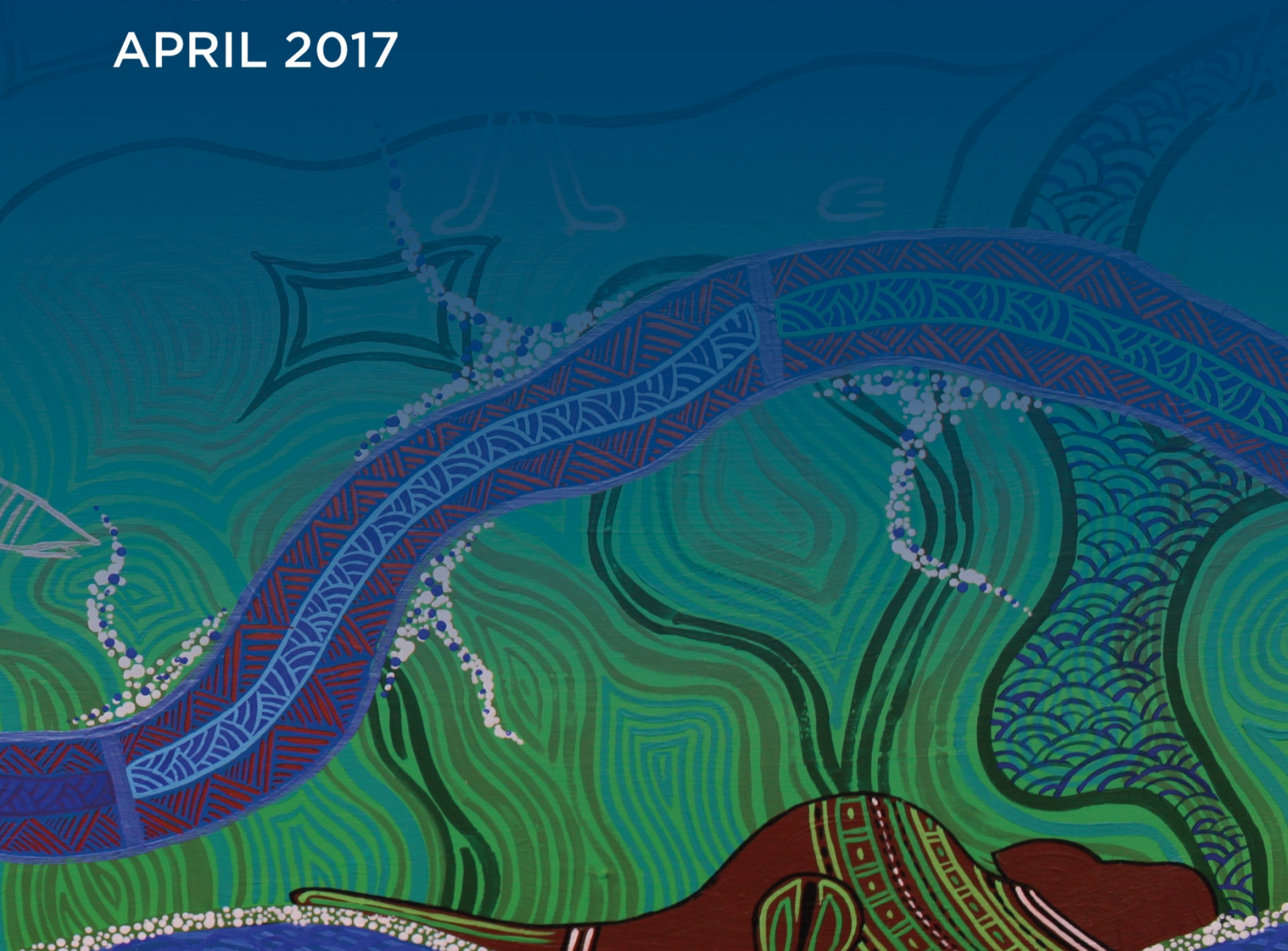


# ABORIGINAL HEALTH AND WELLBEING NEEDS ASSESSMENT REPORT

APRIL 2017



# Aboriginal Health and Wellbeing Needs Assessment Report

Hunter New England and Central Coast Primary Health Network

*“It's not hard working with Aboriginal people. It is hard however seeing the everyday reality for Aboriginal people and the starkly different rates of chronic disease, mental health and social issues compared to non-Aboriginal people. Seeing the impact of intergenerational trauma and loss of cultural identity is overwhelming at times. As a health worker, sometimes I feel helpless” (GP, HNECC PHN region).*

**Version 1: For Consultation**

## Acknowledgements

Hunter New England and Central Coast (HNECC) PHN acknowledges the traditional custodians of the land we walk upon today, and respect their continuing culture and the contribution they make to the life of this vast region. Aboriginal Nations within the HNECC PHN region include: Anaiwan; Awabakal; Biripi; Darkinjung; Geawegal; Kamilaroi; Kuring-gai; Nganyaywana; Ngarabai; Wonnaru; and Worimi.

## Suggested Citation

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## Executive Summary

Hunter New England and Central Coast PHN (HNECC) delivers innovative, locally relevant solutions that measurably improve the health outcomes of our communities, working towards our vision of “Healthy People and Healthy Communities”. Aboriginal Health is a key priority for HNECC where we are working to Close the Gap by improving health outcomes for our Aboriginal and Torres Strait Islander community members. We support the following definition of Aboriginal Health:

*“Aboriginal health means not just the physical wellbeing of an individual but refers to the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being thereby bringing about the total well-being of their community”.*

This Aboriginal Health Needs Assessment was conducted by HNECC to identify local health priorities for action, and inform and guide the activities of HNECC in achieving better health outcomes for Aboriginal communities across the region. A range of high quality, publically available quantitative data was collated, along with general practice and workforce data held by HNECC. Insights from a variety of key stakeholders, collected through consultations conducted throughout the region, were integrated with the quantitative data to supplement, support and build a deeper understanding of health needs and issues. A literature review examining the experience of health service access for Aboriginal people was also undertaken.

A summary of the Aboriginal health needs in the HNECC PHN region, identified throughout these processes are presented below:

**The Aboriginal population has a considerably younger age profile** than the non-Indigenous population **due to higher rates of fertility, and deaths occurring at younger ages, with the life expectancy for the Aboriginal population around 10 years less** than the non-Indigenous population (AIHW, 2014b). Increased prevalence of health risk factors and chronic illness contribute substantially to the shorter life expectancy (AIHW, 2010, 2014b).

### Health need: Shorter life expectancy than the non-Indigenous population

The social determinants of health play a vital role in determining the physical and mental health of individuals and communities. There is strong evidence that low socioeconomic status directly correlates with poor health, higher incidence of risky health behaviours and reduced access to health care services (Blakely, Hales & Woodward, 2004; Turrell & Mathers, 2000). **Socioeconomic disadvantage**, including homelessness and insecure housing, **is contributing to the poor health outcomes experienced by Aboriginal people across the HNECC PHN region**. The overall social context of health is seen as critical, **requiring a holistic approach incorporating physical, mental, cultural and social aspects of wellbeing**. Aboriginal people residing in cities and large regional towns in the HNECC PHN region are more likely to experience socioeconomic advantage than their rural and remote counterparts. **Indigenous Areas with the most relative disadvantage in the region are Tenterfield-Jubullum Village, Moree Plains, and Guyra-Tingha**, which are considerably more disadvantaged than the NSW and Australian averages. The most relatively advantaged Indigenous Areas are Newcastle, Gosford and the Upper Hunter.

Health need: Socioeconomic disadvantage is contributing to poorer health outcomes, particular areas of disadvantage are Tenterfield-Jubullum Village, Moree Plains, and Guyra-Tingha

**Health risk factors including smoking, poor nutrition, physical inactivity and alcohol consumption contribute to the poorer health status of the Aboriginal population, each of which has been identified as a health need in the HNECC PHN region.** Being overweight or obese is a risk factor for many health conditions, with obesity thought to make a sizeable contribution to the health gap between Aboriginal people and non-Indigenous people in Australia (AIHW, 2015a; Australia Indigenous HealthInfoNet, 2016). 60.9% of Aboriginal people aged 2 years+ are overweight or obese in the HNECC PHN region, compared to 54.9% nationally, with **stakeholders confirming that overweight and obesity is an area of need for local Aboriginal communities** (ABS, 2015). Stakeholders have also verified that **alcohol and other drug misuse is a particular area of need for Aboriginal people across the HNECC PHN region.** A reduction in the prevalence of key modifiable health risk behaviours will promote health and prevent occurrence of disease.

Health need: High prevalence of overweight and obesity, and health risk behaviours, including smoking, poor nutrition, physical inactivity, alcohol and other drug misuse

Cancer screening programs aim to reduce illness and mortality from cancer through a systematic approach to screening. In order to achieve the greatest benefit to the population from these programs, high participation rates are needed. **Breast screening participation rates for Aboriginal women aged 50-69 years in the HNECC PHN region are lower than the average for all women, with particularly low rates noted in the Gosford, Wyong and Gwydir LGAs** (Cancer Institute NSW, 2016). General practice data indicates that **Aboriginal women across the HNECC PHN region are less likely than non-Indigenous women to participate in cervical screening.**

Health need: Low participation rates in breast screening, particularly in Gosford, Wyong and Gwydir LGAs, and low cervical screening participation rates

Aboriginal people are eligible for an annual 715 health assessment which is designed to support earlier detection of disease, and diagnosis and treatment of common, treatable conditions. Whilst the number of 715 health assessments being claimed is increasing across the HNECC PHN region (AIHW, 2016b), general practice data indicates that only 26% of Aboriginal patients have had one. **Stakeholders across the HNECC PHN region have flagged numerous instances where non-regular primary health care providers have visited a community, performed a number of 715 health assessments and claimed the payments, but have not provided the coordination and continuity of care that patients need.**

Health need: A low proportion of people are undergoing a 715 health assessment and there are issues with the way in which these are being undertaken

**The rates of smoking during pregnancy amongst Aboriginal women across the HNECC PHN region are high, particularly in the New England sub-region, where there is also a high proportion of low birth weight babies born to Aboriginal women.** The rates of antenatal visits in the first trimester for Aboriginal women across the HNECC PHN region are above the national average, but below the average for all women (NHPA, 2014). Maternal, neonatal and congenital hospitalisations in the region are increasing amongst Aboriginal people and decreasing for non-Indigenous people, leading to a substantial gap between the two populations (Centre for Epidemiology and Evidence, 2016). **Stakeholders throughout the HNECC PHN region have identified maternal health as an area of need for Aboriginal people, and have called for improved coordination of prenatal care between services.**



Health need: Maternal health issues, including smoking during pregnancy and low birthweight babies, particularly in the New England, and a need for improved coordination between prenatal services

Immunisation rates for 1 and 2 year old Aboriginal children are lower than the average for all children in the HNECC PHN region, but are higher than the state and national averages. The immunisation rate of 5 year old Aboriginal children in the HNECC PHN region however is higher than all jurisdictional averages including those for all children (ACIR, 2015).

Health need: Lower immunisation rates for 1 and 2 year old children

**Chronic disease is a substantial area of need for Aboriginal people in the HNECC PHN region**, with 73% of Aboriginal people reporting at least one long-term health condition (ABS, 2015). **Stakeholders have particularly highlighted diabetes, cancer and kidney disease as health needs for local Aboriginal communities.**

Health need: High rates of chronic disease, and of particular concern are diabetes, cancer and kidney disease

**Dental health has been identified by health professionals across the HNECC PHN region as a particular area of need for Aboriginal people.**

Health need: High prevalence of dental conditions

In alignment with state and national level data, **mental ill-health has been identified as a health need for Aboriginal people in the HNECC PHN region**. Stakeholders have **particularly highlighted complex and enduring mental illness, grief and loss, and youth mental health** as areas of need for local Aboriginal communities. There is **a need for greater integration between mental health and drug and alcohol services, for more flexibility in treatment approaches, and for an increased emphasis on culturally appropriate mental health treatment**. There is also concern amongst health professionals that the physical health needs of Aboriginal people experiencing mental illness, particularly severe and complex mental illness, are being overlooked.

Health need: High rates of mental ill-health and a need for increased integration, flexibility and cultural appropriateness of mental health and drug and alcohol services

**Hospitalisation rates for Aboriginal people in the HNECC PHN region are increasing** whilst that of the non-Indigenous population remains steady. **The main cause of hospitalisations for Aboriginal people is dialysis** which is almost four times the rate of the non-Indigenous population. This is followed by maternal, neonatal and congenital causes; digestive system disease; and injury and poisoning. Rates of potentially preventable hospitalisations in the region are also substantially higher for Aboriginal people, and the gap between the two populations is widening (Centre for Epidemiology and Evidence, 2016).

Health need: Increasingly high hospitalisation rates, including potentially preventable hospitalisations

**A key contributing factor to the disproportionate burden of disease experienced by Aboriginal people is reduced access to health services, which has been verified by stakeholders as an issue for Aboriginal communities in the HNECC PHN region**. By targeting inequalities in access to health services it is possible to reduce preventable mortality rates, reduce behavioural and environmental risk factors, and address early intervention and management of disease (WHO, 2011). **Barriers to**



**health service access** identified in the literature include: **transport; cost; a lack of cultural safety; racism; shame; discomfort with mainstream services which do not acknowledge or consider Aboriginal concepts of health; negative intergenerational experiences with the health system; a lack of available services; and a lack of culturally appropriate services** (Baba, Brolan & Hill, 2014; Boudville, Anjou & Taylor, 2013). **These factors aligned with barriers identified by stakeholders, but in particular, transport, cost and cultural safety.** Community members also identified low motivation and competing work and family commitments as barriers. Health professionals raised concerns about the potential for breaches of confidentiality when accessing an AMS; and low levels of health literacy leading to poor patient compliance, a lack of knowledge of available services, and people presenting in more advanced stages of disease. **GPs have asked for more education on the services available for their Aboriginal patients, and stakeholders across the HNECC PHN region have identified a need for increased disease prevention and health promotion and education activities for Aboriginal people,** including youth specific content and a focus on increasing awareness of available services.

