

Prevalence of chronic diseases in the Northern Territory, 2019

Introduction

Chronic diseases have a substantial impact on individuals and the Australian health system. They lead to increased hospital admissions, long-term disability, reduced quality of life and death.¹ Chronic diseases cause eight out of ten premature deaths and account for 80% of years of life lost due to ill health, disability or early death.²

There is limited reliable information on chronic disease prevalence in the Northern Territory (NT) population, because data sources are incomplete and disparate.³ In this fact sheet, we have linked data sources to provide estimates of the prevalence of important chronic diseases including ischaemic heart disease (IHD), diabetes, stroke, chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), hypertension, rheumatic heart disease (RHD), asthma and chronic liver disease (CLD) for the NT adult population (18 years and older).

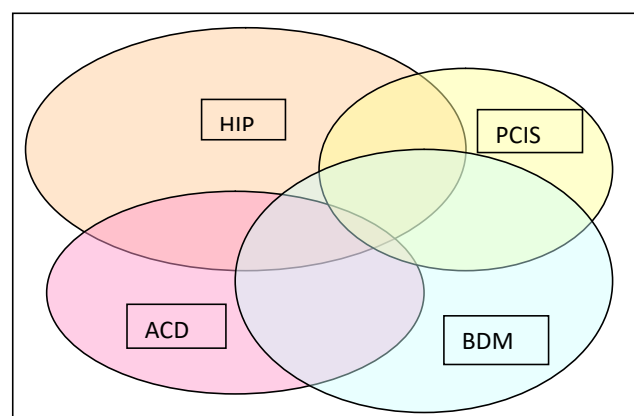
Method

This study used four NT Health data sources for the years 2015 to 2019: Primary Care Information System (PCIS), Hospital Inpatient (HIP), Aged Care and Disability (ACD) and death registration data from Births, Deaths and Marriages (BDM). The four datasets were linked using Hospital Registration Number (HRN). A capture-recapture method and a regression log-linear model were used to estimate the number of unknown cases of chronic conditions in the NT Aboriginal and non-Aboriginal populations to derive a crude prevalence estimate (as illustrated in Figure 1).^{4, 5} Results for the overall population were compared with published national data, where available, and results for non-Aboriginal population aged 18 and older were compared with the findings of a population survey conducted in the NT in 2000.³

The International Statistical Classification of Diseases and Related Health Problems 10th

Edition⁶ was used to code chronic diseases for HIP and ACD data and International Classification of Primary Care (ICPC-2) 2nd Edition⁷ was used for PCIS data. Key word searching was used to define chronic disease in the BDM data.

Figure 1. Northern Territory data sources linked to determine prevalence estimates, 2015-2019



Ischaemic Heart Disease (IHD)

In 2019, the prevalence of IHD among NT adults aged 18 years and over was 5.0% (Table 1). The crude rates were two times higher among the Aboriginal population compared to non-Aboriginal population (M: 10.1% vs 4.6%, F: 7.5% vs 2.5% respectively).

The difference in IHD prevalence was more pronounced in the age group 18–49 years, suggesting an earlier onset of IHD among the NT Aboriginal population. Recent research has suggested that CVD screening among Aboriginal population should commence from the age of 18 years at a minimum.⁸ The burden of IHD was higher in males than females across all population groups. The prevalence of IHD in the NT Aboriginal population was higher than Aboriginal Australians elsewhere (M: 9.1%; F: 5.9%) as was the prevalence of IHD among the NT non-Aboriginal population (M: 3.6%; F: 1.8%).⁹

The higher prevalence of IHD in the NT population is likely related to higher smoking prevalence among all Territorians, irrespective of Indigenous status. The prevalence of IHD among NT non-Aboriginal Territorians from this study was higher than the self-reported rate from previous survey (conducted in 2000) for the same population (male and female combined: 2.8%).³

