

Daly - Tiwi - West Arnhem Region

DATA REPORT

Overview of selected demographic and health data for the
Daly - Tiwi - West Arnhem region of the Northern Territory



Prepared June 2020

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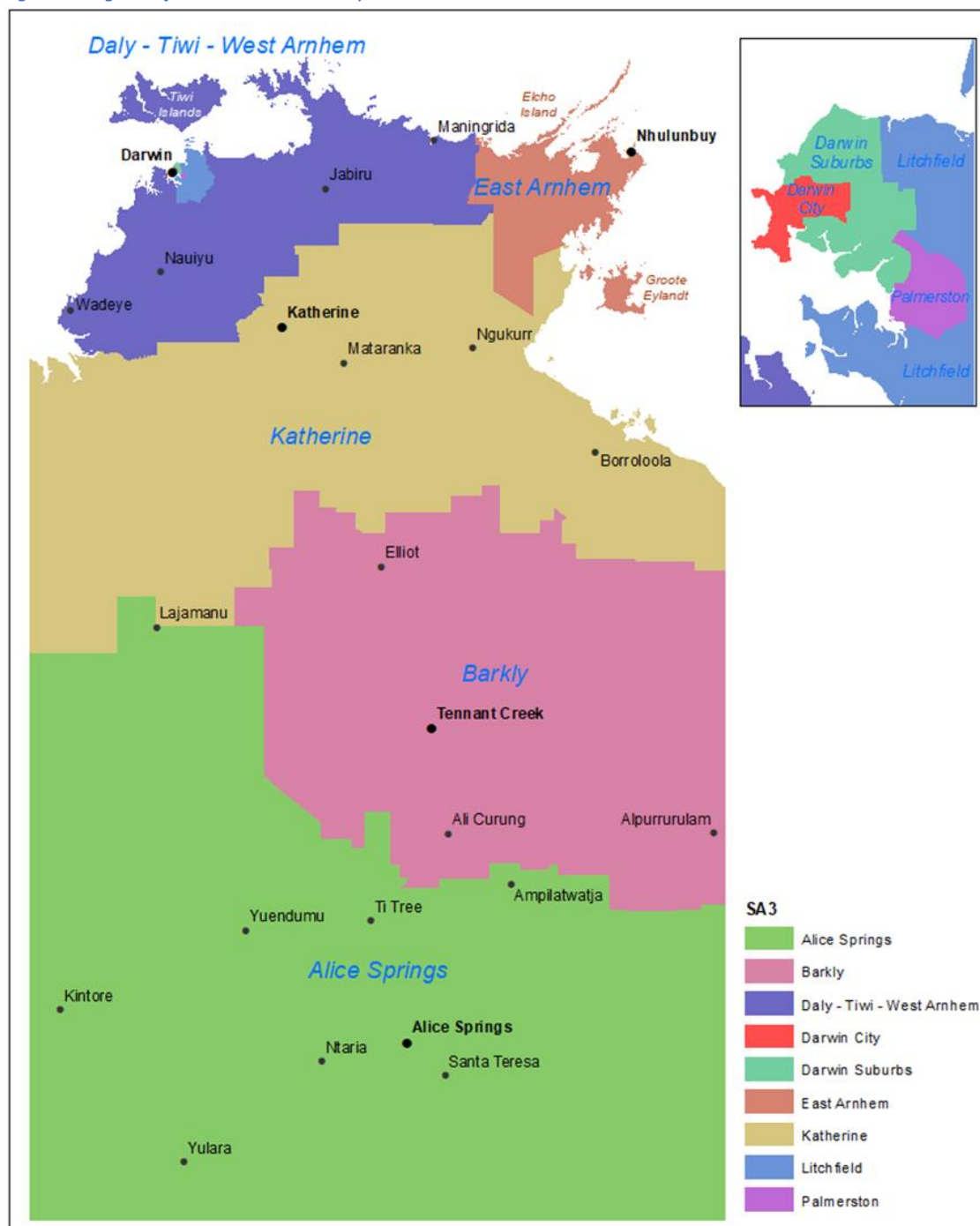
Glossary

ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Service
AECD	Australian Early Development Census
AIHW	Australian Institute of Health and Welfare
AMS	Aboriginal Medical Services
ASR	Age Standardised Rate
ATSI	Aboriginal and/or Torres Strait Islander
CCF	Congestive Cardiac Failure
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
ERP	Estimated Resident Population
HPV	Human Papillomavirus
HSD	Health Service District
ICD-10	International Classification of Diseases 10 th Revision
IMR	Infant Mortality Rate
IRSD	Index of Relative Socioeconomic Disadvantage
LGA	Local Government Area
MMM	Modified Monash Model
NES	Non-English Speaking
NT	Northern Territory
NP	Not Published
PATS	Patient Assistance Travel Scheme
PHIDU	Public Health Information Development Unit
PHN	Primary Health Network
PPH	Potentially Preventable Hospitalisation
SA#	Statistical Area, Level 1, 2, 3, etc.
SEIFA	Socioeconomic Indexes for Areas
SES	Socioeconomic Status
TFR	Total Fertility Rate
URP	Usual Resident Population

Introduction

The Northern Territory PHN (NT PHN) covers the entire Northern Territory (NT) (Figure 1) – an area of some 1.4 million km² which is home to a widely dispersed population of 246,000 people. Primary health care services are provided predominantly by mainstream general practice and allied health providers in Darwin and the regional centres, and by a range of remote health clinics in smaller communities – whether provided by an Aboriginal Community Controlled Health Service (ACCHS) or by NT Health.

Figure 1: Regions of the Northern Territory.



Source: Compiled by NT PHN.