Health need: Multiple barriers to accessing health services

**Stakeholders from across the HNECC PHN region have called for greater integration and coordination of services to reduce the fragmented nature of care for Aboriginal people. A need for enhanced care coordination for Aboriginal people, along with greater and more proactive follow-up care,** in particular for those people experiencing comorbid health conditions, has been identified by as a need in the HNECC PHN region. **Health professionals and Aboriginal community members have called for more holistic care for Aboriginal people which takes into consideration mental health, physical health, disability, and social issues.** Recommendations made by stakeholders include outreach and mobile clinics, a one stop shop for Aboriginal health services, a move towards flexible fluid models of care, regional shared clinical records for care coordination and conducting 715 health checks in schools.

Health need: Fragmented care and lack of integration and coordination of health services for Aboriginal people

A review of the literature suggests that **increasing the Aboriginal workforce in the health system will facilitate increased access to health services for Aboriginal community members,** however it is imperative that this workforce is well supported. **Members of the Aboriginal workforce working in non-Aboriginal workplaces across the HNECC PHN region consistently report a lack of cultural safety in their workplaces** due to ignorance on behalf of non-Aboriginal staff and managers; little awareness of culture and customs; and a limited understanding of the work practices of Aboriginal staff. There are widespread reports of Aboriginal staff experiencing racism, not being listened too, and feeling tokenistic, under-valued and isolated. **The Aboriginal workforce has identified a substantial need for improvement in the cultural competence of the non-Indigenous workforce.**

Health need: Lack of culturally safe workplaces for the Aboriginal workforce

## Explanatory Notes

Hunter New England and Central Coast PHN (HNECC) delivers innovative, locally relevant solutions that measurably improve the health outcomes of our communities, working towards our vision of “Healthy People and Healthy Communities”. Aboriginal Health is a key priority for HNECC where we are working to Close the Gap by improving health outcomes for our Aboriginal and Torres Strait Islander community members. We support the following definition of Aboriginal Health:

*“Aboriginal health means not just the physical wellbeing of an individual but refers to the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being thereby bringing about the total well-being of their community”.*

This Aboriginal Health Needs Assessment was conducted by HNECC to identify local health priorities for action, and inform and guide the activities of HNECC in achieving better health outcomes for Aboriginal communities across the region.

Throughout this report, the term ‘Aboriginal people’ refers to all persons who identified themselves as being of Aboriginal, Torres Strait Islander, or both Aboriginal and Torres Strait Islander heritage.

### Geographical presentation of data

Australian Aboriginal people are a diverse population and as such national statistics can conceal geographic differences in their health and the factors impacting on their health (Markwick, Ansari, Sullivan, Parsons & McNeil, 2014). Selected data in this report is presented at a national or state level due to limited availability of more granular Aboriginal Health data. Where possible, data was sourced at a more local level from a variety of publically available sources. As a result, information is displayed for a range of geographical regions as follows:

- Hunter New England and Central Coast Primary Health Network (HNECC PHN) – is one of 31 PHNs nationwide. Where possible, boundaries of PHNs align with Local Hospital Networks (LHNs) or equivalents, or clusters of LHNs. In determining boundaries, a number of factors were taken into account, including population size and future projected population growth, LHN alignment, State and Territory borders, patient flows and administrative efficiencies.
- Local Health District (LHD) - eight Local Health Districts cover the Sydney metropolitan region and seven cover rural and regional New South Wales. HNECC PHN region consists of Central Coast LHD and Hunter New England LHD.
- HNECC PHN sub-regions – a selection of data is available by sub-region only, of which there are three within the HNECC PHN region: Central Coast; Hunter; and New England, which align with the historical Medicare Local areas.
- Local Government Areas (LGA) - an LGA is a geographical area under the responsibility of an incorporated local government council, or an incorporated Indigenous government council. LGAs in

NSW consist of Cities (C) and Areas (A). The LGA level data that informs this report is based on the LGA boundaries prior to the NSW local government amalgamations of 2016, at this time there were 27 LGAs within the HNECC PHN region.

- Indigenous Areas (IAREs) - are aggregates of one or more Indigenous Locations with a minimum of 250 Indigenous local residents, and are designed to allow for more detailed statistics. IAREs aggregate to Indigenous Regions (IREGs), and incorporate the whole of Australia. IAREs provide a balance between spatial resolution and increased granularity of attribute data.

### **Hospitalisation data**

Hospitalisation rates are indicative of both the occurrence in a population of serious acute diseases and health conditions that require admitted patient care; and the access to and use of such care by people with these illnesses. A principle diagnosis is recorded for each hospitalisation along with any additional diagnoses as appropriate (AHMAC, 2015). Hospitalisation rates for the PHN region, used throughout this report are related to principle diagnosis.

Hospitalisation rates reflect the number of hospitalisation episodes, not the number of individuals hospitalised. Therefore, a person who is hospitalised on multiple occasions for the same condition will be counted each time and this will be reflected in the hospital separation rate.

As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

Summary data of hospitalisations by LGA for the HNECC PHN region was provided by the Hunter New England Local Health District Health Planning team in June 2016, who extracted the data using the health CaSPA reporting system, an in-house reporting tool. The data included aggregated numbers of hospital separations for Aboriginal patients admitted to any NSW hospital for the 2012-13, 2013-14 and 2014-15 periods. Data for non-Indigenous patients was not obtained at the time. This data was made available by the Hunter New England Local Health District Health Planning team for internal planning purposes only and has not been included in the public version of this report, the information however has been valuable in identifying local priorities, and informing and guiding the activities of HNECC.

### **PENCAT Data**

As at 31<sup>st</sup> July 2016, 117 General Practices had submitted data to HNECC using the online PAT CAT data tool, providing aggregated data for almost 1,000,000 patients in the HNECC PHN region. This represented around one quarter of all general practices in the region and did not include any Aboriginal Medical Services. General Practices who submitted data were located across all LGAs in the HNECC PHN region. The majority (68%) of patient records were provided by practices located in areas classified as major cities, 27% were from inner regional areas, and the remainder (5%) were from outer regional and remote areas.

Just under 4% of all data submitted was for patients identified as Aboriginal and/or Torres Strait Islander. For Aboriginal and Torres Strait Islander patients, practice data submissions were evenly spread between major cities (50%) and inner regional areas (38%), with the remainder (12%) from outer regional and remote areas.

## Stakeholder Consultation

HNECC interviewed a range of key stakeholders from across the HNECC PHN region from July to September 2016, to obtain their views as to the health needs of Aboriginal and Torres Strait Islander people, as well as barriers to service access and gaps in health service delivery. Stakeholders were also asked to comment on opportunities to improve health outcomes for Aboriginal people in the HNECC PHN region. Stakeholder groups represented included: Aboriginal consumers and communities; Aboriginal Medical Services; General Practitioners and other general practice staff; private health providers; non-government organisations; and local, state and commonwealth government organisations. Stakeholder feedback is presented throughout this report in [blue text](#).

# Population Demographics

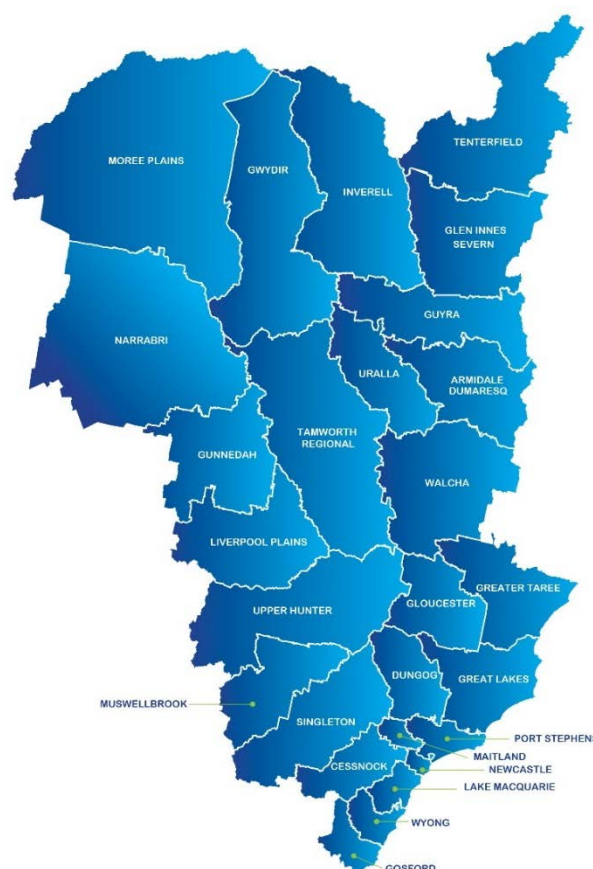
## HNECC PHN Region

The HNECC PHN is the second largest PHN in New South Wales, covering a large and diverse geographical area (133,812 km<sup>2</sup>). It incorporates 27 Local Government Areas<sup>1</sup> (LGAs), and reaches from just north of Sydney, across the north west of NSW, to the Queensland border. The region is serviced by Hunter New England LHD and Central Coast LHD.

### Australian Statistical Geography Standard (ASGS) - Remoteness Structure

ASGS was determined by the Australian Bureau of Statistics (ABS) and has been in effect since July 2011. The remoteness structure provides a geographical standard for the publication of statistics by relative remoteness. The ASGS allows quantitative comparisons between 'city' and 'country' Australia. The structure is used to distribute a broad range of ABS social and demographic statistics. It divides each state and territory into several regions based on location and distance to access goods and services (ABS, 2013a).

Table 1 shows the proportion of RAs that make up each LGA in the HNECC PHN region. The HNECC PHN region consists of major cities, inner regional, outer regional, a small proportion of remote, and very-remote areas.



**Table 1: Remoteness Areas ratio by Local Government Area, HNECC PHN region, 2001, (DoH, 2013).**

	Armidale Dumaresq	Cessnock	Dungog	Glen Innes Severn	Gloucester	Gosford	Great Lakes	Greater Taree	Gunnedah	Guyra	Gwydir	Inverell	Lake Macquarie	Liverpool Plains	Maitland	Moree Plains	Muswellbrook	Narrabri	Newcastle	Port Stephens	Singleton	Tamworth Regional	Tenterfield - part a	Upper Hunter Shire	Uralla	Walcha	Wyong
Major city		0.3				1							1		1				1	0.3							1
Inner regional	0.9	0.7	0.9		0.8		1	1						0.2			1			0.7	1	0.8		0.6			
Outer Regional	0.1		0.1	1	0.2				1	1	1	1		0.8		0.9		0.9				0.2	1	0.4	1	1	
Remote																0.1		0.1									

<sup>1</sup> The LGA level data that informs this report is based on the LGA boundaries prior to the NSW local government amalgamations of 2016, at this time there were 27 LGAs within the HNECC PHN region.

## Estimated Resident Population (ERP)

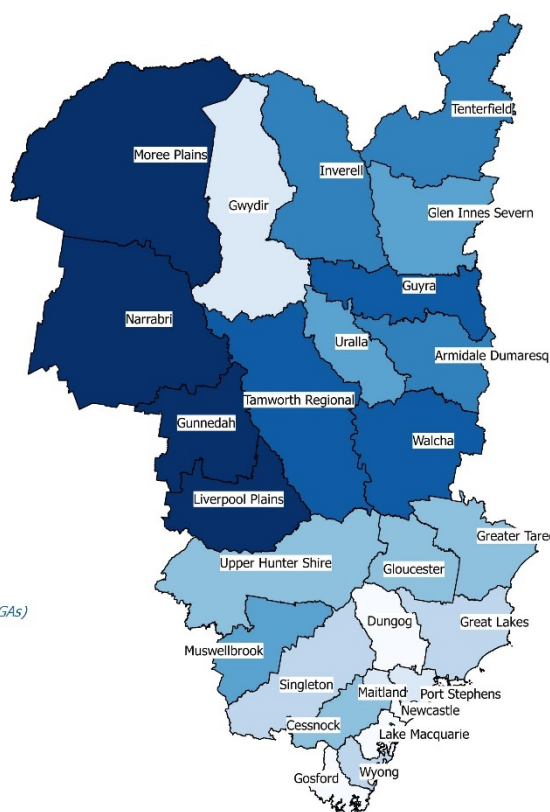
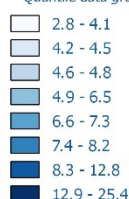
In 2015, the Aboriginal Estimated Resident Population (ERP) for the region was 5.1% (63,900 people) of the total population (1,243,756 people), compared to 3.1% nationally, placing HNECC PHN with the seventh highest Aboriginal population amongst the 31 PHNs nationwide (PHIDU, 2016b). Even with increasing numbers of people identifying as Aboriginal, this population is still under-identified.

Figure 1 shows the Aboriginal population as a proportion of the total population for each LGA across the HNECC PHN region. The LGAs with the highest proportion of Aboriginal people are located in the northern parts of the region and include: Moree Plains with over a quarter (25.4%) of the population identifying as Aboriginal; Gunnedah (14.2%); Narrabri (13.2%); and Liverpool Plains (13.0%). The largest numbers of Aboriginal people however, are found in the metropolitan areas and regional centres across the geographic footprint and include the LGAs of Lake Macquarie (7,511 people); Wyong (7,340 people); Tamworth (6,266 people); and Newcastle (5,413 people) (PHIDU, 2016b).