Table 1. Prevalence of IHD, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total	Estimated prevalence (%)
18 - 49 years				
Aboriginal	1224	1269	2493	7.0
Male	631	772	1403	7.8
Female	593	497	1090	6.1
Non-Aboriginal	412	575	987	1.1
Male	302	350	652	1.5
Female	110	225	335	0.8
TOTAL	1636	1845	3481	2.8
50 years and over				
Aboriginal	861	837	1698	14.0
Male	435	509	944	17.6
Female	426	328	754	11.1
Non-Aboriginal	1847	2290	4137	8.3
Male	1279	1393	2672	10.0
Female	568	897	1465	6.3
TOTAL	2708	3127	5835	9.4
Total (18 years and over)				
Aboriginal	2085	2106	4191	8.7
Male	1066	1282	2348	10.1
Female	1019	825	1844	7.5
Non-Aboriginal	2259	2865	5124	3.8
Male	1581	1743	3324	4.6
Female	678	1122	1800	2.5
TOTAL	4344	4972	9316	5.0

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Diabetes

In 2019, the prevalence of diabetes among NT adults aged 18 years and over was 9.1% (Table 2). Almost one in five NT Aboriginal male adults (19.1%) and one in four NT Aboriginal female adults (23.7%) had diabetes in 2019.

Diabetes was five times more prevalent among Aboriginal Territorians (22.7%) compared with non-Aboriginal Territorians (4.4%). The prevalence of diabetes was highest among NT Aboriginal females (26.1%). In contrast, for non-Aboriginal Territorians, the prevalence was highest among males (4.8%). In the NT, there is a higher crude prevalence of diabetes (nine to 14 times) in the

younger (18–49 years) Aboriginal population compared non-Aboriginal adults of the same age group.

Table 2. Prevalence of diabetes, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total	Estimated prevalence (%)
18 - 49 years				
Aboriginal	4920	2187	7107	19.9
Male	1837	1021	2858	16.0
Female	3083	1166	4249	23.7
Non-Aboriginal	1157	380	1537	1.8
Male	643	177	820	1.8
Female	514	203	717	1.7
TOTAL	6077	2567	8644	9.4
50 years and over				
Aboriginal	2638	1137	3775	7.5
Male	1060	531	1591	29.6
Female	1578	606	2184	32.2
Non-Aboriginal	3361	1055	4416	8.8
Male	2094	492	2586	9.7
Female	1267	563	1830	7.8
TOTAL	5999	2192	8191	13.2
Total (18 years and over)				
Aboriginal	7558	3324	10882	22.7
Male	2897	1551	4448	19.1
Female	4661	1773	6434	26.1
Non-Aboriginal	4518	1435	5953	4.4
Male	2737	670	3407	4.8
Female	1781	765	2546	3.9
TOTAL	12076	4759	16835	9.1

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

The prevalence of diabetes among NT Aboriginal Territorians (22.7%) was higher than the national rate at 12.6%,¹⁰ whereas the prevalence of diabetes among NT non-Aboriginal Territorians (4.4%) was similar national prevalence at 4.3%.¹⁰ The prevalence of diabetes among NT non-Aboriginal Territorians from this study was similar to the self-reported rate in the 2000 population health and wellbeing survey for the same population (male and female combined: 4.4%).³

Stroke

In 2019, the prevalence of stroke among NT adults aged 18 years and over was 1.1% (Table 3). Prevalence results were comparable between NT Aboriginal males (1.5%) and females (1.4%), and slightly higher than the non-Aboriginal population (M: 1.1%; F: 1.2%).

Among the younger age group (18-49 years), there was a higher prevalence among the Aboriginal

population (1.0%) compared non-Aboriginal population (0.3%), suggesting earlier onset of vascular disease in the NT Aboriginal population.

