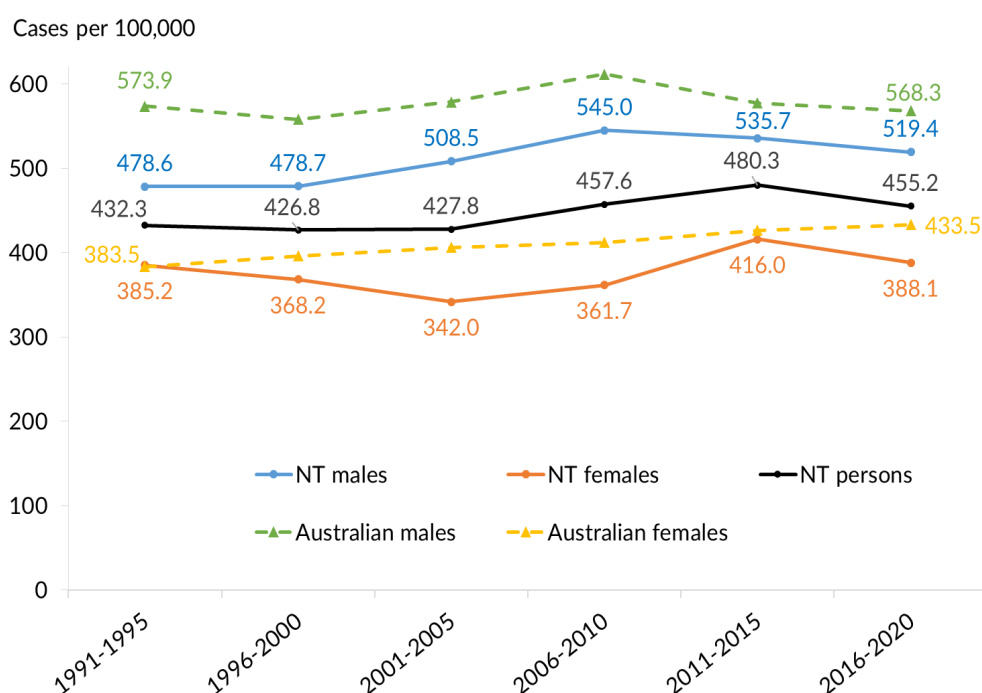


Table 1. All invasive cancers combined, age-standardised incidence rate by 5-year period, Indigenous status & sex, NT & Australia, 1991–2020

Time periods (years)	Male					Female				
	Northern Territory				Australia ¹	Northern Territory				Australia ¹
	Aboriginal		Non-Aboriginal			Aboriginal		Non-Aboriginal		
	No.	Rate	No.	Rate	Rate	No.	Rate	No.	Rate	Rate
1991-1995	135	426.6	720	494.1	573.9	152	320.0	548	407.3	383.5
1996-2000	176	418.5	982	497.9	558.3	201	347.6	670	373.8	396.4
2001-2005	235	448.9	1,222	522.5	578.9	240	333.6	788	345.3	406.5
2006-2010	298	510.8	1,586	559.5	611.7	329	386.1	947	357.1	412.3
2011-2015	347	479.4	1,887	545.9	577.5	397	451.4	1,264	408.6	426.7
2016-2020	386	451.3	2,074	529.5	568.3	437	355.6	1,439	397.9	433.5

Cancer types

The most commonly occurring invasive cancers in the NT and three in situ cancers for the most recent five years of data available, 2016–2020 are presented in **Table 2**.

The most common cancers among NT Aboriginal males were lung (82.5 per 100,000 males), liver (73.4) and cancer of the oral cavity and pharynx (48.3). For non-Aboriginal males in the NT, prostate

cancer (113.0) was most common, followed by melanoma of the skin (67.5) and lung cancer (63.2).