**Figure 1: Aboriginal population as a percentage of the total population (2015 ERP), by LGA, HNECC PHN region, (PHIDU, 2016b).**

### Aboriginal people (%)

\* Quantile data grouping (equal counts of LGAs)



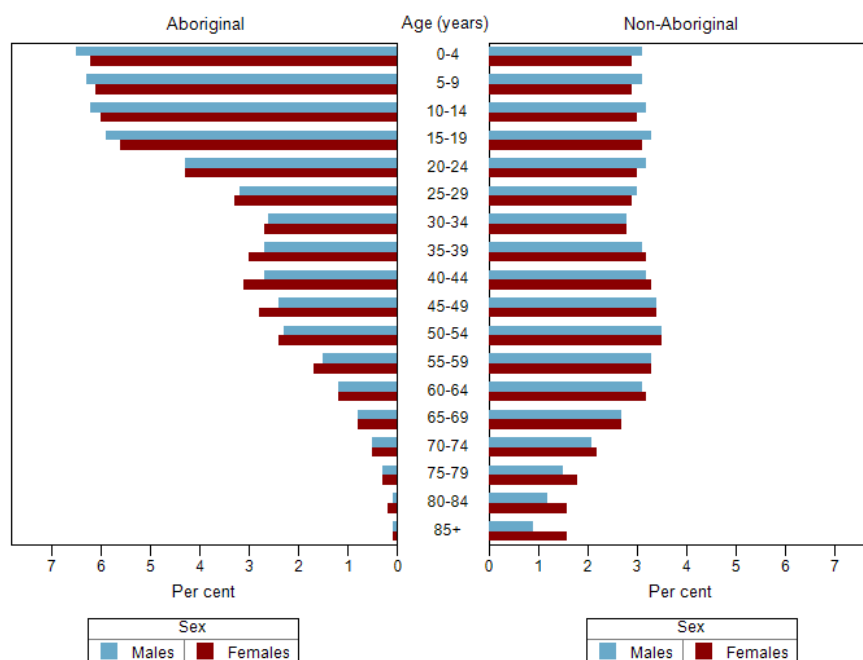
LGA	Aboriginal people (ERP)	%
Armidale Dumaresq	1981	7.8
Cessnock	3357	6.1
Dungog	371	4
Glen Innes Severn	629	7
Gloucester	291	5.7
Gosford	4841	2.8
Great Lakes	1701	4.7
Greater Taree	3196	6.5
Gunnedah	1852	14.2
Guyra	521	12.2
Gwydir	219	4.5
Inverell	1362	8
Lake Macquarie	7511	3.7
Liverpool Plains	1023	13
Maitland	3374	4.4
Moree Plains	3550	25.4
Muswellbrook	1146	6.7
Narrabri	1809	13.2
Newcastle	5413	3.4
Port Stephens	3117	4.4
Singleton	1096	4.6
Tamworth Regional	6266	10.3
Tenterfield	516	7.9
Upper Hunter Shire	703	4.8
Uralla	465	7.1
Walcha	265	8.5
Wyong	7340	4.6

## National Population Projections

In 2011, the national Aboriginal ERP was 669,990 people, this is projected to increase to between 907,800 and 945,600 people in 2026, with an average annual growth rate of between 1.5% and 1.8%. The Aboriginal population is projected to increase across all ages, and in particular the 65 years+ age group is projected to double from 22,700 in 2011 to between 57,400 and 61,900 in 2026. The estimated median age of the Aboriginal population is also projected to increase from 21.6 years, to between 24.7 and 25.4 years in 2026 (ABS, 2014b).

## Age Profile

The age distribution of the Aboriginal population compared to the non-Indigenous population across the HNECC PHN region is shown in Figure 2, which illustrates that the Aboriginal population has a considerably younger age profile than the non-Indigenous population.



**Figure 2: Population by Aboriginality, age and sex, HNECC PHN region, 2011, (Centre for Epidemiology and Evidence, 2016).**

Note. Based on population estimates as at 30 June each year.

The younger Aboriginal age profile is believed to be due to higher rates of fertility, and deaths occurring at younger ages among the Aboriginal population. In 2013, the national fertility rate for Aboriginal women was 2.3 babies per woman, compared with 1.9 for non-Indigenous women (AIHW, 2015b). In 2010 – 2012, life expectancy for the Aboriginal population (74.6 years for females and 70.5 years for males) was around 10 years less than the non-Indigenous population (83.1 years for females and 79.8 years for males) (AIHW, 2014). Health risk factors and chronic illness are more prevalent in the Aboriginal population and contribute to this shorter life expectancy, with approximately 80% of the mortality gap between Aboriginal and non-Indigenous Australians aged between 35 and 74 years attributed to chronic disease (AIHW, 2010, 2014).



## Social Determinants of Health

The Social Determinants of Health play a key role in determining the physical and mental health of individuals and communities. There is strong evidence from Australia and other developed countries that low socioeconomic status has a direct correlation with poor health, higher incidence of risky health behaviours and people's ability to access health care services (Blakely, Hales & Woodward, 2004; Turrell & Mathers, 2000). There is a well-documented socioeconomic gradient in Australia, with people living in more disadvantaged areas suffering significantly higher rates of mortality when compared with people from less disadvantaged areas (NSW Department of Health, 2010). According to the Australian Institute of Health and Welfare, "the health burden in the Australian population attributable to socioeconomic disadvantage is large, and much of this burden is potentially avoidable" (AIHW, 2006).

**Information provided by stakeholders from across the HNECC PHN region supports the literature in that socioeconomic disadvantage is contributing to the poor health outcomes experienced by Aboriginal people. The overall social context of health is seen as critical, requiring a holistic approach incorporating physical, mental, cultural and social aspects of wellbeing.**

There is a need to understand where it is that Aboriginal Australians live, where relative and absolute need is greatest, and what the particular challenges are in different regions. Those areas with greater levels of measured disadvantage—either relative to the rest of the Australian Aboriginal population or relative to the non-Indigenous population in the region—will be those that require the greatest per capita investment and support (Biddle, 2013).

## Indigenous Relative Socioeconomic Outcomes Index (IRSEO)

In 2013, the ABS released the 2011 Socio-Economic Indexes for Areas (SEIFA), a set of measures of relative socio-economic disadvantage and advantage, calculated for almost all geographic areas in Australia (ABS, 2013b). For the Australian population as a whole, the SEIFA indices are widely used measures of relative disadvantage at the area level and have been found to correlate with other characteristics of individuals who live in those areas. Despite this, such indices are not always useful when it comes to designing policy for the Aboriginal population (Biddle, 2013).

As Aboriginal people make up only a small percentage of the Australian population, the standard SEIFA indices are dominated by characteristics of the non-Indigenous population in an area, and will not adequately show the distribution of Aboriginal disadvantage. In addition, Aboriginal Australians consistently have lower socioeconomic status than the SEIFA score for the area. There are also variables in the standard SEIFA indices that may not be as relevant or have a different meaning for the Aboriginal population compared to the non-Indigenous population (Biddle, 2013).

The Indigenous Relative Socioeconomic Outcomes (IRSEO) index is a specific Aboriginal indicator calculated by the Centre for Aboriginal Economic Policy Research from the 2011 Census of Population and Housing (Biddle, 2013). In comparison to SEIFA, the IRSEO index is calculated separately for the Aboriginal population in each Indigenous Region of Australia, as well as each

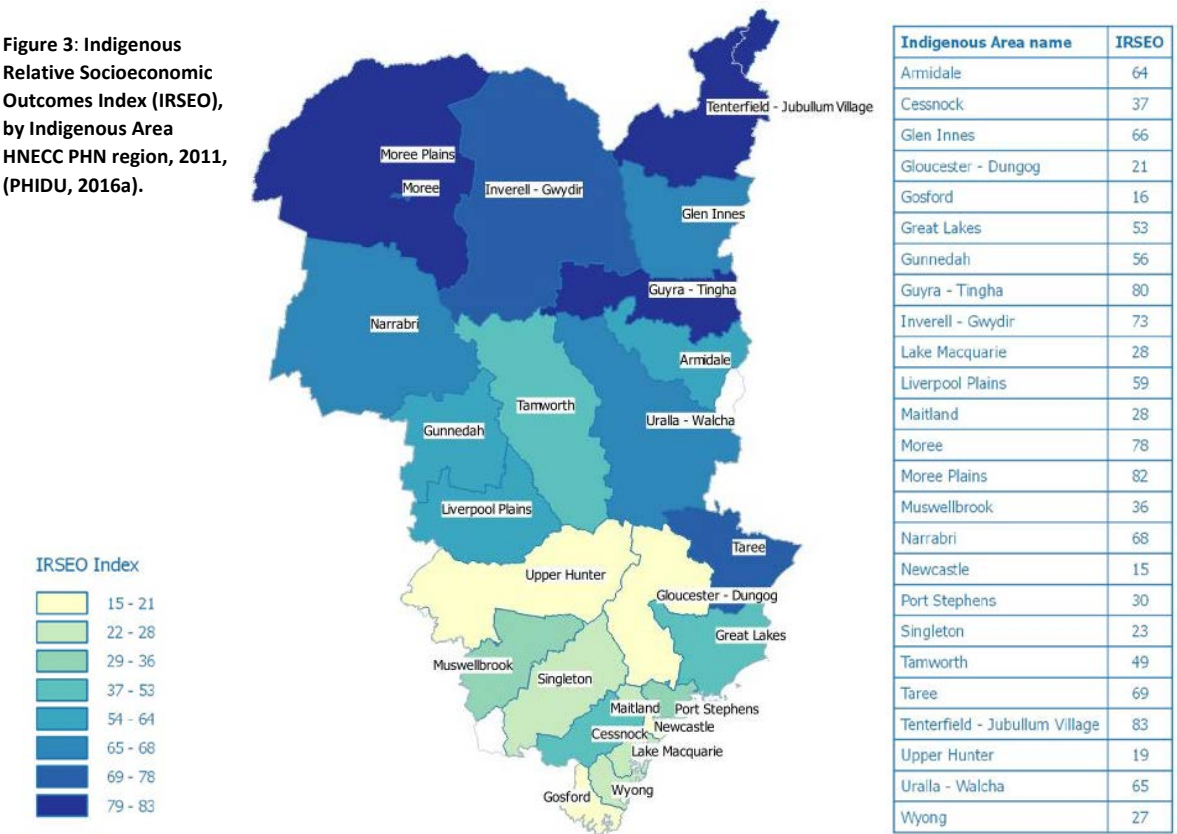
Indigenous Area. The Index ranges from 1 to 100, where a score of 1 represents the most relatively advantaged and a score of 100 represents the most relatively disadvantaged. The IRSEO is comprised of a set of 9 socioeconomic outcomes of the local resident population of the area. Specifically, following the targets included in the Closing the Gap framework, the focus is on employment, education, income and housing, and includes:

- Population 15 years+ employed;
- Population 15 years+ employed as a manager or professional;
- Population 15 years+ employed full-time in the private sector;
- Population 15 years+ who have completed Year 12;
- Population 15 years+ who have completed a qualification;
- Population 15 to 24 years old attending an educational institution;
- Population 15 years+ with an individual income above half of the Australian median;
- Population who live in a house that is owned or being purchased; and
- Population who live in a house with at least one bedroom per resident (PHIDU, 2016a).

It is important to note that information on health, language or other cultural factors is not included. Furthermore, the index is informed largely by variables specifically constructed for the adult Indigenous population (Biddle, 2013).

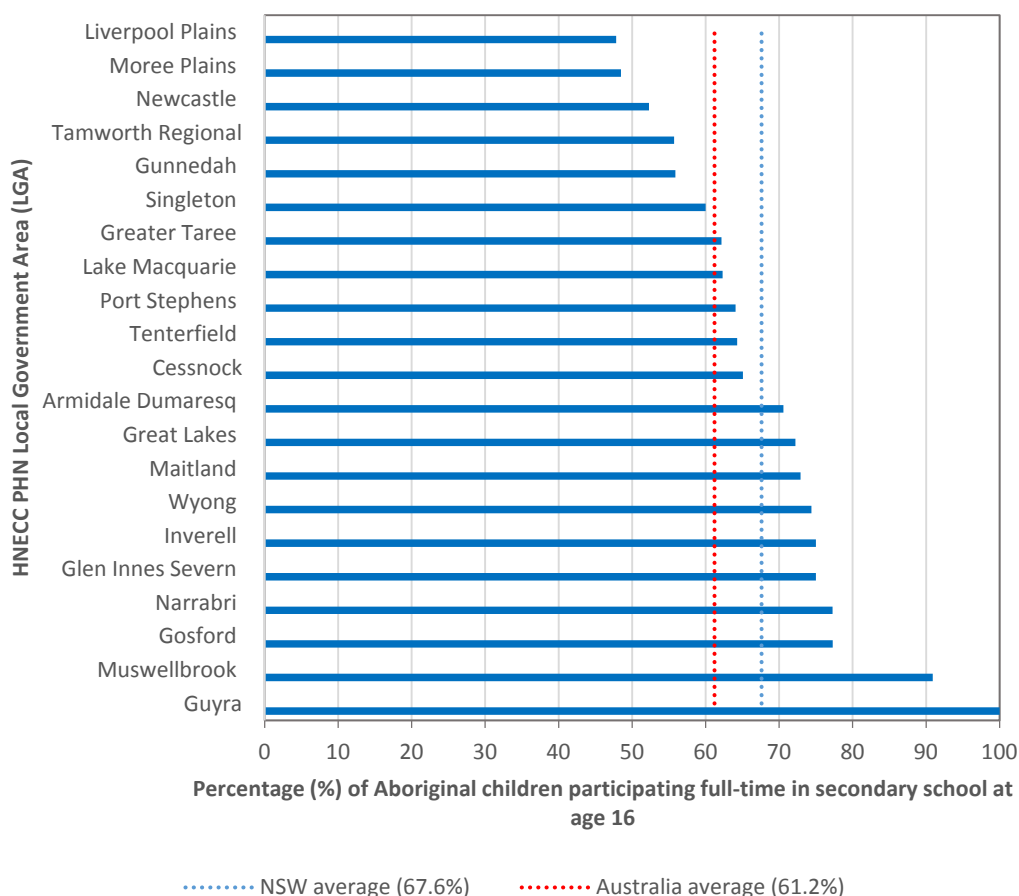
Figure 3 presents IRSEO index values by Indigenous Area for the HNECC PHN region. Consistent with national results, Aboriginal populations in city areas and large regional towns in the HNECC PHN region have substantially better socioeconomic status relative to their rural and remote counterparts. Indigenous Areas with the highest IRSEO index, and therefore the most relative disadvantage, in the HNECC PHN region are Tenterfield-Jubullum Village (83), Moree Plains (82), and Guyra-Tingha (80), which are considerably more disadvantaged than NSW (41) and the nation (46). The lowest IRSEO index Indigenous Areas, and therefore the most relatively advantaged, are Newcastle (15), Gosford (16), and Upper Hunter (19).