Table 3. Prevalence of stroke, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	229	117	346	1.0
Male	103	66	169	0.9
Female	126	50	176	1.0
Non-Aboriginal	172	103	275	0.3
Male	91	59	150	0.3
Female	81	45	126	0.3
TOTAL	401	220	621	0.5
50 years and over				
Aboriginal	246	115	361	3.0
Male	119	66	185	3.4
Female	127	50	177	2.6
Non-Aboriginal	682	370	1052	2.1
Male	443	210	653	2.4
Female	239	160	399	1.7
TOTAL	928	485	1413	2.3
Total (18 years and over)				
Aboriginal	475	232	707	1.5
Male	222	132	354	1.5
Female	253	100	353	1.4
Non-Aboriginal	854	524	1582	1.2
Male	534	269	803	1.1
Female	320	255	779	1.2
TOTAL	1329	706	2035	1.1

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Stroke prevalence among NT population (1.1%) was comparable to national estimates (1.3%).⁹ The prevalence of stroke among the NT non-Aboriginal population was slightly higher compared to the self-reported rate in the 2000 NT population health and wellbeing survey (0.7%).³

Chronic Obstructive Pulmonary Disease (COPD)

The prevalence of COPD among Territorians is 2.9% (Table 4). The rates among the Aboriginal population (M:6.1%; F:6.8%) were three to four times higher compared with the non-Aboriginal population (M:1.8%; F:1.6%). The difference in COPD prevalence between Aboriginal and non-Aboriginal Territorians was higher in the younger age group (18-49 years), demonstrating an earlier onset of COPD in the NT Aboriginal population.

Among Aboriginal Territorians aged 50 years COPD prevalence was twice as high as the Aboriginal national prevalence for males (13.1%

compared to 6.7%), but lower for females (10.8% compared to 13.0%). The prevalence of COPD among NT non-Aboriginal Territorians aged 50 years and over was slightly lower than their national counterparts (M4.5%; F:5.1%).¹¹

Table 4. Prevalence of COPD, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	971	694	1665	4.7
Male	371	348	719	4.0
Female	600	346	946	5.3
Non-Aboriginal	189	164	353	0.4
Male	101	82	183	0.4
Female	88	82	170	0.4
TOTAL	1160	858	2018	1.7
50 years and over				
Aboriginal	861	574	1435	11.8
Male	413	288	701	13.1
Female	448	286	734	10.8
Non-Aboriginal	1099	854	1953	3.9
Male	678	428	1106	4.1
Female	421	426	847	3.6
TOTAL	1960	1428	3388	5.4
Total (18 years and over)				
Aboriginal	1832	1268	3100	6.5
Male	784	635	1419	6.1
Female	1048	632.5	1681	6.8
Non-Aboriginal	1288	1018	2306	1.7
Male	779	510	1289	1.8
Female	509	508	1017	1.6
TOTAL	3120	2286	5406	2.9

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Chronic Kidney Disease (CKD)

Among the NT adult population, the prevalence of CKD is 9.4% (Table 5). One in four NT Aboriginal adults had a diagnosed CKD or had biomedical signs of CKD, with the prevalence slightly higher among females compared with males. The difference in prevalence between the NT Aboriginal and non-Aboriginal populations was more extreme in the younger age group (18-49 years), demonstrating the earlier onset in the NT Aboriginal population.

Almost half of Aboriginal population those aged over 50 years, Aboriginal males (47.9%) and Aboriginal females (45.2%), in the NT have CKD or clinical biomarkers for CKD. The prevalence of CKD among Aboriginal Territorians (26.7%) exceeded the national prevalence estimate at

22.0% for this population. Whereas, the NT non-Aboriginal prevalence was much lower (3.3% versus 10.0%), which may be explained by the younger age of this population in the NT.¹²