In females, breast cancer was the most common regardless of Indigenous status (Aboriginal 64.8; non-Aboriginal 114.7). In Aboriginal females, the next most common cancers were lung (42.7) and liver (28.0); and for non-Aboriginal females, cancers of the bowel (55.3), melanoma of the skin (41.2) and lung cancer (41.1).

Table 2. Total number of cases for a 5-year period and age-standardised incidence rate (per 100,000 population) for the most common invasive and insitu cancers, by site, sex & Indigenous status, NT 2016-2020⁺

Cancer site	ICD-10 code(s)	Sex	Aboriginal		Non-Aboriginal		Total cases	
			Cases	Rate (per 100,000)	Cases	Rate (per 100,000)	Cases	Rate (per 100,000)
Most common invasive cancers								
Oral cavity & pharynx	C01-C14	Male	48	48.3	105	24.3	153	28.6
		Female	16	12.5	16	4.5	32	6.4
		Persons					185	17.9
Bowel	C18-C20	Male	20	21.8	235	57.4	255	51.6
		Female	26	24.3	193	55.3	219	48.3
		Persons					474	50.2
Liver	C22	Male	54	73.4	65	15.4	119	23.8
		Female	35	28.0	14	4.3	49	9.7
		Persons					168	17.0
Lung	C33-C34	Male	68	82.5	227	63.2	295	67.0
		Female	50	42.7	136	41.1	186	41.5
		Persons					481	54.3
Melanoma of skin	C43	Male	< 5	*	271	67.5	*	60.0
		Female	< 5	*	164	41.2	*	31.6
		Persons					440	44.3
Breast	C50	Male	< 5	*	10	2.2	*	*
		Female	86	64.8	430	114.7	516	103.4
		Persons					*	50.9
Prostate	C61	Male	30	42.4	465	113.0	495	103.0
Insitu cancers								
Melanoma	D03	Male	5	*	299	72.2	304	61.6
		Female	< 5	*	216	57.8	*	44.9
		Persons					*	53.3
Breast^	D05	Female	9	*	68	18.1	77	15.7
Bladder	D09.0	Male	< 5	*	46	13.3	*	11.8
		Female	< 5	*	10	2.6	*	2.1
		Persons					58	7.1

* Case numbers not reported if cell size < 5 cases and rate not reported if cell size < 10 cases. ^ No cases in males

⁺ Bold **blue (males)** & **pink (females)** indicate most common cancers sites for each population group

Trends in common cancers & cancers able to be detected by screening

The following figures present 5-yearly trends in order of the most common cancers by sex and sub-populations including NT Aboriginal, NT non-Aboriginal and Australian. Cervical cancer is also presented as the remaining cancer detectable by screening, but it is not among the most common cancers in the NT.

Breast cancer in females (Figure 2), showed increasing incidence in all populations. The overall lowest incidence was in NT Aboriginal females, trending from 23.7 in 1991–1995 to 64.8 in 2016–2020. Due to small numbers, incidence in this population fluctuates, however the overall trend is increasing. For the same periods, the incidence in non-Aboriginal females increased from 94.4 to 114.7; with the highest incidence in Australian females increasing from 107.2 to 127.0. Breast screening for women was first introduced in 1991, with an expansion of targeted ages for screening between 2013 and 2017.

Prostate cancer (Figure 3) showed an increasing incidence up to a peak in 2006–2010, with a subsequent declining trend. The lowest incidence occurred in NT Aboriginal males (peak 56.2 cases per 100,000 males); followed by NT non-Aboriginal males (peak 135.2) with the highest in Australian males (peak 186.7).

Lung cancer (Figure 4) incidence declined for all males. The highest incidence was in Aboriginal males, declining from 134.4 in 1991–1995 to 82.5 in 2016–2020. NT non-Aboriginal males had the next highest incidence (declining from 94.6 to 63.2), followed by Australian males (declining from 72.9 to 52.2). Comparatively, the incidence for females was lower, with fluctuating incidence due to small numbers in Aboriginal females (range 42.7 to 73.3), and slightly increasing incidence in NT non-Aboriginal females from 28.9 in 2001–2005 to 41.1 in 2016–2020, with a similar trend observed in Australian women (29.5 in 2001–2005, 36.8 in 2016–2020).