Figure 3: Indigenous Relative Socioeconomic Outcomes Index (IRSEO), by Indigenous Area HNECC PHN region, 2011, (PHIDU, 2016a).



## Education

Greater levels of education are linked to improved health outcomes through increased health literacy, and enhanced income and employment prospects leading to higher socioeconomic status (AHMAC, 2015). In 2011, the NSW rate of Aboriginal participation in secondary school at 16 years of age was 67.6%. As illustrated in Figure 4, in 2011 in the HNECC PHN region, LGAs with the highest rates of participation were Guyra (100%), Muswellbrook (90.9%), Gosford (77.3%) and Narrabri (77.3%). Low rates of participation in full time secondary education were recorded in Liverpool Plains (47.8%), Moree Plains (48.5%) and Newcastle (52.3%), which were substantially lower than the state rate (PHIDU, 2013).



**Figure 4: Aboriginal full-time participation in secondary school at 16 years, by LGA, HNECC PHN region, 2011, (PHIDU, 2013).**

Note. No data available for the LGAs of Gwydir, Uralla, Dungog, Gloucester and Upper Hunter Shire.

## Income

Low income is associated with poor health and reduced life expectancy, along with substance abuse, poorer social outcomes, crime and violence (AHMAC, 2015).

In NSW in 2011, the median *weekly household income* for Aboriginal households was \$941 (all households: \$1,237). As indicated in Table 2, there was substantial variability between LGAs in the HNECC PHN region, with average median weekly household income for Aboriginal households ranging from \$539 in Walcha LGA to \$1,531 in Singleton LGA (ABS, 2012b). The higher income in the Singleton area is attributed to the large proportion of the workforce employed in the mining and power generation industries at that time.

In 2011, the NSW median *weekly personal income* for Aboriginal people aged 15 years and over was \$375 (non-Indigenous personal income: \$561). LGAs in the HNECC PHN region with the lowest median weekly personal incomes were Tenterfield (\$289), Walcha (\$302), Greater Taree (\$306) and Inverell (\$306) (Table 2) (ABS, 2012b).

Local Government Area (LGA)	Median weekly household Income (all households)	Median weekly household income (Aboriginal households)	Median weekly personal income (non-Indigenous people)	Median weekly personal income (Aboriginal people)
Armidale Dumaresq	990	749	494	334
Cessnock	1,042	1,082	472	386
Dungog	1,007	968	485	373
Glen Innes Severn	733	790	395	323
Gloucester	810	853	422	377
Gosford	1,089	1,093	533	390
Greater Taree	770	721	395	306
Great Lakes	729	762	395	345
Gunnedah	935	782	485	365
Guyra	811	794	419	339
Gwydir	723	738	387	336
Inverell	792	735	430	306
Lake Macquarie	1,117	1,038	520	404
Liverpool Plains	798	788	432	358
Maitland	1,292	1,136	562	394
Moree Plains	1,047	740	558	315
Muswellbrook	1,399	1,285	619	456
Narrabri	981	745	520	343
Newcastle	1,165	1,044	563	411
Port Stephens	999	1,027	498	380
Singleton	1,692	1,531	640	460
Tamworth Regional	958	866	516	377
Tenterfield	693	636	377	289
Upper Hunter Shire	1,071	1,136	552	413
Uralla	932	823	481	374
Walcha	825	539	459	302
Wyong	934	1,009	469	398
<b>NSW</b>	<b>1,237</b>	<b>941</b>	<b>561</b>	<b>375</b>
<b>Australia</b>	<b>1,234</b>	<b>991</b>	<b>577</b>	<b>362</b>

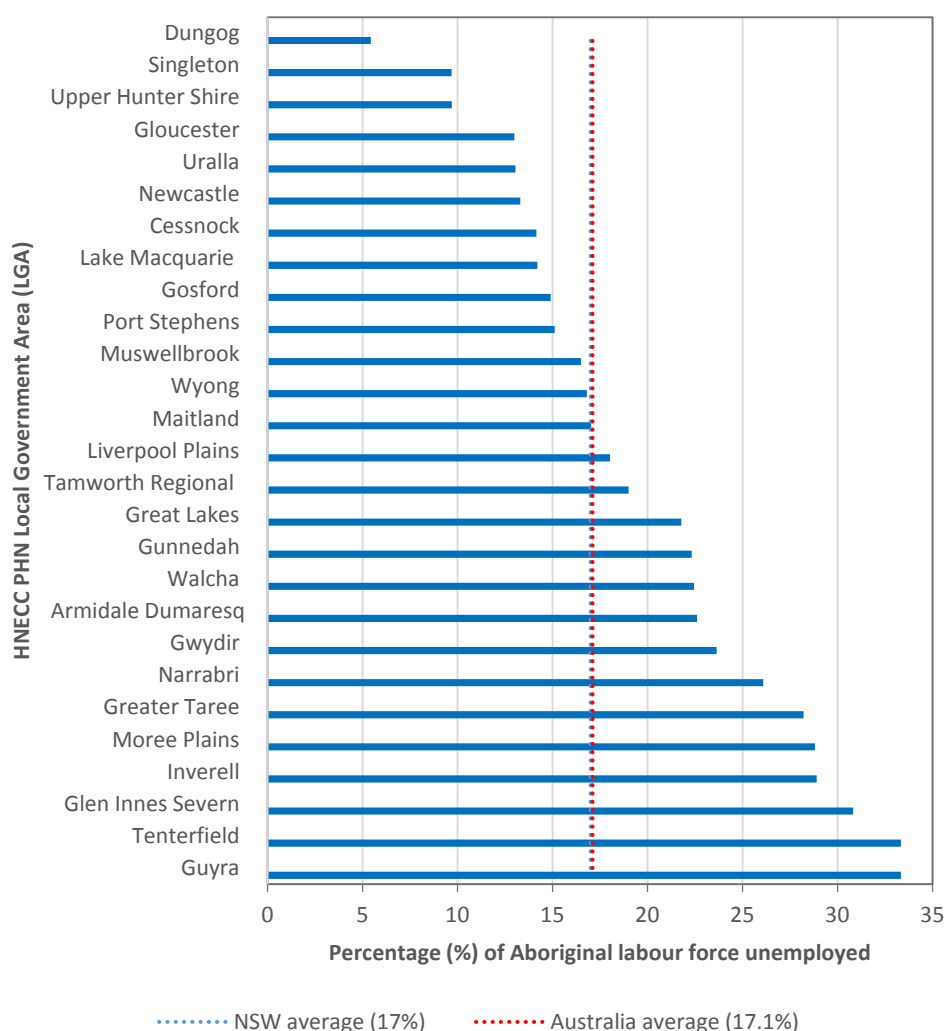
**Table 2: Median weekly income: household and personal (\$), by LGA, HNECC PHN region, 2011, (ABS, 2012b).**

## Employment

Employment is a key factor influencing health, social and emotional wellbeing, and standards of living (Bambra, 2011). The reasons for the lower employment rates of Aboriginal people include: poorer health; lower levels of education and training; greater involvement with the criminal justice system; discrimination; and poorer job retention (Gray, Hunter & Lohar, 2012).

In Australia in 2012-13, just under half (47%) of Aboriginal people aged 15-64 years were employed, with 29.7% working full-time and 17.8% working part-time. Based on age standardised proportions, the unemployment rate for Aboriginal people aged 15-64 years was more than four times the rate for non-Indigenous people (rate ratio: 4.2) (ABS, 2014a).

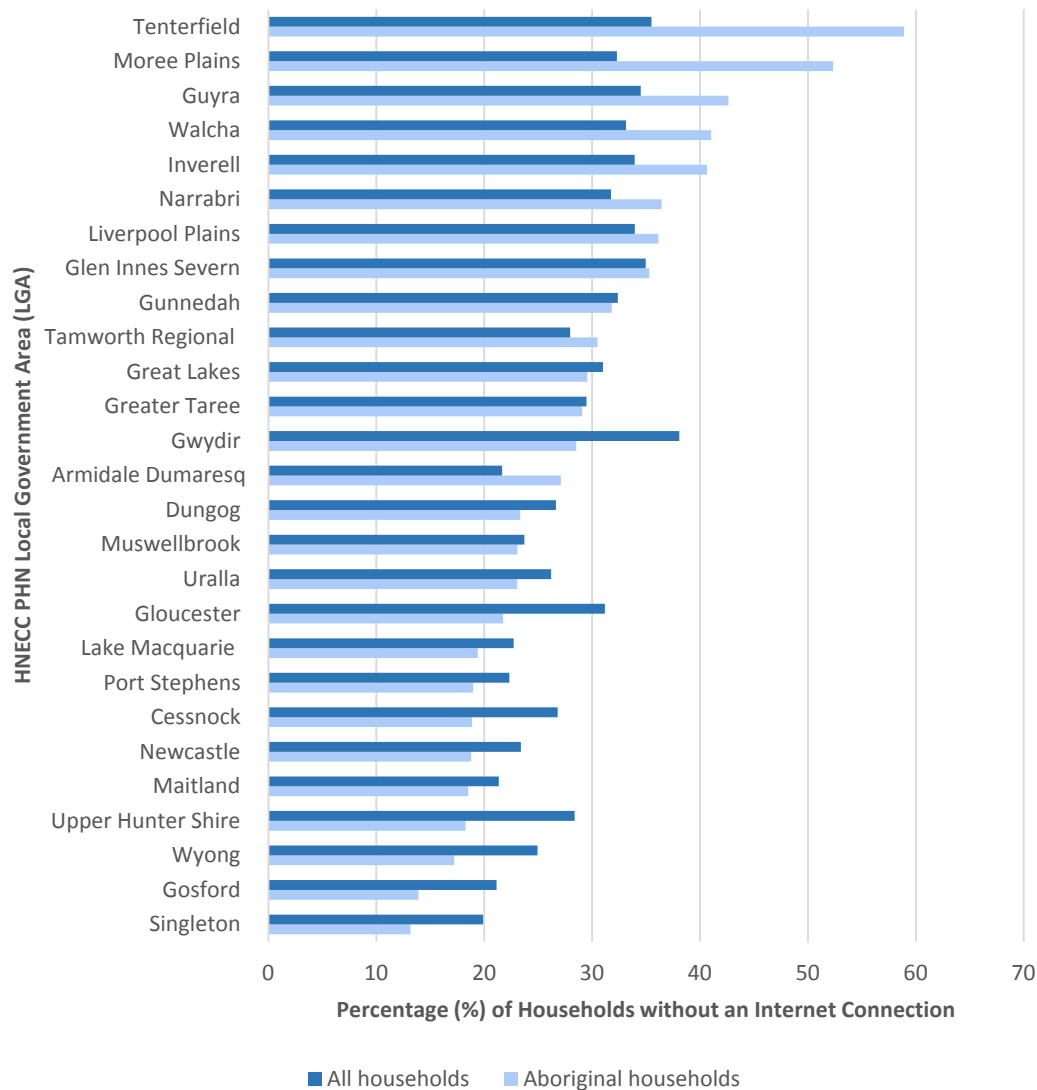
Unemployment rates for Aboriginal people in the HNECC PHN region in 2011 are shown in Figure 5, the LGAs of Tenterfield (33.3%), Guyra (33.3%), and Glen Innes Severn (30.8%) had the highest unemployment rates, greater than the NSW average (17%). Lower rates of unemployment for Aboriginal people compared to NSW were recorded in the LGAs of Dungog (5.4%), Singleton (9.7%) and Upper Hunter Shire (9.7%) (PHIDU, 2013).



**Figure 5: Proportion (%) of Aboriginal labour force unemployed, by LGA, HNECC PHN region, 2011, (PHIDU, 2013).**

## Internet Access

In NSW in 2011, 24.4% of Aboriginal households did not have an internet connection which was higher than the average for all NSW households of 20.1% (PHIDU, 2013). As illustrated in Figure 6, Aboriginal people residing in Tenterfield (58.9%) and Moree Plains (52.3%) LGAs had the highest rates of no internet access. The socioeconomic disadvantage of these communities has been highlighted in IRSEO data and is again reflected in these figures (PHIDU, 2013).