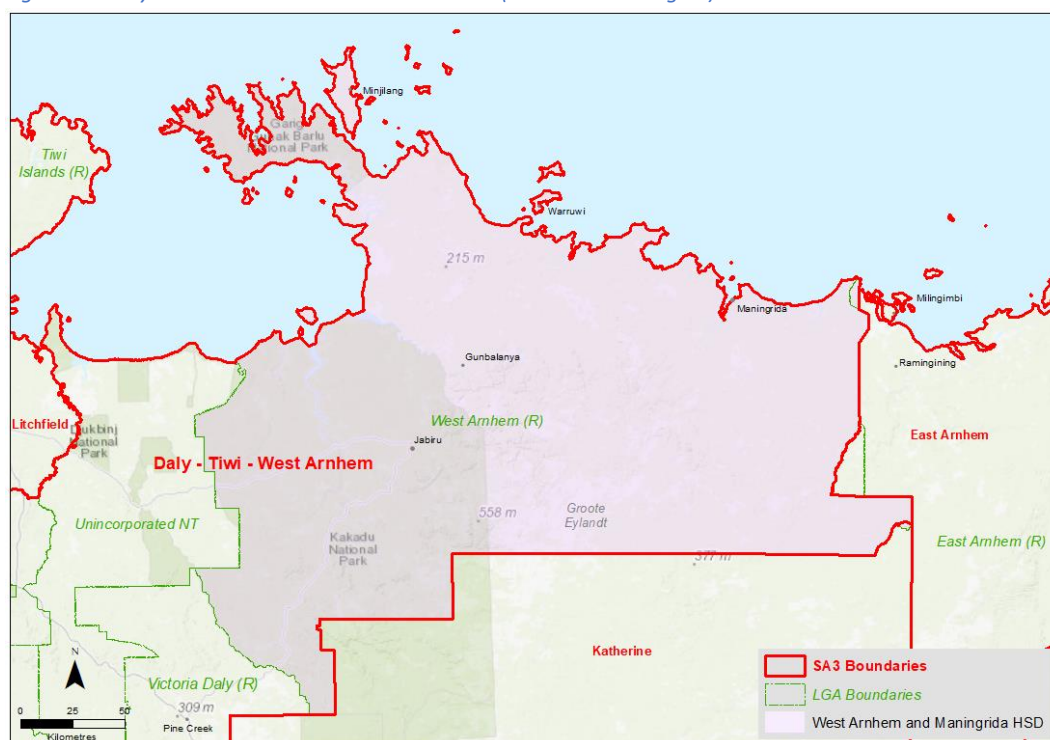
Daly - Tiwi - West Arnhem is a large remote area in the NT that wraps around the Top End region (Figure 1 and 2). Daly - Tiwi - West Arnhem has an estimated population of 17,872 people, approximately 7% of the total NT population. This large area includes regions and communities such as Dundee Beach, Wadeye, Tiwi Islands, Maningrida, Adelaide River, and Litchfield and Kakadu National Parks.

There are two ACCHS in the region – Mala’la Health Service Aboriginal Corporation (Maningrida), and Peppimenarti Health Association. The Top End Health Service (NT Department of Health) operates a number of Aboriginal Medical Services (AMS) clinics throughout the region, including on the Tiwi Islands. There is no hospital within this region, therefore residents are required to travel to Katherine or Darwin for hospital services.

Remoteness is measured using the geographical classification system, the Modified Monash Model (MMM) using census population data, with seven remoteness categories ranging from Metropolitan (MM1) to Very Remote Community (MM7). The majority of the Daly – Tiwi – West Arnhem population falls within MM7 (very remote community), with a small proportion falling within classification MM6 (remote community).

This report summarises data collated to date by NT PHN with a focus on Daly - Tiwi - West Arnhem.^a This region is represented by one Statistical Area Level 3 (SA3) and aligns closely with four Local Government Areas (LGAs) – Tiwi Islands, Victoria Daly, West Arnhem and West Daly (Figure 1 and 2). The data to follow is primarily presented by SA3 region, and LGA data where possible. Data for the Northern Territory, Australia and surrounding SA3 regions are reported alongside Daly - Tiwi - West Arnhem regional data for comparison.

Figure 2a: Daly–Tiwi–West Arnhem LGAs and SA3s (West Arnhem region).



^a In the NT, a custom geography known as Health Service Districts (HSD) is often used to define regions for health planning and delivery purposes. These regions do not align to national data collections, so the closest approximation of LGAs or SA3s are used in this report.

Figure 2b: Daly – Tiwi – West Arnhem LGAs and SA3s (Top End Central and West region).



Source: Compiled by NT PHN.

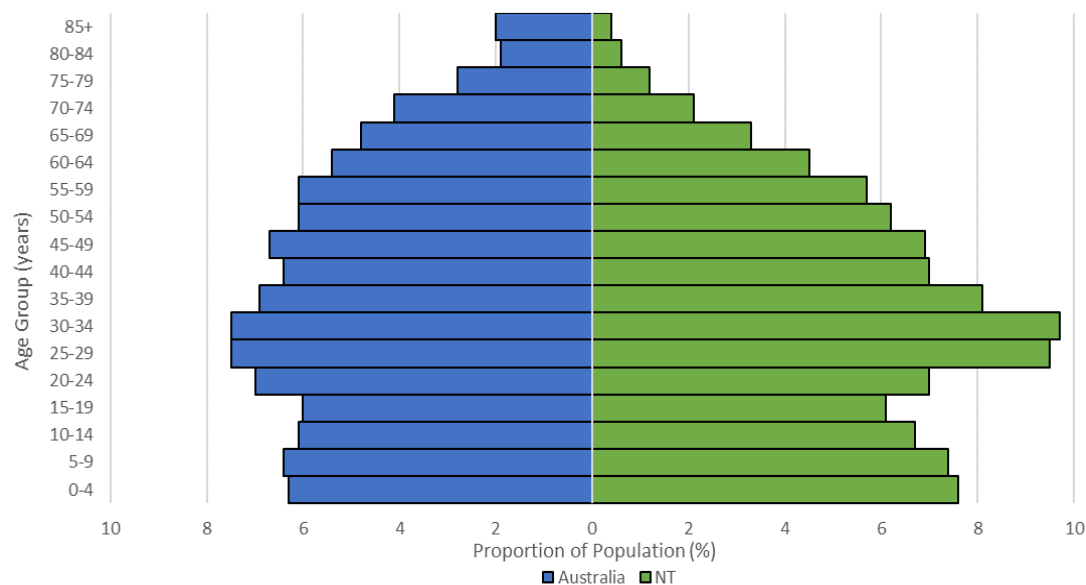
A large area of the Top End Central region is unincorporated, i.e. is not within a local government area. This unincorporated area covers the majority of the Cox Peninsula, south-west of Darwin, which includes the Dundee and Bynoe settlements. The remainder of the unincorporated area is sparsely settled.