Table 5. Prevalence of CKD, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	2772	4416	7188	20.1
Male	1230	2101	3331	18.6
Female	1542	2315	3857	21.6
Non-Aboriginal	180	588	768	0.9
Male	120	280	400	0.9
Female	60	308	368	0.9
TOTAL	2952	5004	7956	6.5
50 years and over				
Aboriginal	2228	3407	5635	46.4
Male	948	1621	2569	47.9
Female	1280	1786	3066	45.2
Non-Aboriginal	912	2765	3677	7.3
Male	602	1316	1918	7.2
Female	310	1449	1759	7.5
TOTAL	3140	6172	9312	15.0
Total (18 years and over)				
Aboriginal	5000	7823	12823	26.7
Male	2178	3722	5900	25.4
Female	2822	4101	6923	28.0
Non-Aboriginal	1092	3353	4445	3.3
Male	722	1595	2317	3.3
Female	370	1758	2128	3.3
TOTAL	6092	11176	17268	9.4

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Hypertension

The prevalence of hypertension (diagnosed and/or measured) overall was 14.6% (Table 6). Hypertension was almost three times higher in NT Aboriginal adults (28.0%) compared with non-Aboriginal adults (9.9%). The prevalence was higher in the NT Aboriginal population in all age groups, however the difference was more pronounced in the younger age group (18-49 years).

The prevalence of hypertension among NT adults were lower than the national rates overall and by Indigenous status (14.6 in NT compared to 18.0% nationally).¹³ The prevalence of hypertension for the NT non-Aboriginal people from this study was higher than the self-reported rate in the 2000 population health and wellbeing survey of the same population (5.6%).³

Table 6. Prevalence of hypertension, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	2859	5130	7989	22.3
Male	1298	2551	3849	21.5
Female	1561	2578	4139	23.1
Non-Aboriginal	694	2460	3154	3.6
Male	421	1224	1645	3.7
Female	273	1237	1510	3.6
TOTAL	3553	7590	11143	9.1
50 years and over				
Aboriginal	1971	3453	5424	44.6
Male	823	1717	2540	47.3
Female	1148	1736	2884	42.5
Non-Aboriginal	2372	8003	10375	20.7
Male	1386	3980	5366	20.1
Female	986	4023	5009	21.4
TOTAL	4343	11456	15799	25.4
Total (18 years and over)				
Aboriginal	4830	8582	13412	28.0
Male	2121	4268	6389	27.5
Female	2709	4314	7023	28.5
Non-Aboriginal	3066	10463	13529	9.9
Male	1807	5204	7011	9.9
Female	1259	5259	6518	10.0
TOTAL	7896	19046	26942	14.6

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Rheumatic Heart Disease (RHD)

The prevalence of RHD in NT was 1.9% (Table 7). RHD was seven to eight times higher among the Aboriginal population compared with non-Aboriginal population. The prevalence of RHD was higher in females than males in all population groups except among younger (18-49 years) NT non-Aboriginal adults, consistent with national findings.¹⁴

There is considerable difference (19 to 36 times higher) in the RHD prevalence among NT Aboriginal adults compared to non-Aboriginal adults aged 18 to 49 years. There are no comparable population-based study findings of RHD prevalence among Australian adults with most prevalence estimates determined from school-based modelling. The prevalence of RHD among NT Aboriginal adults was similar to national estimates for Aboriginal people living in remote and rural areas (3–5%).¹⁵

Table 7. Prevalence of RHD, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	792	1132	1924	5.4
Male	231	425	656	3.7
Female	561	706	1267	7.1
Non-Aboriginal	49	123	172	0.2
Male	27	46	73	0.2
Female	22	77	99	0.2
TOTAL	841	1255	2096	1.7
50 years and over				
Aboriginal	204	432	636	5.2
Male	86	162	248	4.6
Female	118	270	388	5.7
Non-Aboriginal	230	564	794	1.6
Male	134	212	346	1.3
Female	96	352	448	1.9
TOTAL	434	996	1430	2.3
Total (18 years and over)				
Aboriginal	996	1564	2560	5.3
Male	317	588	905	3.9
Female	679	976	1655	6.7
Non-Aboriginal	279	687	966	0.7
Male	161	258	419	0.6
Female	118	429	547	0.8
TOTAL	1275	2251	3526	1.9