**Figure 6: Proportion (%) of households without an internet connection, all households and Aboriginal households, by LGA, HNECC PHN region, 2011, (PHIDU, 2013).**

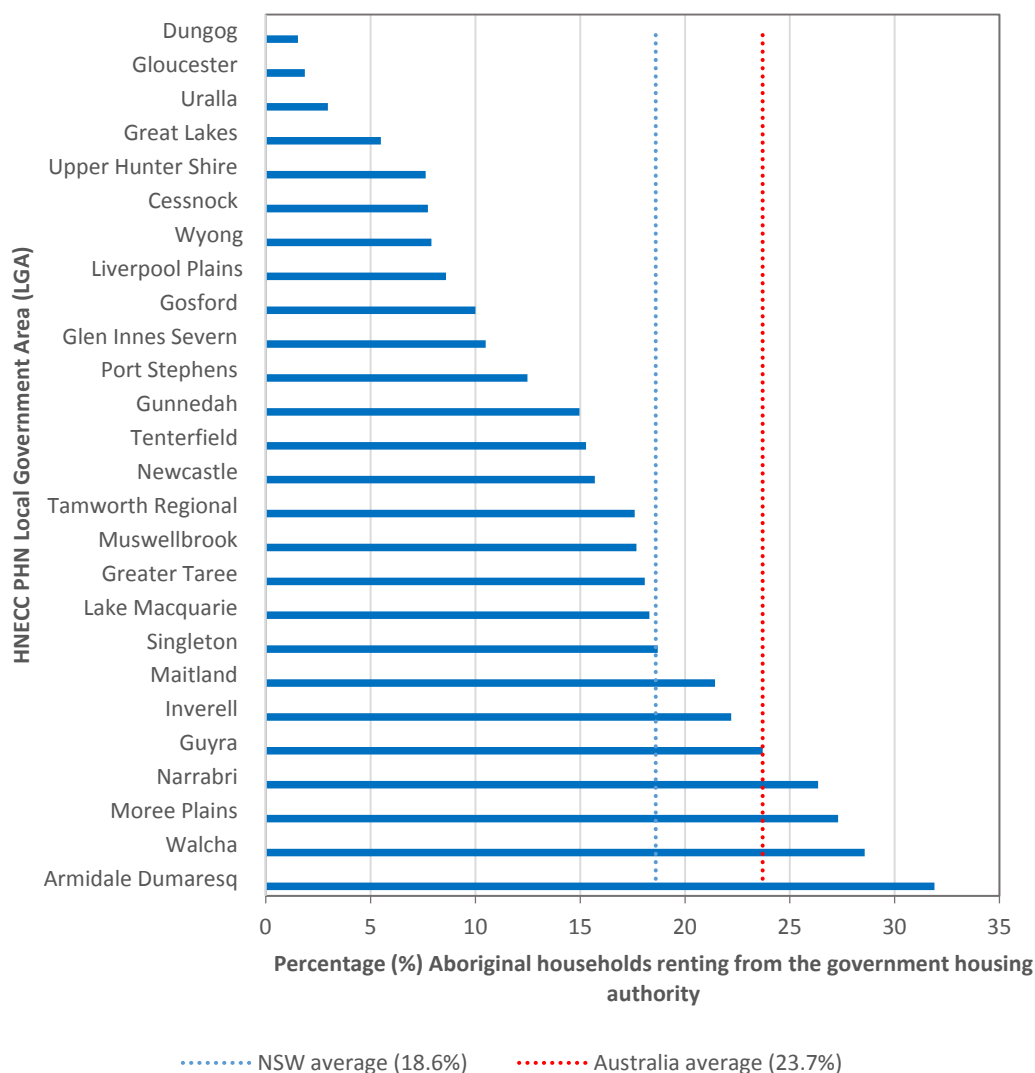


## Housing

A person's housing situation, such as overcrowding, insecure tenure, or homelessness, can impact on their health status and health outcomes (AHMAC, 2015).

In NSW in 2012-13, 16% of Aboriginal people lived in overcrowded households (non-Indigenous proportion: 6%). In 2011 in NSW 41% of Aboriginal adults were home owners (non-Indigenous proportion: 71%). The rate of homelessness for Aboriginal people in NSW in 2011 was 128 per 100,000 which was 3 times the rate for non-Indigenous people (AIHW, 2015a).

As shown in Figure 7, in 2011 in the HNECC PHN region, LGAs with the highest rate of dwellings rented by Aboriginal households from the government housing authority were Armidale Dumaresq (31.9%), Walcha (28.6%) and Moree Plains (27.3%), which were much higher than the state (18.6%) and national (23.7%) rates (PHIDU, 2013). [Health professionals from across the HNECC PHN region have confirmed that homelessness or insecure housing are contributing to poorer health outcomes for Aboriginal people.](#)



**Figure 7: Proportion (%) of Aboriginal households renting from the government housing authority, by LGA, HNECC PHN region, 2011, (PHIDU, 2013).**

Note: No data available for Gwydir LGA.

## Health Risk Behaviours

Health risk behaviours, such as smoking, poor nutrition, physical inactivity and alcohol consumption contribute to the poorer health status of the Aboriginal population. A reduction in the prevalence of key modifiable health risk behaviours will promote health and prevent occurrence of disease.

### Smoking

Smoking is a major risk factor for death and disease in Australia, and is linked to numerous health problems, including: chronic obstructive pulmonary disease (COPD); circulatory disease; and cancer (AIHW, 2007). Any tobacco control strategy implemented by Government, LHDs or PHNs is likely to influence smoking rates, whether it be large-scale media campaigns; provision of smoking cessation support services; brief smoking cessation interventions in clinical care; or GP-based or community-led interventions (Cancer Institute NSW, 2016).

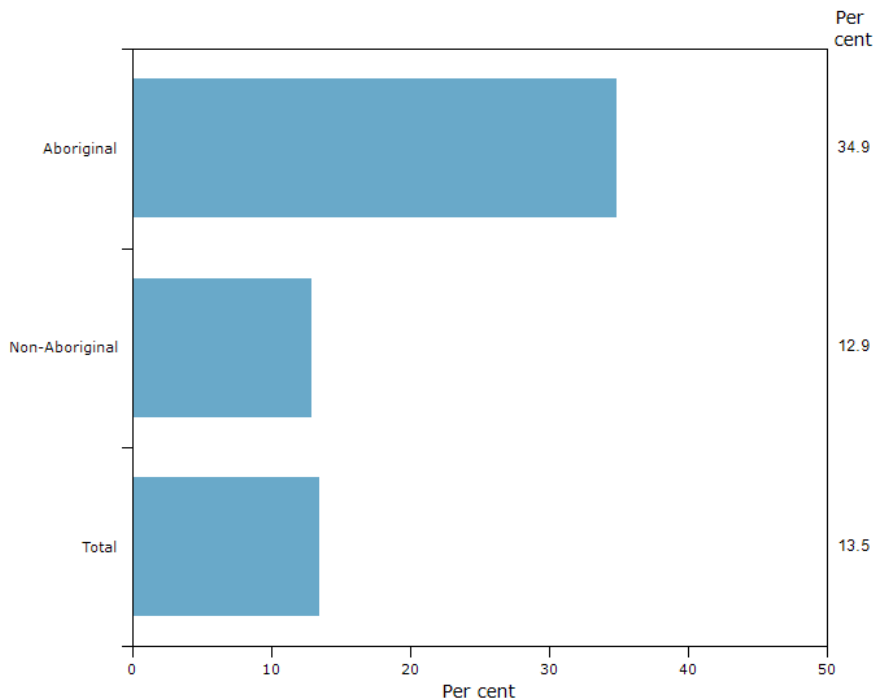
Research with a small sample of young Aboriginal people found that the key reasons for smoking were stress, social influence and boredom. The motivators for quitting in this sample were pregnancy or children, sporting performance for males, cost and health; whilst barriers to smoking cessation included social influences, the perception of quitting as a distant event and an unwillingness to access support (Cosh et al., 2015).

#### *Australia*

In Australia in 2012-13, 42% of Aboriginal people aged 15 years+ smoked daily compared to 15% of non-Indigenous people (ABS, 2014). Between 2002 and 2012-13, current smoking rates (including daily and less than daily smokers) significantly declined from 51% to 44% for Aboriginal people aged 15 years+ (AIHW, 2015a). However Aboriginal people were still 2.5 times as likely as non-Indigenous people to be current smokers (AIHW, 2015a; Australian Indigenous HealthInfoNet, 2016). The highest smoking rates for Aboriginal people were recorded in the 25-34 year age group (54%), and the lowest in the 15-17 year age group (19%), with a similar trend observed for non-Indigenous people. Aboriginal people were significantly more likely to report being a non-smoker if they had completed Year 12 (70%) than if they had not (53%); if they were employed (62%) rather than unemployed (42%); or if they reported excellent, very good or good self-assessed health (58%) rather than fair or good (51%) (AIHW, 2015a).

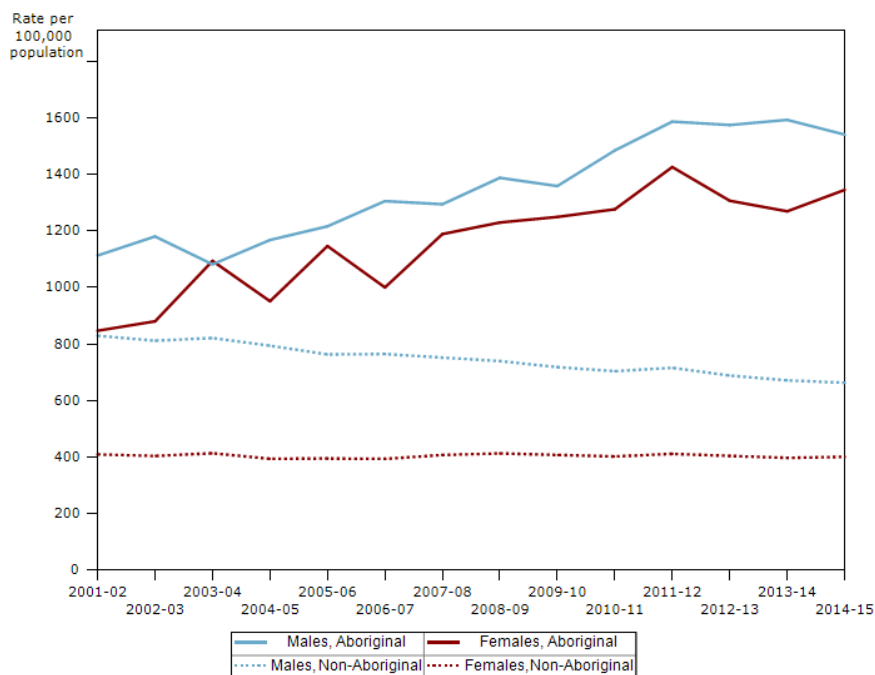
#### *New South Wales*

In NSW in 2015, 34.9% of Aboriginal adults aged 16 years and over were current smokers at more than two and a half times the non-Indigenous rate (12.9%) (Figure 8). From 2001-02 to 2014-15, the rate of smoking attributable hospitalisations in NSW increased in the Aboriginal population from 962.4 to 1,435.9 per 100,000, in contrast the rate for non-Indigenous people decreased from 602.3 to 523.9 per 100,000, increasing the rate difference between the two populations from 360.1 to 912 per 100,000. This substantial widening of the gap between Aboriginal and non-Indigenous people can be seen in Figure 9 (Centre for Epidemiology and Evidence, 2016).



**Figure 8: Current smoking by Aboriginality, persons aged 16 years and over, NSW 2015,**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).



**Figure 9: Rates of smoking attributable hospitalisations by Aboriginality and sex, NSW 2001-02 to 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, not where they are treated.

### HNECC PHN

In the HNECC PHN region in 2012-13, 36.7% of Aboriginal people aged 15 years+ smoked daily (ABS, 2015). In accordance with the data, health professionals from across the HNECC PHN region have identified smoking as a health need for Aboriginal people.

Please refer to the maternal and child health section for rates of smoking during pregnancy.

## Nutrition

Adequate consumption of fruit and vegetables can help prevent chronic diseases such as cancer, diabetes, kidney disease and ischemic heart disease (WHO, 2003). The National Health and Medical Research Council published revised Australian Dietary Guidelines in 2013, providing recommendations as to the adequate minimum daily consumption of fruit and vegetables depending on age and sex (NHMRC, 2013).

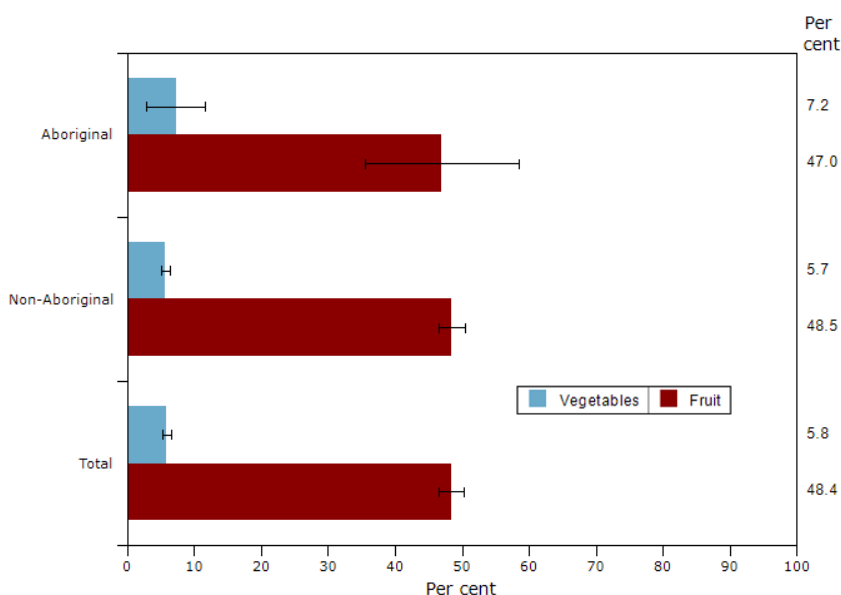
### Australia

In Australia in 2012-13, 97% of Aboriginal people aged 15 years+ did not consume an adequate amount of fruit and/or vegetables, with only 42% consuming sufficient fruit, and 5% consuming adequate vegetables. 85% of Aboriginal children (2-14 years) did not consume adequate amounts of fruit and/or vegetables, with children more likely to consume an adequate amount of fruit (78%) than vegetables (16%) (AIHW, 2015b; Australian Indigenous HealthInfoNet, 2016). Aboriginal people with a lower income were more likely to report inadequate fruit and vegetable intake than those with a higher income (10% compared with 6%). Similarly, Aboriginal people who were unemployed were less likely to eat the recommended serving of fruit (39%) than those who were employed (43%) (AIHW, 2015a).

In 2012-13, Aboriginal people aged 15 years+ were 7 times more likely (25%) than non-Indigenous people (3%) to live in a household that ran out of food and could not afford to buy more in the previous 12 months (AIHW, 2015a).