Population Characteristics

Population Structure

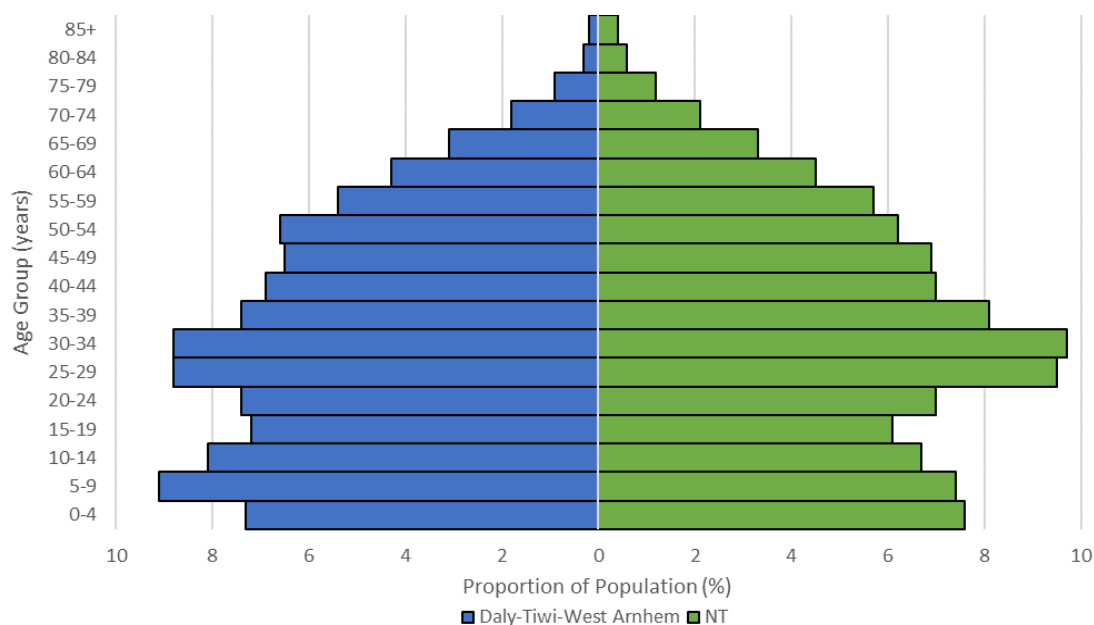
The population structure of the NT shows a marked difference to the Australian average, with higher proportions of children and young adults, and lower proportions of people aged 60+ (Figure 3). The Daly - Tiwi - West Arnhem population follows a similar overall trend to the NT, but with an even higher proportion of children (Figure 4).

Figure 3: Population Structure of Australia and Northern Territory, 2018.



Source: Data compiled by PHIDU from ABS estimated resident population, 30 June 2018. Graph compiled by NT PHN.

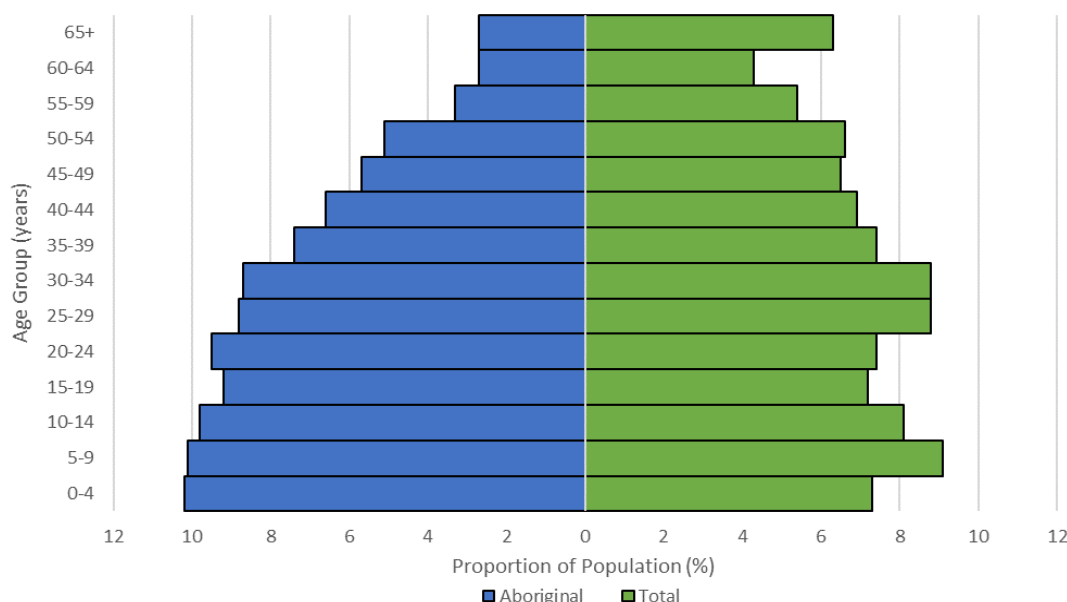
Figure 4: Population Structure of Daly – Tiwi – West Arnhem and Northern Territory, 2018.



Source: Data compiled by PHIDU from ABS estimated resident population, 30 June 2018. Graph compiled by NT PHN.

Daly - Tiwi - West Arnhem population is made up of 74% Aboriginal and Torres Strait Islander peoples (hereafter Aboriginal) – the highest regional proportion in the NT (Table 3). The Aboriginal population structure in Daly - Tiwi - West Arnhem varies from the total Daly - Tiwi - West Arnhem population (Figure 5). The Aboriginal population has a much higher proportion of children and young people, and a lower proportion of elderly people.

Figure 5: Population Structure of the Aboriginal and/or Torres Strait Islander population and total population of Daly – Tiwi – West Arnhem, 2016 and 2018.



Data compiled by PHIDU from ABS estimated resident population, 30 June 2018; ABS Census of Population and Housing, August 2016. Graph compiled by NT PHN.

Population Change

Since 2011, the NT population has increased by over 6%, while the population in Daly - Tiwi - West Arnhem has experienced a small decrease (Table 1). The West Daly region has experienced the strongest population growth in the region, while the other regions have experienced decreases.

Table 1: Population change in Daly – Tiwi – West Arnhem, 2011 to 2019.