Figure 2. Female breast cancer, age-standardised incidence by Indigenous status, NT & Australia, 1991–2020

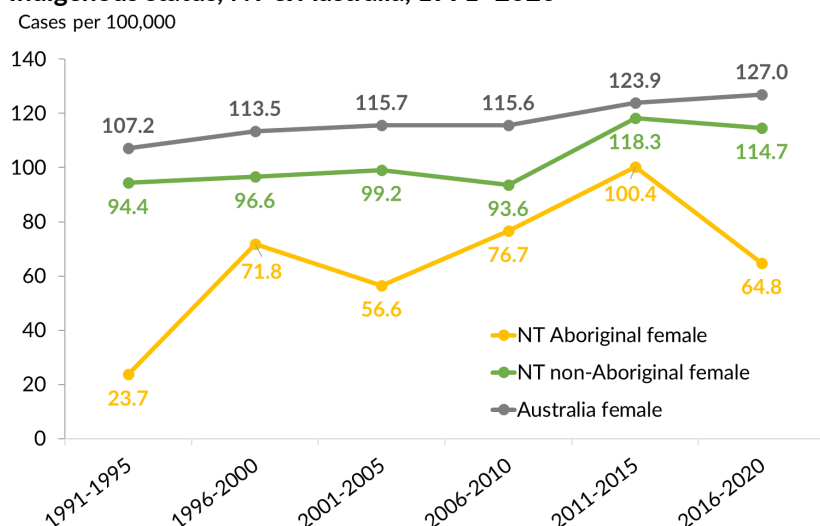


Figure 3. Prostate cancer, age-standardised incidence by Indigenous status, NT & Australia, 1991–2020