### New South Wales

In NSW, in 2015, 47% of Aboriginal people and 48.5% of non-Indigenous people aged 16 years+ consumed 2 or more serves of fruit daily. It can also be seen in Figure 10, that 7.2% of Aboriginal people aged 16 years+ consumed the recommended number of serves of vegetables daily, which was higher than non-Indigenous people aged 16 years+ (5.7%). In 2014, 18.5% of Aboriginal people and 6.5% of non-Indigenous people aged 16 years+ had experienced food insecurity in the previous 12 months, having run out of food and been unable to buy more (Centre for Epidemiology and Evidence, 2016).



**Figure 10:**  
Recommended consumption of fruit and vegetables by Aboriginality, persons aged 16 years+, NSW 2015, (Centre for Epidemiology and Evidence, 2016).

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

## HNECC PHN

Health professionals across the HNECC PHN region have highlighted poor nutrition as an area of concern for Aboriginal people, identifying a need for healthy eating programs to address this issue.

## Physical Activity

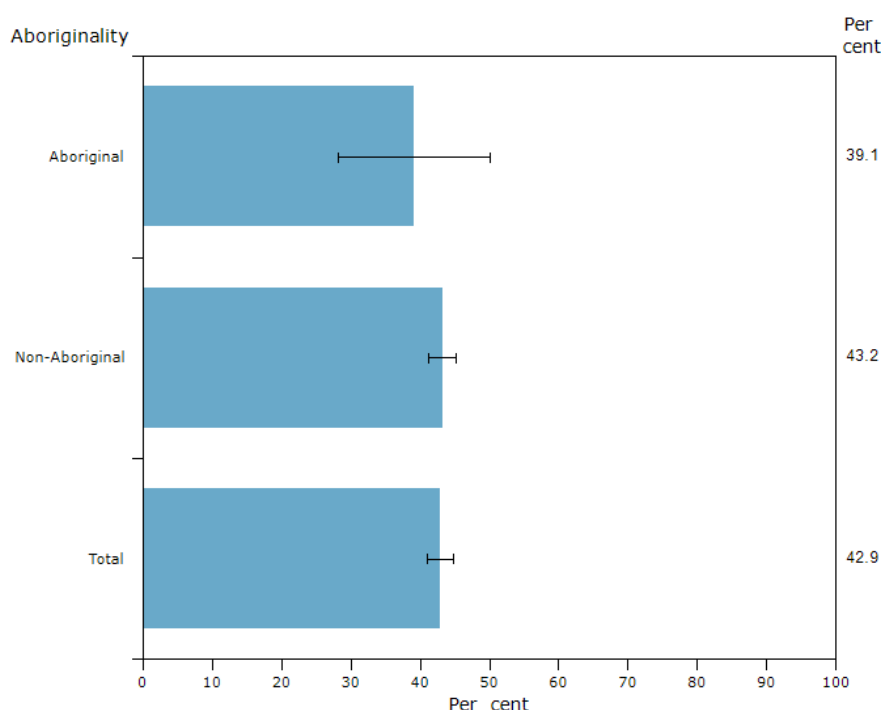
Physical inactivity is associated with overweight and obesity, as well as many potentially preventable diseases such as Type II diabetes, cardiovascular disease, osteoporosis, stroke, hypertension and cancer (AHMAC, 2015; AIHW, 2015b).

### Australia

In Australia in 2012-13, in non-remote areas, 38% of Aboriginal adults had been sufficiently active in the previous week. Aboriginal adults were less likely to have been sufficiently active than non-Indigenous adults (rate ratio of 0.8), and were more likely to be inactive (rate ratio of 1.3) (AHMAC, 2015; AIHW, 2015a). Aboriginal adults spent more of their time walking for transport (1.7 times) than non-Indigenous adults, and less for fitness, recreation or sport (0.8 times). Aboriginal adults spent less time engaged in moderate (0.7 times) or vigorous physical activity (0.8 times) than non-Indigenous adults. 82% of Aboriginal children and 81% of non-Indigenous children aged 2-4 years met the physical activity recommendations, as did 48% of Aboriginal children and 35% of non-Indigenous children aged 5-17 years (AIHW, 2015a).

### New South Wales

In NSW in 2015, 39.1% of Aboriginal people aged 16 years+ engaged in adequate physical activity, which was less than the rate for non-Indigenous people (43.2%), as can be seen in Figure 11 (Centre for Epidemiology and Evidence, 2016).



**Figure 11: Adequate physical activity by Aboriginality, persons aged 16 years and over, NSW 2015,**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

### HNECC PHN Region

In accordance with findings at a state level, health professionals from across the HNECC PHN region have identified physical inactivity as an area of need for Aboriginal people.

## Overweight and Obesity

Being overweight or obese is a risk factor for many health conditions, such as cardiovascular disease, Type II diabetes, musculoskeletal conditions, respiratory conditions, cancer and sleep disorders. Obesity is thought to make a sizeable contribution to the health gap between Aboriginal people and non-Indigenous people in Australia (AIHW, 2015a; Australia Indigenous HealthInfoNet, 2016).

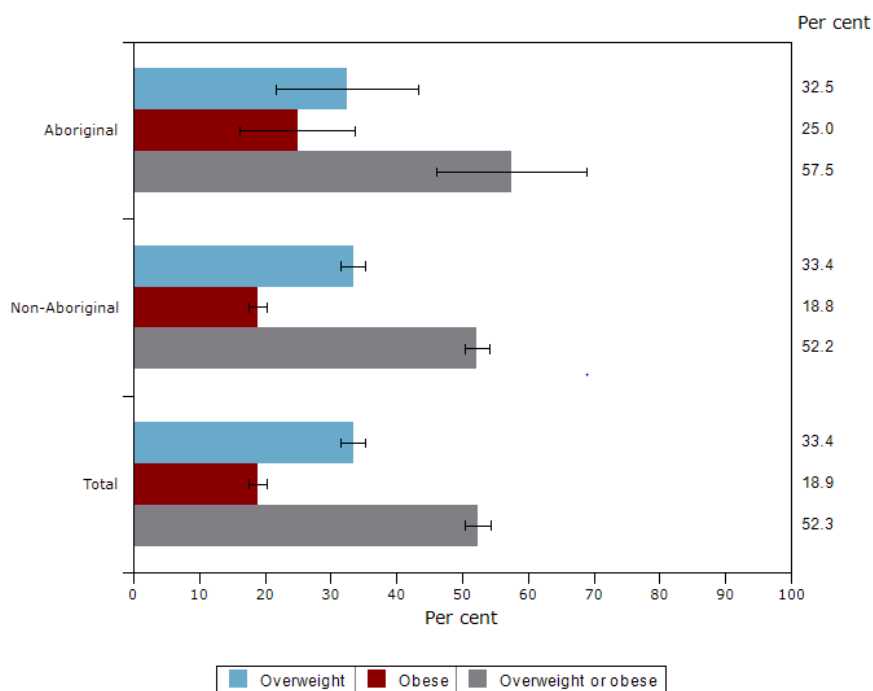
### Australia

In Australia in 2012-13, 66% of Aboriginal people aged 15 years+ had a measured body mass index (BMI) score in the overweight (29%) or obese range (37%) (AHMAC, 2015). Aboriginal women had higher rates of obesity (40%) than men (34%), and lower rates of being overweight (26%) than men (31%). Rates of overweight and obesity increased with age for Aboriginal people from 35% among those aged 15-17 years to 80% among those aged 55 years+, with a similar pattern observed for non-Indigenous people (AIHW, 2015a).

Aboriginal children aged 2-14 years were more likely to be underweight (8%) than non-Indigenous children (5%); and more likely to be overweight or obese (30%) than non-Indigenous children (25%) (AHMAC, 2015).

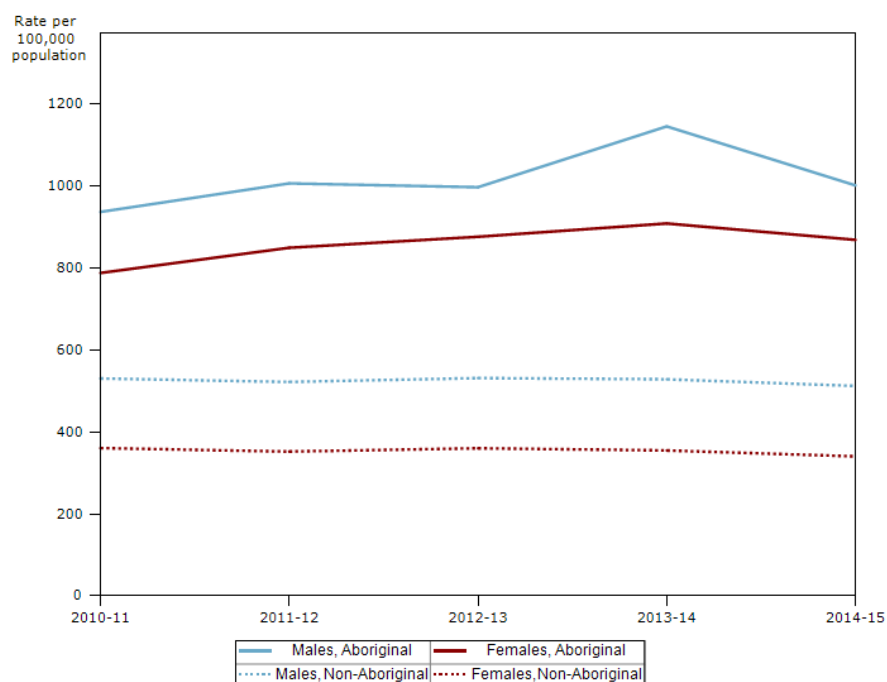
### New South Wales

In NSW, in 2015, 57.5% of Aboriginal adults aged 16 years+ were overweight or obese, which was higher than the non-Indigenous rate (52.2%). Aboriginal people were more likely to be overweight (32.5%) than obese (25.0%), which can be seen in Figure 12. Figure 13 clearly shows the gap between the rates of high body mass attributable hospitalisations for Aboriginal and non-Indigenous people in NSW over the period 2010-11 to 2014-15 (Centre for Epidemiology and Evidence, 2016).



**Figure 12: Overweight or obesity by Aboriginality, persons aged 16 years and over, NSW 2015 (Centre for Epidemiology and Evidence, 2016).**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).



**Figure 13: Rate of high body mass attributable hospitalisations, by Aboriginality and sex, NSW 2010-11 to 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, not where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

#### *HNECC PHN*

In the HNECC PHN region in 2012-13, 60.9% of Aboriginal people aged 2 years+ were overweight (23.2%) or obese (37.7%). Compared to 54.9% for Australia (25.9% overweight, 29.0% obese) (ABS, 2015). *In alignment with the data, health professionals from across the HNECC PHN region have confirmed that overweight and obesity is an area of need for Aboriginal people.*



## Alcohol Consumption

Risky alcohol consumption has been shown to be associated with health and social problems in all populations (AHMAC, 2015). The National Health and Medical Research Council advises that “drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury” and also that “drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion” (NHMRC, 2009).

Long term excessive consumption of alcohol has been linked to health conditions such as liver disease, heart disease, pancreatitis, obesity, stroke, diabetes and cancer. It is also associated with mental health, drug, and social and emotional well-being issues. Single occasion risky drinking or binge drinking has been associated with an increased risk of injury or death from violence, burns, falls, transport accidents or suicide. Furthermore, alcohol abuse or dependence has been shown to negatively affect relationships within the family environment, workplace and community due to anti-social behaviour, assault, violence and imprisonment (AIHW, 2015b; NHMRC, 2009).

### *Australia*

In 2012-13, 72% of Aboriginal people aged 15 years+ in Australia reported consuming alcohol in the previous 12 months, which was significantly fewer than non-Indigenous people (81%). Aboriginal people were also more likely to have never consumed alcohol (13%) compared to non-Indigenous people (11%) (AIHW, 2015b). However, 54% of Aboriginal people aged 15 years+ had consumed a risky amount of alcohol in a single occasion within the previous year, and were 1.1 times as likely as non-Indigenous people to do so. Further to this, 18% of Aboriginal people aged 15 years+ consumed alcohol at rates that exceeded the lifetime risk guidelines, which was similar to the rate for non-Indigenous people (AIHW, 2015a).

In 2011-12 to 2012-13, Aboriginal males were hospitalised 4.5 times and females 3.6 times the rate of their non-Indigenous counterparts for alcohol use. Over this time, there were 9,995 hospitalisations of Aboriginal people due to alcohol use, at a rate of 9 per 1,000, compared to 2 per 1,000 for non-Indigenous people. Between 2004-05 and 2012-13, among Aboriginal people the rate of alcohol related hospitalisation increased by 37%, the rate for non-Indigenous people also increased but to a lesser degree, leading to a 43% increase in the rate difference (AIHW, 2015a).