	Total Persons					% Change 2011-2019
	2011	2016	2017	2018	2019	
Tiwi Islands (LGA)	2,970	2,777	2,762	2,750	2,741	-7.7%
Victoria Daly (LGA)*	3,321	3,142	3,139	3,135	3,155	-5.0%
West Arnhem (LGA)	7,133	6,941	6,932	6,896	6,881	-3.5%
West Daly (LGA)	3,505	3,601	3,617	3,646	3,693	5.4%
Daly - Tiwi - West Arnhem (SA3)	18,099	17,949	17,912	17,886	17,872	-1.3%
Katherine (SA3)	20,400	20,674	20,748	20,820	20,869	2.3%
Litchfield (SA3)	19,802	25,003	25,192	25,204	25,172	27.1%
Northern Territory	231,292	245,678	247,517	247,058	245,929	6.3%
Australia	22,340,024	24,190,907	24,601,860	24,982,688	25,365,571	13.5%

Source: ABS Regional Population Growth, Australia, 2018-19.

Population Dynamics

The total fertility rate (TFR) in Daly - Tiwi - West Arnhem is lower than the Territory and national averages (Table 2). In real terms, there were 226 births in the region over the 3-year period.

The loss of population to internal migration is consistent across many regions of the NT as well as a small population gain from overseas migration, and Daly - Tiwi - West Arnhem follows this migration pattern.

The median age of death of the population in Daly - Tiwi - West Arnhem is lower than the Territory average and much lower than the national average. Victoria Daly, West Daly and West Arnhem have a low median age at death. The median age at death for Aboriginal people is slightly below the NT average, but still lower than the total Daly - Tiwi - West Arnhem population.

Infant and youth mortality rates^b are high throughout the NT, particularly in the more remote regions including Daly - Tiwi - West Arnhem.

Table 2: Population Dynamics in Daly – Tiwi – West Arnhem.

	Fertility		Net Migration		Median Age at Death		Infant Mortality	Youth Mortality
	2018		2018-19		2013-17		2013-17	
	No. Births	TFR	Internal	Overseas	All People	Aboriginal People*	IMR/1,000	ASR/100,000
Tiwi Islands (LGA)	40	1.8	-23	1	53.5	-	np	np
Victoria Daly (LGA)	63	2.2	-25	0	62.5	-	15.0	np
West Arnhem (LGA)	89	1.5	-71	4	53	-	np	132.0
West Daly (LGA)	53	1.7	7	2	53	-	np	190.0
Daly - Tiwi - West Arnhem (SA3)	226	1.7	-160	15	56	53	9.3	157.6
<i>Katherine (SA3)</i>	<i>361</i>	<i>2.1</i>	<i>-220</i>	<i>19</i>	<i>60</i>	<i>55.5</i>	<i>10.5</i>	<i>139.8</i>
<i>Litchfield (SA3)</i>	<i>259</i>	<i>2.0</i>	<i>-200</i>	<i>23</i>	<i>64</i>	<i>55</i>	<i>3.3</i>	<i>112.2</i>
Northern Territory	4,046	1.97	-4,371	718	63.5	56	7.1	94.1
<i>National</i>	<i>313,330</i>	<i>1.85</i>	<i>0</i>	<i>239,602</i>	<i>81</i>	<i>59</i>	<i>3.3</i>	<i>35.8</i>

*Source: Compiled by PHIDU from multiple sources. *Compiled by NT PHN from PHIDU Aboriginal and Torres Strait Islander Health Atlas.*

**Figures are averages of several smaller Indigenous Areas within each SA3.*

^b Infant Mortality Rate (IMR) represents deaths that occurred before 12 months of age, expressed as per 1,000 live births. Youth mortality represents deaths of people aged 15 to 24 years, expressed as age-standardised rate per 100,000 population (aged 15 to 24 years).

Demography and Disadvantage

Table 3 summarises key demographic and socioeconomic indicators for Daly - Tiwi - West Arnhem and surrounding areas. One quarter of the region's population is aged 0 to 14 years, and this proportion is highest in West Daly. Overall, the region has high levels of disadvantage, particularly in the more remote regions of West Daly and Tiwi Islands. Of particular note are the high proportion of households requiring extra bedrooms ('overcrowded housing'), and households with no internet access or motor vehicle.

Table 3: Demographic overview of the Daly – Tiwi – West Arnhem region.

	Age 0-14	Age 65+	Aboriginal Persons	Born Overseas (NES [^])	Early School Leavers	Single Parent Families	Low Income Households	Overcrowded Housing	Unemployment	No Internet at Home	No Motor Vehicle	Disadvantage (SEIFA IRSD)
	2018 ERP %	2018 ERP %	2016 ERP %	2016 URP %	2016 URP <i>ASR/100</i>	2016 %	2016 %	2016 %	June 2016 %	2016 %	2016 %	2016 <i>Score</i>
Tiwi Islands (LGA)	24.2	4.8	91.5	2.0	57.2	30.8	80.4	51.8	10.8	24.3	62.5	630
Victoria Daly (LGA)	25.5	7.0	73.6	1.5	55.4	31.6	44.9	52.8	9.7	45.8	27.4	657
West Arnhem (LGA)	24.7	3.0	82.9	2.6	51.5	23.0	45.1	65.9	9.1	33.7	37.4	622
West Daly (LGA)	31.2	1.8	93.5	0.5	77.9	29.5	68.1	78.1	9.7	57.3	54.4	441
Daly - Tiwi - West Arnhem (SA3)	24.5	6.3	73.9	2.9	52.9	28.1	71.8	54.9	8.1	34.6	32.5	651
<i>Katherine (SA3)</i>	<i>24.7</i>	<i>7.0</i>	<i>57.4</i>	<i>4.5</i>	<i>45.5</i>	<i>26.0</i>	<i>59.2</i>	<i>41.5</i>	<i>5.0</i>	<i>27.7</i>	<i>19.4</i>	<i>802</i>
<i>Barkly (SA3)</i>	<i>25.5</i>	<i>6.3</i>	<i>71.1</i>	<i>6.0</i>	<i>56.5</i>	<i>32.9</i>	<i>63.4</i>	<i>42.3</i>	<i>8.1</i>	<i>34.4</i>	<i>25.6</i>	<i>734</i>
Northern Territory	21.6	7.6	30.3	13.4	34.4	22.1	43.2	21.9	4.2	16.9	10.7	939
<i>Australia</i>	<i>18.8</i>	<i>15.7</i>	<i>3.3</i>	<i>17.9</i>	<i>30.4</i>	<i>20.4</i>	<i>40.5</i>	<i>7.1</i>	<i>5.9</i>	<i>14.1</i>	<i>7.5</i>	<i>1000</i>