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Table 8. Prevalence of asthma, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	510	1658	2168	6.1
Male	112	436	548	3.1
Female	398	1222	1620	9.1
Non-Aboriginal	329	1405	1734	2.0
Male	102	370	472	1.1
Female	227	1035	1262	3.0
TOTAL	839	3063	3902	3.2
50 years and over				
Aboriginal	116	332	448	3.7
Male	28	87	115	2.1
Female	88	244	332	4.9
Non-Aboriginal	216	840	1056	2.1
Male	68	221	289	1.1
Female	148	619	767	3.3
TOTAL	332	1171	1503	3.0
Total (18 years and over)				
Aboriginal	626	1990	2616	5.5
Male	140	524	664	2.9
Female	486	1466	1952	7.9
Non-Aboriginal	545	2244	2789	2.0
Male	170	591	761	1.1
Female	375	1653	2028	3.1
TOTAL	1171	4234	5405	2.9

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Asthma

The prevalence of asthma was 2.9% among NT adults (Table 8). The rate was almost three times higher among the Aboriginal population (5.5%) compared with the non-Aboriginal population (2.0%). Asthma was more prevalent among females compared with males in all age groups. It was more commonly diagnosed among younger NT Aboriginal Territorians (18-49 years) compared with adults over 50 years. The prevalence among the non-Aboriginal population was similar across all age groups.

The prevalence of asthma calculated here could be underestimated across the population and with the sub-groups. It was lower than the national average (clinically diagnosed adults on asthmatic medication: 11.9%)¹⁶ and lower than the self-reported rate in the 2000 population health and wellbeing survey of the same population (9.8%).³

Chronic Liver Disease (CLD)

The prevalence of CLD was 5.4% in NT (Table 9). The Aboriginal population has approximately three to four times higher CLD prevalence compared with the non-Aboriginal population (11.9% compared with 2.4%).

The prevalence of CLD was higher in males compared with females in all population groups. The difference in prevalence between the NT Aboriginal and non-Aboriginal population was more pronounced in the younger age group (18-49 years).

There is limited information on liver disease prevalence for direct comparison. However, a national estimate of the prevalence of CLD among Australian adults in 2012 identified there were around 6,179,287 cases of CLD equating to at least one in five Australians having CLD.¹⁷ The prevalence of CLD in the NT population was lower than this national estimate.

Table 9. Prevalence of CLD, Northern Territory Aboriginal and non-Aboriginal, 2019

	Observed cases	Estimated unknown	Estimated total cases	Estimated prevalence (%)
18 - 49 years				
Aboriginal	2096	2297	4266	11.9
Male	1043	1278	2281	12.7
Female	1053	1019	1985	11.1
Non-Aboriginal	825	1292	2088	2.4
Male	475	719	1178	2.7
Female	350	573	910	2.2
TOTAL	2921	3589	6354	5.2
50 years and over				
Aboriginal	737	777	1514	12.5
Male	380	432	812	15.1
Female	357	345	702	10.3
Non-Aboriginal	783	1222	2005	4.0
Male	544	680	1224	4.6
Female	239	542	781	3.3
TOTAL	1520	1999	3519	5.6
Total (18 years and over)				
Aboriginal	2833	3074	5780	12.1
Male	1423	1710	3093	13.3
Female	1410	1364	2687	10.9
Non-Aboriginal	1608	2514	4093	3.0
Male	1019	1399	2402	3.4
Female	589	1115	1691	2.6
TOTAL	4441	5588	10029	5.4

Notes: Prevalence is the number of cases (observed + estimated) per 100 population. Estimated number may not total (by 1) due to rounding.