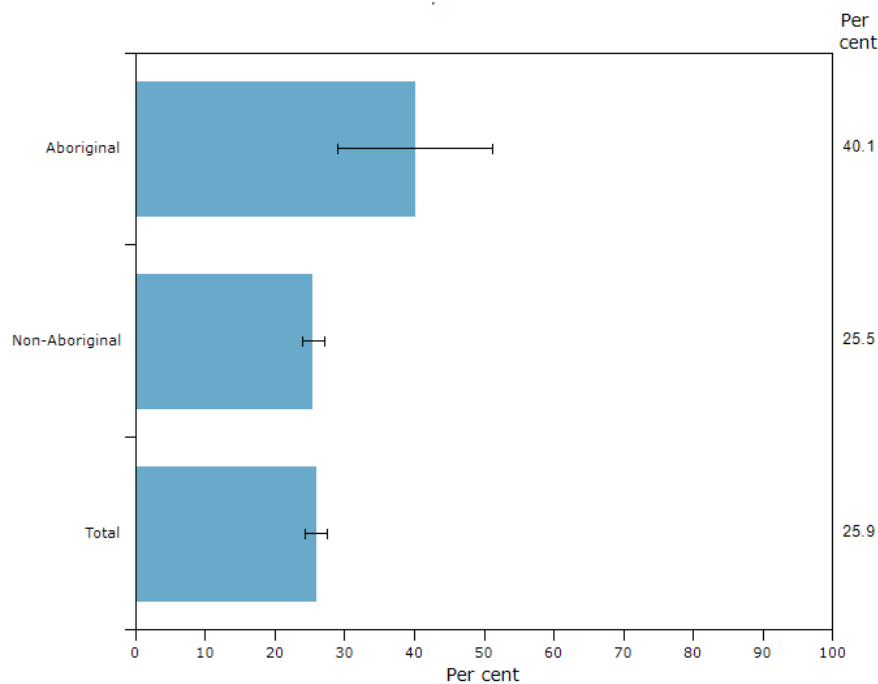
In 2008-12 in Australia<sup>2</sup>, Aboriginal people experienced an alcohol-related mortality rate of 20 per 100,000, compared to 4 per 100,000 for non-Indigenous people. Between 2003-07 and 2008-12, the alcohol-related mortality rate for Aboriginal people decreased from 28 deaths to 22 deaths per 100,000, which saw a narrowing of the gap between Aboriginal and non-Indigenous people (AIHW, 2015a).

### *New South Wales*

In NSW in 2015, 40.1% of Aboriginal adults aged 16 years+ consumed more than 2 standard alcoholic drinks on a day when they consumed alcohol, which was more than one and a half times the non-Indigenous rate (25.5%) (Figure 14). From 2001-02 to 2013-14, the rate of alcohol attributable injury hospitalisations in NSW increased in the Aboriginal population from 447.2 to 637.2 per 100,000. Hospitalisation rates for non-Indigenous people also increased during this period from 286.7 to 315.8 per 100,000. This increased the rate difference between Aboriginal people and non-Indigenous people from 160.5 to 321.4 per 100,000. This substantial widening of the gap between Aboriginal and non-Indigenous people can be seen in Figure 15 (Centre for Epidemiology and Evidence, 2016).

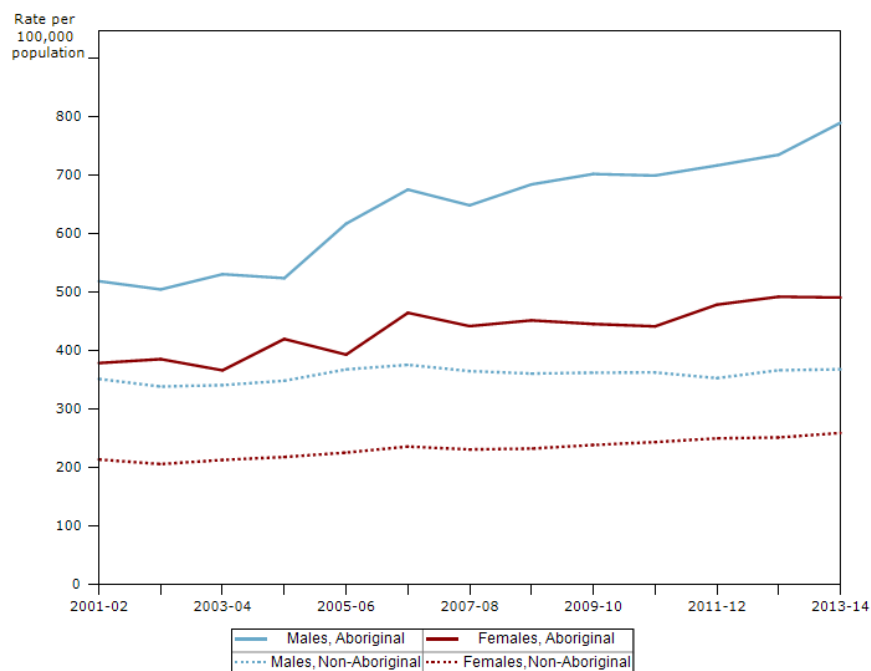
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<sup>2</sup> In NSW, QLD, WA, SA and the NT combined.



**Figure 14: Proportion of people aged 16 years and over, consuming more than 2 standard drinks on a day when consuming alcohol, by Aboriginality, NSW 2015, (Centre for Epidemiology and Evidence, 2016).**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).



**Figure 15: Alcohol attributable injury hospitalisations by Aboriginality, NSW 2001-02 to 2013-14 (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, not where they are treated.

### HNECC PHN

In accordance with findings at a state level, alcohol and other drug misuse has been identified by health professionals from across the HNECC PHN region as a particular area of need for Aboriginal people.

## Substance Use

Drug and other substance use (substance use) contributes to an increase in illness and disease, blood borne viruses, overdosing, violence, crime, accidents, injuries, and social and employment issues (SCRGSP, 2014). Substance use is associated with mental health conditions, including an increased risk of suicide, and has been linked to family and relationship breakdown (MacRae & Hoareau, 2016).

Research conducted in NSW has investigated the acceptability and accessibility of mainstream services delivered through an urban Area Health Service for Aboriginal people with alcohol or drug use disorders. Positive aspects of the service included the provision of priority appointments for new Aboriginal clients; the professional and caring nature of the service; and the collaboration with the Aboriginal Medical Service. Suggestions for improving the service included enhanced cultural sensitivity in communications; improvements to the appropriateness of the physical environment and printed materials; increased availability of Aboriginal staff members; providing peer support groups; and greater integration of health care, not only for the client, but for their family and community as well (Teasdale et al., 2008).

### *Australia*

In 2012-13 in Australia, 22% of Aboriginal people reported having used a substance within the previous 12 months, and in 2013 those aged 14 years+ were more likely to report substance use in the last 12 months (23%) than their non-Indigenous counterparts (15%) (AHMAC, 2015; Australia Indigenous Health/InfoNet, 2016). In 2012-13, the proportion of Aboriginal people using a substance in the last 12 months was higher for males (28%) than females (18%), with a similar trend observed in those who reported ever having used a substance (males 53%; females 40%) (AIHW, 2015a).

Between 2002 and 2012-13 in non-remote areas, there was a decline in the percentage of Aboriginal people that reported substance use within the previous 12 months (26% to 24%), whilst there was an increase in the percentage reporting ever having used substances (44% to 49%) (AIHW, 2015a).

In 2011-12 to 2012-13, there were 6,926 drug related hospitalisations for Aboriginal people, which was 2.5 times the rate for non-Indigenous people, with a hospitalisation rate difference of 3.2 per 1,000 (AIHW, 2015a).

In 2008-12 in Australia<sup>3</sup>, the drug induced mortality rate for Aboriginal people was 1.5 times the rate for non-Indigenous people (9.9 per 100,000 compared to 6.4 per 100,000), and was higher for Aboriginal males (11 per 100,000) than females (8.9 per 100,000) (Australia Indigenous Health/InfoNet, 2016).

### *New South Wales*

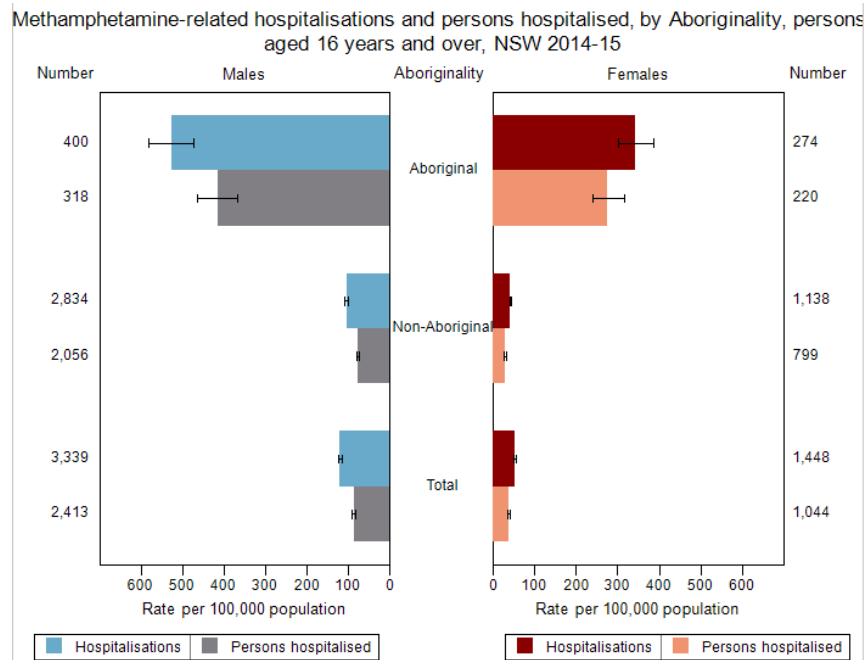
In 2012-13 in NSW, 24% of Aboriginal people aged 15 years+ reported having used a substance in the previous 12 months. As per the national trend, substance use was more common among Aboriginal males (29%) than females (18%). In 2008, substance use during pregnancy was reported by an estimated 3.9% of mothers of Aboriginal children aged 0-3 years, where at the national level the proportion was 5% (AIHW, 2015a).

In 2008-12, the drug induced mortality rate in NSW was 13 per 100,000 for Aboriginal people, and 6.2 per 100,000 for non-Indigenous people (Australia Indigenous Health/InfoNet, 2016).

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<sup>3</sup> In NSW, QLD, WA, SA, and the NT combined.

In NSW in 2014-15, Aboriginal people aged 16 years+ accounted for 14% of all patients with methamphetamine-related hospitalisations in that year. As can be seen in Figure 16, the rate of methamphetamine-related hospitalisations for Aboriginal people (431.9 per 100,000) was almost six times that of non-Indigenous people (72.8 per 100,000). Data is also available on persons hospitalised, with comparison between these two hospitalisation indicators providing insight into the number of people who have been hospitalised on multiple occasions for methamphetamine-related reasons. The rate of Aboriginal persons hospitalised (342.6 per 100,000) in 2014-15 was six and a half times that of non-Indigenous persons (52.5 per 100,000) (Centre for Epidemiology and Evidence, 2016).



**Figure 16: Rates of methamphetamine-related hospitalisations and persons hospitalised, by Aboriginality and sex, persons aged 16 years and over, NSW 2014-15 (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, not where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

### HNECC PHN

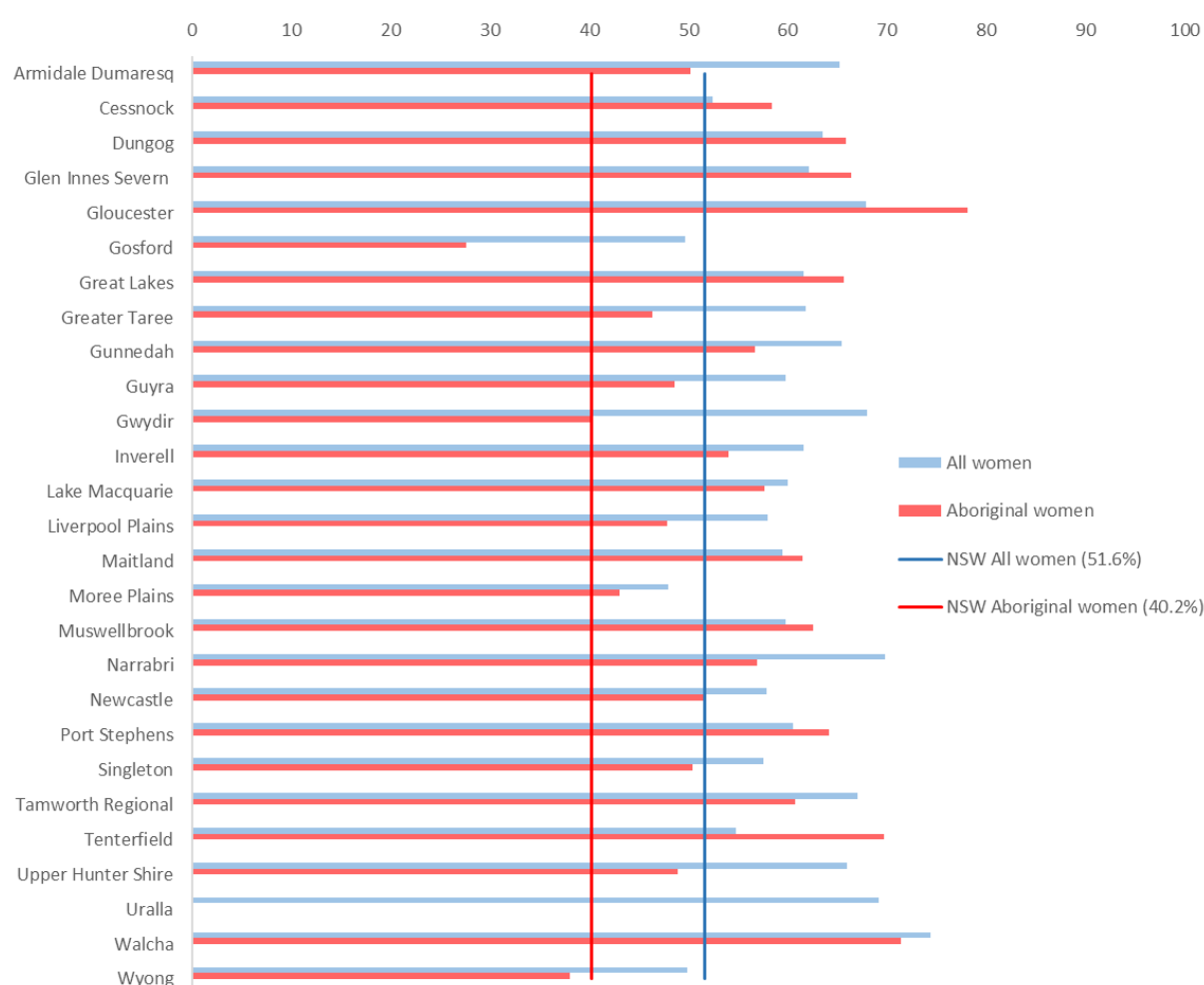
As mentioned previously, alcohol and other drug misuse has been identified by health professionals from across the HNECC PHN region as a particular area of need for Aboriginal people.