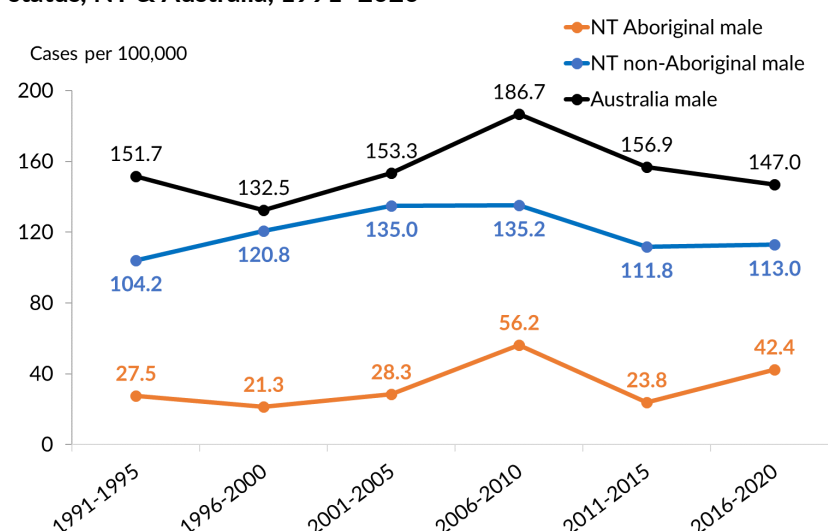
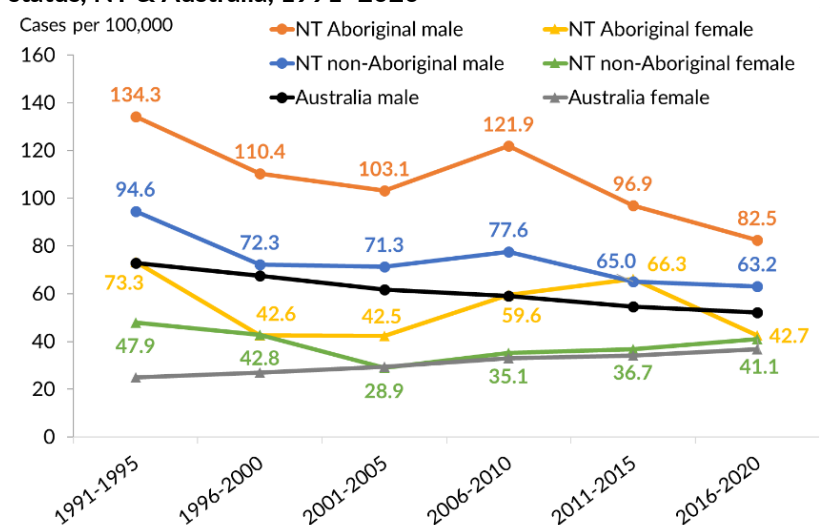
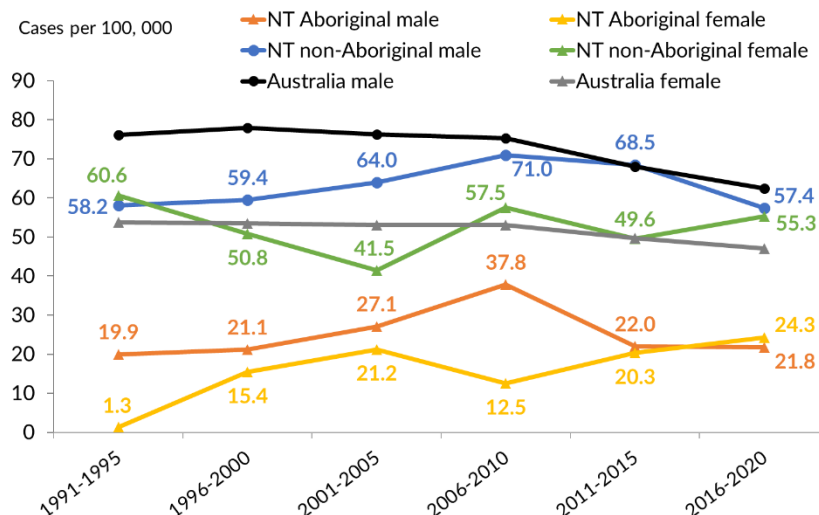


Figure 4. Lung cancer, age-standardised incidence by sex & Indigenous status, NT & Australia, 1991–2020



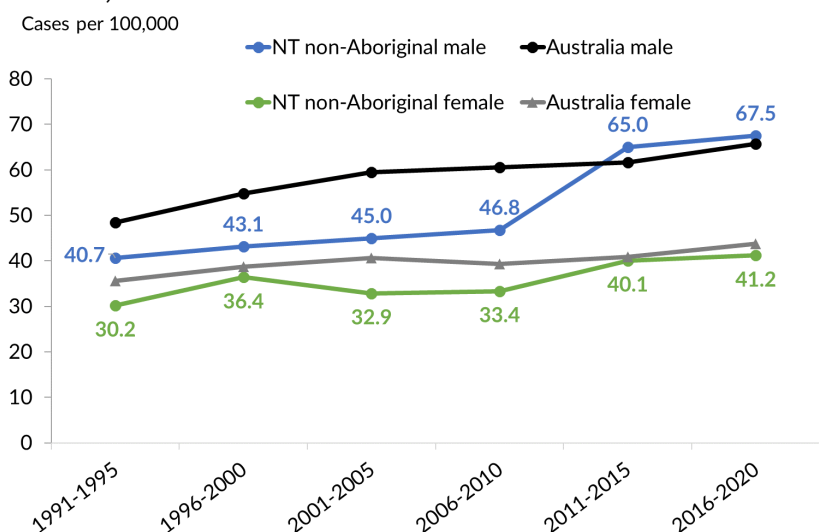
Bowel cancer (Figure 5) was lowest among NT Aboriginal peoples, ranging for males between 19.9 and 37.8; and females 1.3 to 24.3 cases per 100,000. NT non-Aboriginal and the Australian population have similar incidence and disease characteristics, highest in males. Coinciding with introduction of the National Bowel Cancer Screening Program in 2006, the incidence for NT non-Aboriginal males trended down from 71.0 in 2006–2010 to 57.4 in 2016–2020. For the same periods, the incidence in NT non-Aboriginal females remained unchanged, at 57.5 to 55.3.