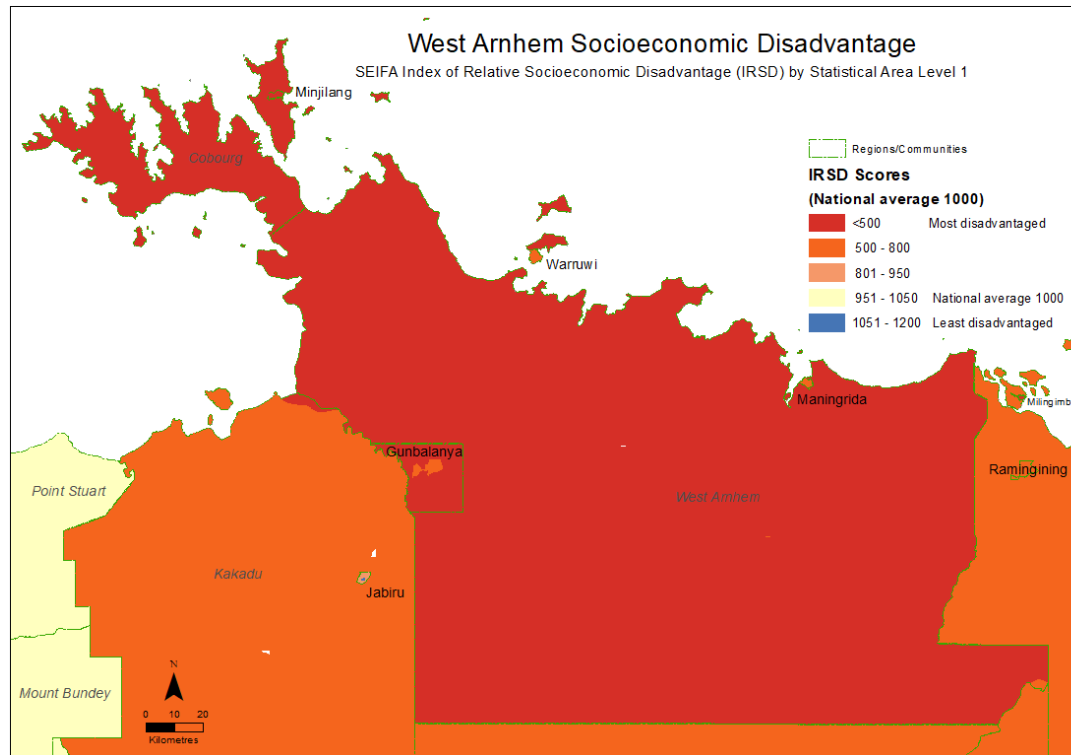
Source: Compiled by PHIDU from ABS estimated resident population, 30 June 2018, ABS Census of Population and Housing, August 2016.

[^]NES = non-English Speaking

After each census, the Australian Bureau of Statistics (ABS) derives a series of indexes, known as Socioeconomic Indexes for Areas (SEIFA), to quantify aspects of disadvantage. The Index of Relative Socioeconomic Disadvantage (IRSD) is commonly used to describe the relative level of overall disadvantage in small areas. The IRSD is scaled so that the national average score is 1000, where scores above are considered less disadvantaged and scores below are more disadvantaged. The Daly - Tiwi - West Arnhem region has very high levels of disadvantage using this measure, and West Daly is the most disadvantaged area.

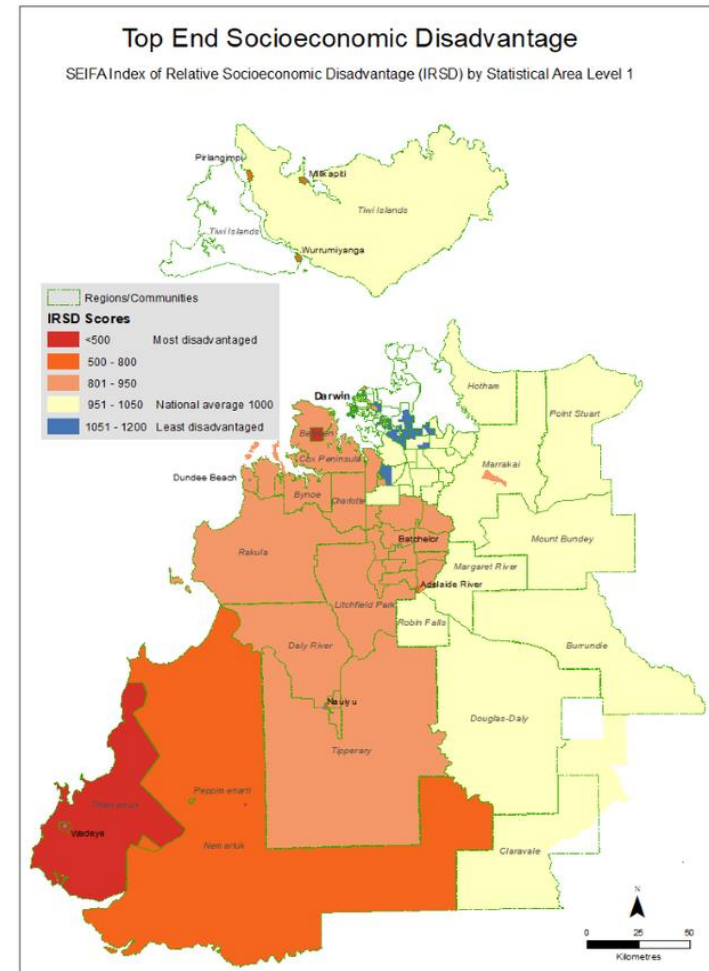
Figure 5 illustrates the distribution of disadvantage at a much finer scale, where it can be seen that the more remote regions of West Arnhem and West Daly are highly disadvantaged, while the area closer to the urban centres are less disadvantaged.