Co-morbidities

Chronic diseases represent a significant burden on the community and health services, and the burden is compounded when individuals have multiple illnesses (comorbidities). Among the NT adult population, 16,910 Aboriginal people and 14,298 non-Aboriginal had at least one chronic disease. Among those with a chronic disease, 55.7% Aboriginal people and 35.1% non-Aboriginal people had multiple conditions. Managing chronic diseases in the NT requires dedicated primary healthcare resources and greater attention to population health promotion and prevention strategies.

References

1. Australian Institute of Health and Welfare. *Australian Burden of Disease Study 2018: key findings*. Canberra: AIHW; 2021.
2. Australian Institute of Health and Welfare. *Australia's health 2018. Australia's health series no. 16. AUS 221*. Canberra: Australian Institute of Health and Welfare; 2018.
3. d'Espaignet ET, Measey ML, Dal Grande E. *Northern Territory Health and Wellbeing Survey, Non-Indigenous Population, December 2000*. Darwin: Department of Health and Community Services; 2002.
4. Li SQ, Guthridge SL, Eswara Aratchige P, et al. Dementia prevalence and incidence among the Indigenous and non-Indigenous populations of the Northern Territory. *Medical Journal of Australia*. 2014;200(8):465-469.
5. Li L, Guthridge S, Li SQ, Zhao Y, Lawton P, Cass A. Estimating the total prevalence and incidence of end-stage kidney disease among Aboriginal and non-Aboriginal populations in the Northern Territory of Australia, using multiple data sources. *BMC nephrology*. 2018;19(1):1-9.
6. National Centre for Classification in Health. *The international classification of disease and related health problems, tenth revision, Australian modification (ICD-10-AM)*. Lidcombe 2015.
7. WONCA International Classification Committee. *International Classification of Primary Care. Revised Second Edition (ICPC-2-R)*. 2015.
8. Agostino JW, Wong D, Paige E, et al. Cardiovascular disease risk assessment for Aboriginal and Torres Strait Islander adults aged under 35 years: a consensus statement. *Medical Journal of Australia*. 2020;212(9):422-427.
9. Australian Institute of Health and Welfare. *Heart, stroke and vascular disease—Australian facts*. Canberra: Australian Institute of Health and Welfare; 2021.
10. Australian Institute of Health and Welfare. *Diabetes. Cat. no. CVD 82*. Canberra: Australian Institute of Health and Welfare; 2020.
11. Australian Institute of Health and Welfare. *Chronic obstructive pulmonary disease (COPD). Cat. no. ACM 35*. Canberra: Australian Institute of Health and Welfare; 2020.
12. Australian Institute of Health and Welfare. *Chronic kidney disease. Cat. no. CDK 16*. Canberra: Australian Institute of Health and Welfare; 2020.
13. Australian Institute of Health and Welfare. *Aboriginal and Torres Strait Islander Health*

Performance Framework 2020 summary report. Canberra: Australian Institute of Health and Welfare; 2020.

14. Australian Institute of Health and Welfare. *Acute rheumatic fever and rheumatic heart disease in Australia, 2015–2019*. Cat. no. CVD 90. Canberra: Australian Institute of Health and Welfare; 2021.
15. End Rheumatic Heart Disease Centre of Research Excellence. RHD in Australia. *Telethon Kids Institute*. Available at: <https://endrhd.telethonkids.org.au/rhd-in-australia>. Accessed 23 Mar 2022.
16. To T, Stanojevic S, Moores G, et al. Global asthma prevalence in adults: findings from the cross-sectional world health survey. *BMC Public Health* 2012;12: 204.
17. Deloitte Access Economics. *The economic cost and health burden of liver diseases in Australia*. Sydney: Deloitte Access Economics Pty Ltd; 2012.

Information compiled by: Shu Qin Li

Enquiries to:

Health Statistics and Informatics (formerly known as Population and Digital Health), Northern Territory Health PO Box 40596, Casuarina NT 0811 Email: healthstatistics@nt.gov.au

Fact Sheet, December 2022