Figure 5. Bowel cancer, age-standardised incidence by sex & Indigenous status, NT & Australia, 1991–2020



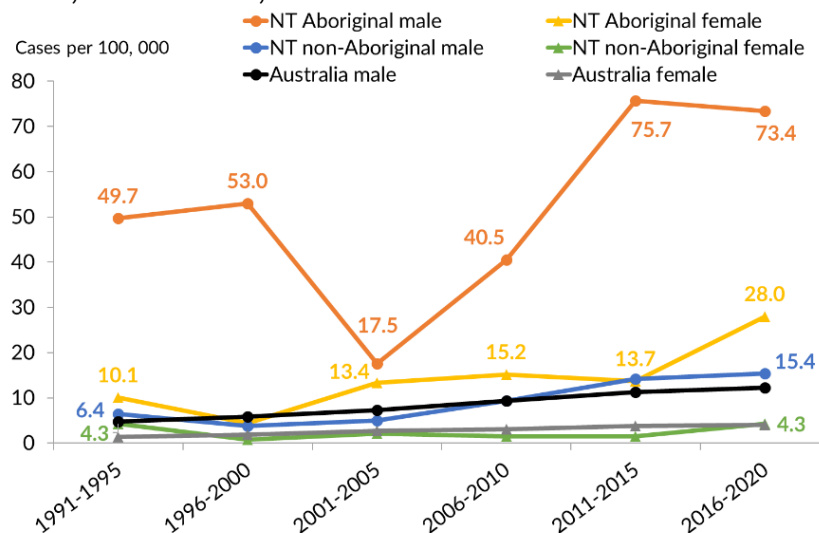
Melanoma (Figure 6) was rare in Aboriginal peoples and is not shown on the graph. Incidence was highest for males, steadily increasing from 40.7 in 1991–1995 to 67.5 in 2016–2020. Incidence in NT non-Aboriginal females also increased for the same period, from 30.2 to 41.2 cases. In the most recent 10 years, the incidence of melanoma for NT non-Aboriginal people was commensurate with rates for the Australian population.