Figure 5a: Areas of socioeconomic disadvantage within Daly – Tiwi – West Arnhem (West Arnhem region).



Source: Compiled by NT PHN from ABS Census of Population and Housing: SEIFA, Australia, 2016.

Figure 5b: Areas of socioeconomic disadvantage within Daly – Tiwi – West Arnhem (Top End Central and West region).



Childhood

The Australian Early Development Census (AEDC) is conducted every 3 years, for each child in their first year of school. They are assessed by the teacher against five different domains of competency. Children who are developmentally vulnerable can be at risk of poor social, emotional, and health outcomes in later life. The proportion of children who are vulnerable on two or more of the AEDC domains is often used as an indicator of children most at risk.

The 2018 AEDC results for children within Daly - Tiwi - West Arnhem, combined with East Arnhem, have been reproduced here. Full reports for each local community, containing additional information including previous census results, can be accessed from the AEDC website: <https://www.aedc.gov.au/data/data-explorer>.

The combined Arnhem region has a high proportion of children who are developmentally vulnerable. In every tested domain, there is a higher proportion of developmentally vulnerable children in this region than the NT and Australia (Table 4). At the local level, children in West Daly and Tiwi Islands were more commonly assessed as vulnerable than those within the lesser remote or disadvantaged regions. The proportion of children who are vulnerable on one or more, and two or more domains, is highest in the Arnhem region compared to other children in the Territory.

Table 4: Australian Early Development Census (AEDC) Results, 2018.

	Children Developmentally Vulnerable (%)					Vulnerable on One or More Domains	Vulnerable on Two or More Domains
	Physical Health & Wellbeing	Social Competence	Emotional Maturity	Language & Cognitive Skills	Communication Skills & General Knowledge		
Tiwi Islands (LGA)	47.8	22.7	33.3	28.6	56.5	78.3	60.9
Victoria Daly (LGA)	34.0	24.5	16.3	40.4	30.6	55.1	42.6
West Arnhem (LGA)	#	#	#	#	#	#	#
West Daly (LGA)	46.6	67.2	48.3	63.8	63.8	77.6	72.4
Arnhem Region	28.8	32.0	26.0	45.2	38.6	63.4	46.1
<i>Katherine (SA3)</i>	29.7	30.8	22.3	35.7	29.3	54.5	41.8
<i>Litchfield (SA3)</i>	18.5	15.6	16.7	9.8	9.4	32.6	19.6
Northern Territory	17.6	17.8	14.9	19.6	16.7	35.8	23.4
<i>Australia</i>	9.6	9.8	8.4	6.6	8.2	21.7	11.0

Source: Australian Early Development Census (AEDC), 2019.

Note: Daly - Tiwi - West Arnhem and East Arnhem data are combined.

*Insufficient data available

Health Indicators

Potentially Preventable Hospitalisations

Potentially preventable hospitalisations (PPH) are admissions for which the hospitalisation could possibly have been prevented through the timely and appropriate provision of primary or community-based health care, and as such are considered indicators of the effectiveness of non-hospital care. Rates of PPH may reflect access to primary health care service and/or other contextual factors.

PPH for many chronic and acute conditions are much higher in the NT than the rest of Australia (Table 5). PPH rates for chronic conditions such as congestive heart failure, COPD and diabetes, and vaccine preventable-pneumonia and influenza are high in Daly - Tiwi - West Arnhem. The Victoria Daly region has a high rate of cellulitis and other acute hospitalisations.

Table 5: Potentially Preventable Hospitalisations (PPH) for Chronic, Acute and Vaccine Preventable Conditions (ASR/100,000), 2017-18.

	Congestive Cardiac Failure	COPD [^]	Diabetes Complications	Total Chronic Conditions	Cellulitis	Total Acute Conditions	Pneumonia/ Influenza
Tiwi Islands (LGA)*	890	1,996	np	3,755	599	2,127	1,839
Victoria Daly (LGA)*	1,283	1,924	485	5,024	1,377	3,268	2,205
West Arnhem (LGA)*	890	1,996	233	3,755	599	2,129	1,839
West Daly (LGA)*	890	1,996	233	3,755	599	2,129	1,839
Daly - Tiwi - West Arnhem (SA3)	192	1,424	294	2,999	499	2,337	1,489
Katherine (SA3)	499	1,014	420	2,856	976	3,447	1,436
Litchfield (SA3)	np	224	119	858	299	1,297	241
Northern Territory	336	706	284	2,260	685	2,711	1,032
<i>Australia</i>	<i>206</i>	<i>267</i>	<i>187</i>	<i>1,233</i>	<i>258</i>	<i>1,286</i>	<i>313</i>

Source: AIHW Potentially Preventable Hospitalisations in Australia, 2017-18. *LGA data is from 2016-17, compiled by PHIDU.
[^]Chronic Obstructive Pulmonary Disease

Mortality

Coronary heart disease is the leading cause of death for both Australia and the NT. In Daly - Tiwi - West Arnhem, the leading causes of death are:

1. Coronary heart disease
2. COPD
3. Diabetes
4. Lung cancer
5. Land and transport accidents

These are similar to the overall NT leading causes of death. A high proportion of people in remote regions of the NT often have a cause of death of 'certain conditions originating in the perinatal period, congenital malformations, deformations and chromosomal abnormalities' (as defined by ICD-10 code), accounting for the tenth most common cause of death in the Daly - Tiwi - West Arnhem region.

Cancer

Compared to the rest of Australia, the NT has a low incidence of cancer, but a higher rate of premature mortality from cancer. This reflects a pattern of late diagnosis, where treatment is unlikely to be lifesaving due to advanced cancer stage at diagnosis. In this context, cancer screening initiatives for early detection can play an important role in reducing mortality.

Premature mortality for cancer is high in Daly - Tiwi - West Arnhem, particularly the Victoria Daly region, while hospital admissions are low (Table 6). Participation rates in national screening programs are low in Daly - Tiwi - West Arnhem, demonstrating the lowest participation in breast and cervical screening in the Territory.

The BreastScreen NT bus visits the urban centres and some communities annually or bi-annually. The Patient Assistance Travel Scheme is available to people in the NT who require long-distance travel to see an approved medical specialist, which may be claimed by residents of Daly - Tiwi - West Arnhem.