Figure 6. Melanoma, age-standardised incidence by sex, NT & Australia, 1991–2020



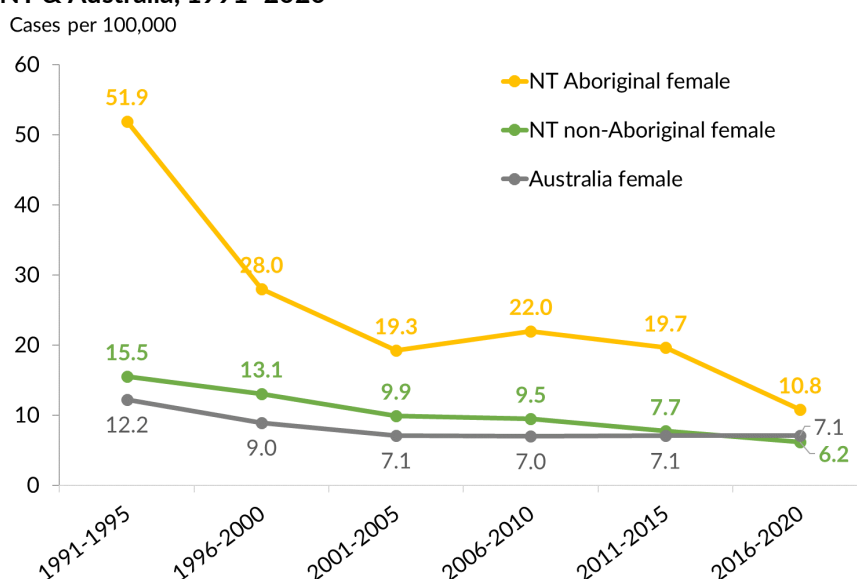
Liver cancer (Figure 7) was highest in NT Aboriginal males and highest in the preceding 10 years with incidence between 73.4 and 75.7 from 2011–2020. Aboriginal females in the NT had the next highest incidence, peaking in 2016–2020 at 28.0 cases per 100,000 females. Comparatively incidence in the NT non-Aboriginal and Australian population were lower, however trending upwards, with NT non-Aboriginal males and females peaking at 15.4 and 4.3 respectively in 2016–2020. The increase in cases shown since 2011–2015 may be due to better cases ascertainment, as NTCR undertook enhanced surveillance to capture radiologically or clinically diagnosed liver cancers. As cancer notifications to NTCR rely on hospital and laboratory notifications, there is potential for these cases to be missing from notifications to the Registry.

Figure 7. Liver cancer, age-standardised incidence by sex & Indigenous status, NT & Australia, 1991–2020



Cervical cancer (Figure 8) declined following the introduction of the human papillomavirus vaccine from 2007. In accordance with the global strategy to accelerate the elimination of cervical cancer, Australia has developed a National Strategy that seeks to achieve less than 4 cervical cancer cases per 100,000 females per year.¹⁰ Between 2016-2020, the NT incidence for Aboriginal and non-Aboriginal women were respectively 10.8 cases and 6.2 cases per 100,000 females. These have decreased from 51.9 and 15.5 respectively for 1991-1995.

Figure 8. Cervix cancer, age-standardised incidence by Indigenous status, NT & Australia, 1991-2020