Table 6: Cancer Statistics.

	Cancer Incidence# 2009-13	Hospital Admissions^ 2016/17 ASR/100,000	Premature Mortality^ 2013-17	Screening*			
				Bowel aged 50-74	Breast aged 50-74	Cervical aged 20-69	
				2017-18 %	2017-18 %	2015-16 %	2018 ^c %
Tiwi Islands (LGA)	-	1,579	131	-	-	-	-
Victoria Daly (LGA)	-	2,118	207	-	-	-	-
West Arnhem (LGA)	-	1,579	265	-	-	-	-
West Daly (LGA)	-	1,579	202	-	-	-	-
Daly - Tiwi - West Arnhem (SA3)	444	1,579	206	22.4	29.5	44.4	-
Katherine (SA3)	404	2,568	137	21.7	36.8	52.4	-
Litchfield (SA3)	534	2,399	103	34.1	34.9	51.2	-
Northern Territory	460	2,422	133	29.1	38.2	50.9	50.9
Australia	497	2,826	99	42.4	54.8	55.4	54.1

Source: #AIHW Australian Cancer Database. ^Compiled by PHIDU from National Cancer Control Indicators. *AIHW National Cancer Screening Programs Participation Data.

Risk factors for Chronic Conditions

The main source of data for information about risk factors such as overweight/obesity, high blood pressure etc., is the National Health Survey, which is conducted every few years by the ABS. However, this survey excludes discrete Aboriginal communities and very remote areas, which is around 20% of the NT population, therefore is not a representative data set for the NT context.

The figures published indicate that the largely non-Aboriginal, urbanised portion of the population have high rates of insufficient physical activity, harmful alcohol consumption and overweight and obesity, which are similar to the national averages (Table 7).^d Smoking rates are much higher in the NT, while the proportion of people with uncontrolled high blood pressure are lower. These rates are

^c On 1 December 2017, the renewed National Cervical Screening Program (NCSP) was introduced. Instead of women aged 20–69 having a Pap test every 2 years, women aged 25–74 now have a Cervical Screening Test (CST) every 5 years (the CST is an HPV test, followed by a cytology test if HPV is found). SA3 data not yet available for renewed NCSP.

^d AIHW analysis of ABS National Health Survey, 2017-18.

also similar to the statistics seen in the aggregated general practice data (not published), which is drawn from a similar population profile.

It is likely that these figures are underestimates, and that if a fully representative NT population were surveyed, then the overall NT data would compare unfavourably with the national averages. As Daly – Tiwi – West Arnhem is largely remote area, it can be expected that the prevalence of chronic disease risk factors will be particularly high.

Similarly, the National Aboriginal and Torres Strait Islander Health Survey, conducted in 2018-19, demonstrates higher rates of insufficient physical activity, inadequate fruit and vegetable consumption and daily smoking in the NT Aboriginal population. Patterns of alcohol misuse in the NT differ from other jurisdictions and are not necessarily reflected in the survey statistics. These surveys also do not sample homeless and transient populations.

Table 7: Chronic disease risk factors, proportion of population (%).

		Overweight /Obese	Current daily smoker	Inadequate fruit or vegetable consumption	Insufficient Physical Activity	High Blood Pressure	Risky alcohol consumption (lifetime ^e)	Risky alcohol consumption (single occasion ^f)
National Health Survey, 2017-18	NT Australia	65.5 66.4	18.9 14.0	93.2 94.8	85.0 84.6	17.2 21.8	21.2 16.0	47.8 43.2
National Aboriginal and Torres Strait Islander Health Survey, 2018-19	NT Australia	59.0 71.2	58.0 43.4	98.2 97.4	92.8 89.0	20.0 23.1	12.7 20.0	42.3 53.5

Source: ABS National Health Survey, 2017-18, ABS National Aboriginal and Torres Strait Islander Health Survey, 2018-19.

Mental Health and Suicide, Drug and Alcohol Use

Overnight mental health hospital admissions for drug and alcohol episodes and intentional self-harm are higher in the NT compared to Australia (Table 8). Daly - Tiwi - West Arnhem has a higher rate of all mental health-related hospital admissions than the Territory average.

These figures represent a higher rate of premature death due to suicide and self-inflicted injury in Daly - Tiwi - West Arnhem than the national and Territory averages.

Table 8: Mental Health Hospitalisations and Suicide in Daly – Tiwi – West Arnhem.

	Hospital admissions			Deaths (0-74 years)
	All Mental Health#	Drug and Alcohol Episodes [^]	Intentional Self Harm [^]	Suicide and Self-Inflicted Injuries*
	ASR/10,000	ASR/100,000		ASR/100,000
	2017-18	2014-15		2013-17
Daly - Tiwi - West Arnhem (SA3)	113	166	213	25
Katherine (SA3)	103	165	164	24
Litchfield (SA3)	51	np	193	27
Northern Territory	100	227	228	20
Australia	105	180	161	12

Source: #AIHW Mental health services in Australia. [^]AIHW Hospitalisations for mental health conditions and intentional self-harm. *Compiled by PHIDU from ABS Causes of Death, Australia, 2017.

^e National Health and Medical Research Council (NHMRC) 2009 guideline 1 for the consumption of alcohol which recommends no more than 2 standard drinks per day.

^f NHMRC 2009 guideline 2 for the consumption of alcohol which recommends no more than 4 standard drinks on a single occasion.

Immunisation

Immunisation targets vary depending on the vaccine and disease – 90% coverage is considered sufficient for most diseases to establish herd immunity (protection for entire population), but highly infectious diseases like measles require 95% coverage to interrupt disease transmission in the community.

Table 9 demonstrates the immunisation coverage rates for children and adolescent HPV immunisation.

Immunisation coverage rates in the NT are close to or slightly below the national average for all children and Aboriginal children aged 1, 2 and 5. In Daly - Tiwi - West Arnhem, immunisation coverage is high in children at 1 and 5 years of age, but lower for children aged 2 years. Tiwi Islands and West Daly have very high immunisation coverage, though this is lower for Victoria Daly. Overall, immunisation coverage is high among Aboriginal children in the NT at age 1, 2 and 5 and approaches the national average.