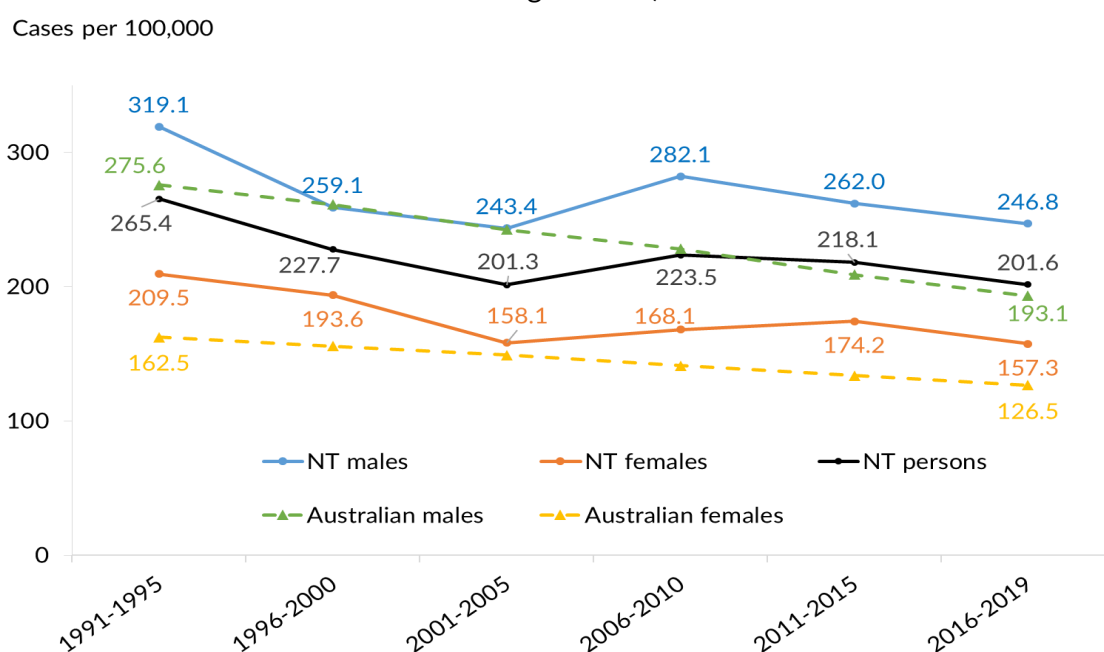


Mortality

Overall, mortality due to cancer as the underlying cause of death has declined (Figure 9). Cancer mortality was greater for NT residents than the Australian population. The highest cancer mortality rate was in NT males, which declined from 319.1 to 246.8 deaths per 100,000 males between 1991-1995 and 2016-2020. Comparatively cancer mortality in Australian males declined from 275.6 to 193.1. Cancer mortality in NT females declined from 209.5 to 157.3 deaths per 100,000 females. In Australian females, the decline was from 162.5 to 126.5.

From 2016 to 2020, 1,572 NT residents died with an invasive cancer listed as underlying cause of death (**Table 3**). Lung cancer was the most common cause of cancer death in the NT regardless of Indigenous status or sex; including 75.9 deaths per 100,000 for Aboriginal males; 48.5 deaths for Aboriginal females, 46.9 and 33.1 for non-Aboriginal males and females respectively. The second most common underlying cause of death for Aboriginal males was liver cancer (48.5) and unknown primary site for females (27.6). For females, breast cancer was among the top three causes of cancer death (Aboriginal 23.8; non-Aboriginal 15.6).

Figure 9 All invasive cancers*, age-standardised mortality rate by 5-year period, by sex, NT & Australia, 1991-2020



*ICD-10 codes C00 - C96; D44 - D46; D47.1; D47.3 - D47.5

Table 3. Total number of deaths for a 5-year period and age-standardised mortality rate (deaths per 100,000 population) for all cancers combined and the most common cancers, by sex & Indigenous status, NT 2016–2020

Cancer site	ICD-10 code(s)	Sex	Aboriginal		Non-Aboriginal		All persons	
			Deaths	Mortality rate	Deaths	Mortality rate	Deaths	Mortality rate
All cancers combined	C00-C96	Male	238	322.6	722	231.1	960	246.8
	D45-D46;	Female	236	244.7	376	133.7	612	157.3
	D47.1; D47.3-D47.5	Persons	474	277.0	1,098	184.0	1,572	201.6
Lung	C33-C34	Male	54	75.9	156	46.9	210	51.6
		Female	50	48.5	95	33.1	145	36.2
		Persons	104	59.1	251	40.3	355	43.8
Liver	C22	Male	33	48.5	52	14.5	85	19.4
		Female	27	22.9	13	4.6	40	8.7
		Persons	60	32.8	65	9.9	125	14.1
Oral cavity & pharynx	C01-C14	Male	35	38.3	30	8.1	65	13.1
		Female	8	6.4	8	2.5	16	3.5
		Persons	43	20.2	38	5.6	81	8.5
Prostate	C61	Male	7	20.4	64	28.2	71	27.2
Breast	C50	Female	20	23.8	49	15.6	69	17.3
Bowel	C18-C20	Male	10	14.1	77	22.1	87	20.9
		Female	9	8.9	46	16.1	55	14.8
		Persons	19	11.1	123	19.4	142	18.0
Pancreas	C25	Male	16	24.2	48	16.0	64	17.0
		Female	20	21.5	25	10.1	45	12.5
		Persons	36	22.6	73	13.2	109	14.7
Unknown primary	C80	Male	16	19.0	40	14.1	56	15.3
		Female	24	27.6	14	5.2	38	10.0
		Persons	40	24.5	54	9.4	94	12.3

*Bold blue (males) & pink (females) indicate top 3 cancers sites with highest mortality for each population group

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