HPV vaccination is recommended for all young persons aged 15 years in three doses. HPV immunisation coverage is higher in the NT than the national average for females and males, but this rate is lower in Daly - Tiwi - West Arnhem, particularly for males. There is no clear pattern between immunisation rates, age and region.

Table 9: Immunisation Coverage, proportion of children fully immunised (%).

	Children Fully Immunised 2018						HPV 3-dose Coverage 2017	
	1 Year Old	Aboriginal 1 Year Old	2 Years Old	Aboriginal 2 Years Old	5 Years Old	Aboriginal 5 Years Old	Females Aged 15	Males Aged 15
Tiwi Islands (LGA)	100.0	-	100.0	-	100.0	-	80.2	70.2
Victoria Daly (LGA)	np	-	89.5	-	np	-	81.5	91.0
West Arnhem (LGA)	93.5	-	90.5	-	96.3	-	84.1	77.0
West Daly (LGA)	100.0	-	98.1	-	100.0	-	83.5	70.4
Daly - Tiwi - West Arnhem (SA3)	95.2	-	89.4	-	93.4	-	86.4	77.9
<i>Katherine (SA3)</i>	<i>93.2</i>	<i>-</i>	<i>89.5</i>	<i>-</i>	<i>96.8</i>	<i>-</i>	<i>88.7</i>	<i>92.5</i>
<i>Litchfield (SA3)</i>	<i>95.2</i>	<i>-</i>	<i>91.7</i>	<i>-</i>	<i>94.1</i>	<i>-</i>	<i>110.0</i>	<i>88.8</i>
Northern Territory	94.0	92.8	91.0	90.2	93.6	95.8	95.6	88.0
<i>Australia</i>	<i>94.3</i>	<i>92.6</i>	<i>91.6</i>	<i>89.9</i>	<i>94.8</i>	<i>96.9</i>	<i>80.5</i>	<i>76.1</i>

Source: Compiled by PHIDU from Australian Immunisation Register (AIR).

Note: Values of >100% are likely an artefact of high mobility inter- and intra-state within the NT.

Health Workforce

The Health Workforce data published by the Australian Government Department of Health is derived from the national annual registration database for health professionals, by a survey completed at time of registration. This data is limited in the NT context as 'primary location of work in the past' week may not accurately capture the transient population and fly-in fly-out workforce. Therefore, the data presented represents a discrete 'point in time' situation.

Overall, the health workforce in Daly - Tiwi - West Arnhem is lower than the Territory average; except for ATSI health practitioners, where the rate is higher (Table 10).

There are currently less than four registered practitioners for all allied health professions apart from psychologists and oral health practitioners.

Table 10: Availability of Health Workforce, per 100,000 population, 2018.

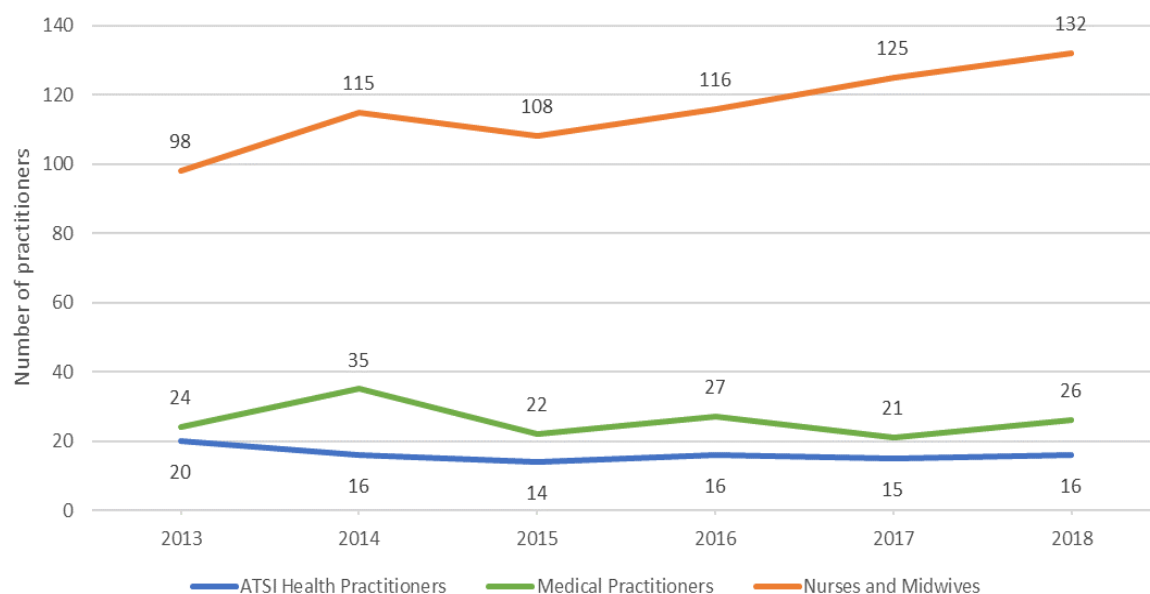
	Daly – Tiwi – West Arnhem (SA3)	Northern Territory	Australia
ATSI Health Practitioners	8.9	5.8	0.8
Medical Practitioners	14.5	48.0	205.3
Nurses and Midwives	73.8	149.6	674.5
Oral Health Practitioners	2.2	5.9	44.6
Occupational Therapists	np	6.5	33.3
Optometrists	np	1.3	10.6
Pharmacists	np	7.1	49.5
Physiotherapists	np	6.6	52.7
Podiatrists	np	1.1	9.7
Psychologists	2.2	6.3	53.0

Source: Health Workforce Dataset, Department of Health 2018.

np = not published due to low numbers

Daly - Tiwi - West Arnhem has a high rate of ATSI health practitioners, yet the rate of medical practitioners and nurses and midwives is lower than the Territory average. In real terms, between 2013 and 2018, nurses and midwives experienced strong growth in numbers, despite a decrease in 2015 (Figure 6). The number of medical practitioners has fluctuated over the past five years, while ATSI health practitioner numbers decreased.

Figure 6: Availability of Health Workforce in Daly – Tiwi – West Arnhem by profession (number), 2013 – 2018.



Source: Compiled by NT PHN from Health Workforce Dataset, Department of Health 2018.

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