# Health Screening

## Cancer Screening

Cancer screening programs aim to reduce illness and mortality from cancer through a systematic approach to screening. In order to achieve the greatest benefit to the population from these programs, high participation rates are needed.

The breast screening participation rate for all women aged 50-69 years in the HNECC PHN region in 2014 – 2015 was 57.5% (NSW rate: 51.6%). Breast screening participation rates for Aboriginal women in this age group were lower however, at 52%<sup>4</sup> within the HNECC PHN region (NSW rate: 40.2%). As shown in Figure 17, breast screening participation rates for Aboriginal women varied by LGA across the HNECC PHN region. Highest rates of breast screening for Aboriginal women were recorded in Gloucester (78.1%), Walcha (71.4%) and Tenterfield (69.7%) LGAs. Lowest rates were recorded in Gosford (27.6%), Wyong (38.1%) and Gwydir (40.1%) LGAs (Cancer Institute NSW, 2016).



Reliable data on participation in cervical screening by Aboriginal women is unavailable as this information is sourced from pathology forms, where Indigenous status is inconsistently recorded. The available evidence however suggests that Aboriginal women are under-screened, with estimates of screening rates as much as 18% below the average for that particular region (AIHW, 2015c). Data

<sup>4</sup> In January 2017, BreastScreen NSW will update the methodology used for estimating the rate of Aboriginal participation in the BreastScreen NSW program, including back calculations for trend analysis. This change in methodology will make use of recently revised ABS ERPs and will see a reduction in Aboriginal participation rates, for example the NSW average will fall by approximately 7%.

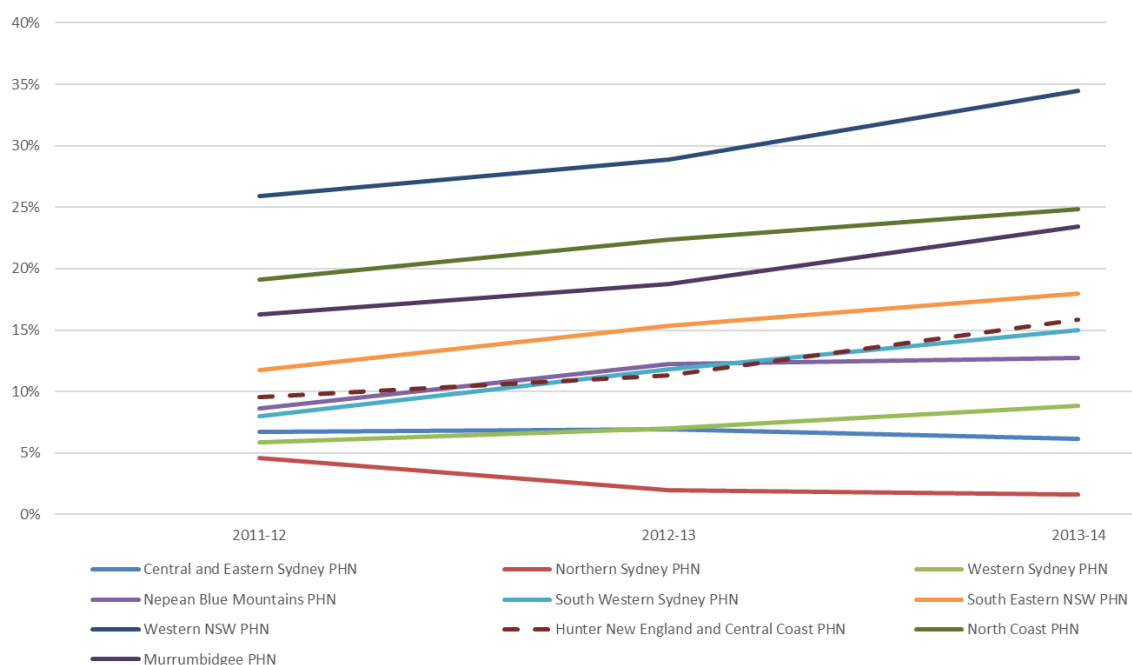
collected by HNECC through the PAT CAT tool<sup>5</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal women seen in general practices in the HNECC PHN region were 0.7 times as likely to have a record of a Pap Test as non-Indigenous women.

Information on participation in the National Bowel Cancer Screening Program by Aboriginal people is also of dubious quality as information that identifies participants as Aboriginal relies upon self-identification by way of the participant form returned with the completed FOBT. These figures are then compared against 2011 Census data to estimate participation rates (AIHW, 2015d). In 2013 to 2014, in Australia for example 0.9% of bowel screening participants identified as Indigenous, and 2.2% did not report Indigenous status, as compared to 1.5% and 4.5% in the 2011 Census respectively for the ages targeted at that time (50, 55, 60 and 65 years) (AIHW, 2015d).

## 715 Health Assessments

Aboriginal and Torres Strait Islander people are eligible for an annual health check, with Item 715 on the Medicare Benefits Schedule (MBS) designed specifically for a health assessment of a patient who is of Aboriginal or Torres Strait Islander descent. This health check was established because of the considerably higher morbidity and mortality levels in the Aboriginal population compared to the non-Indigenous population. The 715 health check is designed to support earlier detection of disease, and diagnosis and treatment of common, treatable conditions. Although use of the 715 health check has increased substantially over time, only 1 in 5 Aboriginal people in Australia had a 715 health check in 2013-14 (AIHW, 2015a).

As show in Figure 18, between 2011-12 and 2013-14, the 715 health check usage rate, based on the number of health checks claimed and the size of the Aboriginal population, varied considerably across NSW PHNs. In 2013-14 for example, this ranged from 1.7% in Northern Sydney PHN to 34.5% in Western NSW PHN, with HNECC PHN at 15.9% (AIHW, 2016b).



<sup>5</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

As shown in Figure 19, the number of 715 health assessments has increased across the HNECC PHN region from 2012 to 2016. The scale of the increase however varies by sub-region. In the Central Coast sub-region, the number of assessments has increased from 117 to 476 per quarter. In the Hunter sub-region this number has increased from 680 to 2,284, and in the New England sub-region from 774 to 1,356 (DoHS, 2016).

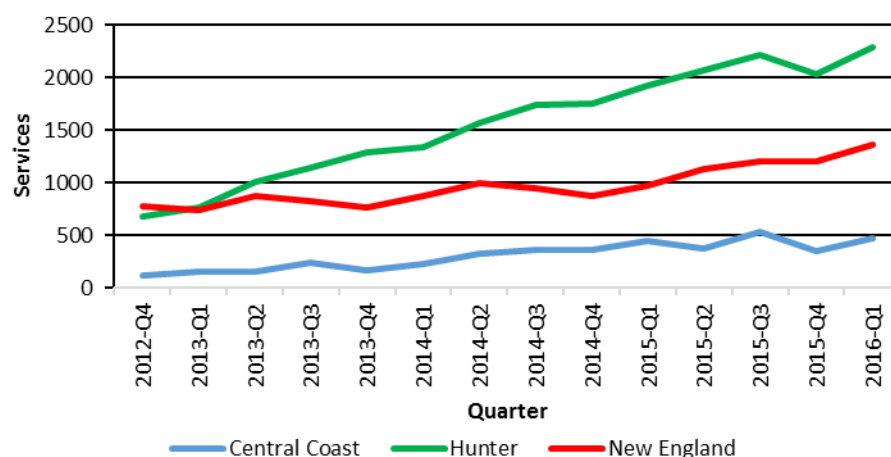
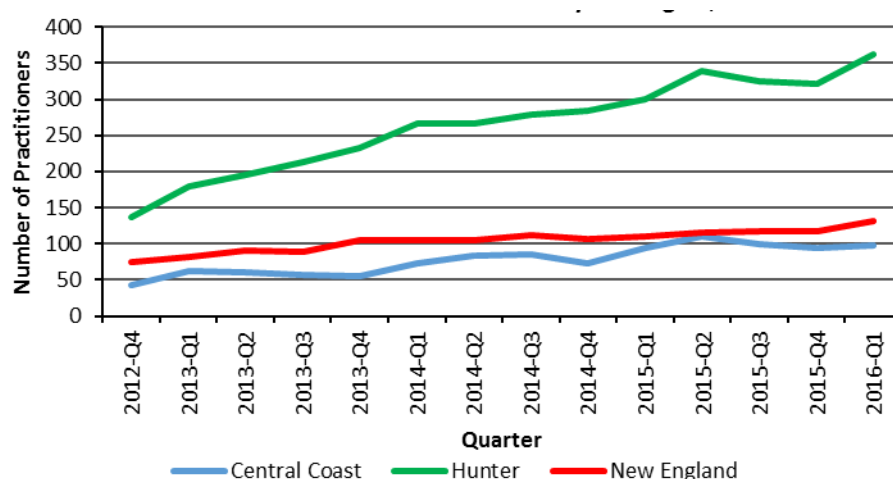


Figure 20 illustrates the number of practitioners providing MBS Item 715 Aboriginal and Torres Strait Islander Health Assessments across the HNECC PHN by sub-region between 2012 and 2016. A similar pattern can be observed as for the number of assessments being performed. The number of practitioners providing 715 health assessments has increased across the HHNECC PHN region, with more marked increases observable by sub-region. The number of practitioners performing these health assessments in the Central Coast sub-region increased from 42 per quarter to 98. In the Hunter sub-region, the number increased from 137 to 362, and in the New England sub-region increased from 74 to 132 (DoHS, 2016).



Data obtained by HNECC through the PAT CAT tool<sup>6</sup> from one quarter of general practices across the HNECC PHN region indicated that as of 31<sup>st</sup> July 2016, 26% of Aboriginal patients had record of a 715 Health Assessment. This figure was higher for patients aged 55 years and older at 30%. Further to this as of 30<sup>th</sup> June 2016, 11.03% of Aboriginal patients in the Central Coast sub-region had a 715 health assessment noted in their records, as had 22.05% in the Hunter sub-region, and 13.29% in the New England sub-region.

<sup>6</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

Stakeholders across the HNECC PHN region have flagged issues with the use of the 715 health assessment and the associated payment to practices, and in particular there are numerous instances where non-regular primary health care providers have visited a community, performed a number of health assessments and claimed the payments, but have not provided the coordination and continuity of care that patients need. Other issues raised include primary care providers not performing all of the components of the 715 health assessment, and difficulties providing continuity of care for transient populations. A suggestion made by stakeholders for improving the health outcomes for local Aboriginal communities is to provide 715 health assessments in schools.



# Child and Maternal Health

There are a number of risks or lifestyle factors that can affect the health outcomes for the mother and the child. Examples of these include risky behaviours during pregnancy such as smoking or delaying health checks, and failure to participate in childhood immunisation programs. [Health professionals in the HNECC PHN region have identified maternal health as an area of concern for Aboriginal people, and have highlighted a need for improved coordination of prenatal care between services.](#)

A study of medical records from primary health care centres across Australia found that Aboriginal women were four times more likely to miss out on screening for antenatal emotional wellbeing than non-Aboriginal women (Gausia et al., 2013).

A longitudinal study of developmental progress in urban Aboriginal children indicated that the children were mostly developing within the reference range at 12 months of age. Any differences in development appeared early in Aboriginal children, supporting the need for early intervention. Slower developmental progress was associated with exposure to problem drinking and cumulative family stress (McDonald, Comino, Knight & Webster, 2012). At 3 years of age relative strengths were seen in locomotor and self-care skills of the children, whilst delays were apparent in language, fine motor and performance skills. Slower developmental progress at this age was associated with young maternal age and single parenthood (McDonald, Webster, Knight & Comino, 2014).

**Table 3: Indicators of child and maternal health, by Aboriginality, and region, (Centre for Epidemiology and Evidence, 2016).**

Region	Smoking During Pregnancy (2015)		Low Birth Weight Babies (2015)		1 <sup>st</sup> Antenatal Visit Before 14 weeks (2015)		Preterm Births (2015)	
	Aboriginal Mothers	Non-Indigenous Mothers	Aboriginal Babies	Non-Indigenous Babies	Aboriginal Mothers	Non-Indigenous Mothers	Aboriginal Babies	Non-Indigenous Babies
<b>HNECC</b>	43%	12%	10.8%	6.5%	61%	72.5%	13%	8.7%
<b>NSW</b>	45%	7.4%	11.3%	6.4%	64.7%	64.3%	12.7%	7.7%

Region	Smoking During Pregnancy		Low Birth-Weight Babies		At Least 1 Antenatal Visit in 1 <sup>st</sup> Trimester	
	Aboriginal Women 2007-11	All Women 2009-11	Aboriginal Women 2007-11	All Women 2009-11	Aboriginal Women 2007-11	All Women 2009-11
<b>Central Coast</b>	42%	15.8%	9.9%	4.9%	73.5%	83%
<b>Hunter</b>	48.9%	16.9%	10.3%	4.7%	64.2%	77.1%
<b>New England</b>	55.1%	22.7%	11.5%	5.6%	66.6%	81.2%
<b>Australia</b>	51.7%	13.9%	11%	4.8%	50.3%	67.2%

**Table 4: Indicators of child and maternal health, by Aboriginality, and region, (NHPA, 2014).**

## Smoking During Pregnancy

Smoking during pregnancy doubles the risk of a low birth weight baby and significantly increases the risk of perinatal mortality, sudden infant death syndrome and other adverse pregnancy outcomes (DoH, 2011). Any tobacco control strategy implemented by Government, LHDs or PHNs is likely to influence rates of smoking during pregnancy, whether it be through taxes; large-scale media campaigns; or GP, mid-wife, or hospital-based interventions (Cancer Institute NSW, 2016).

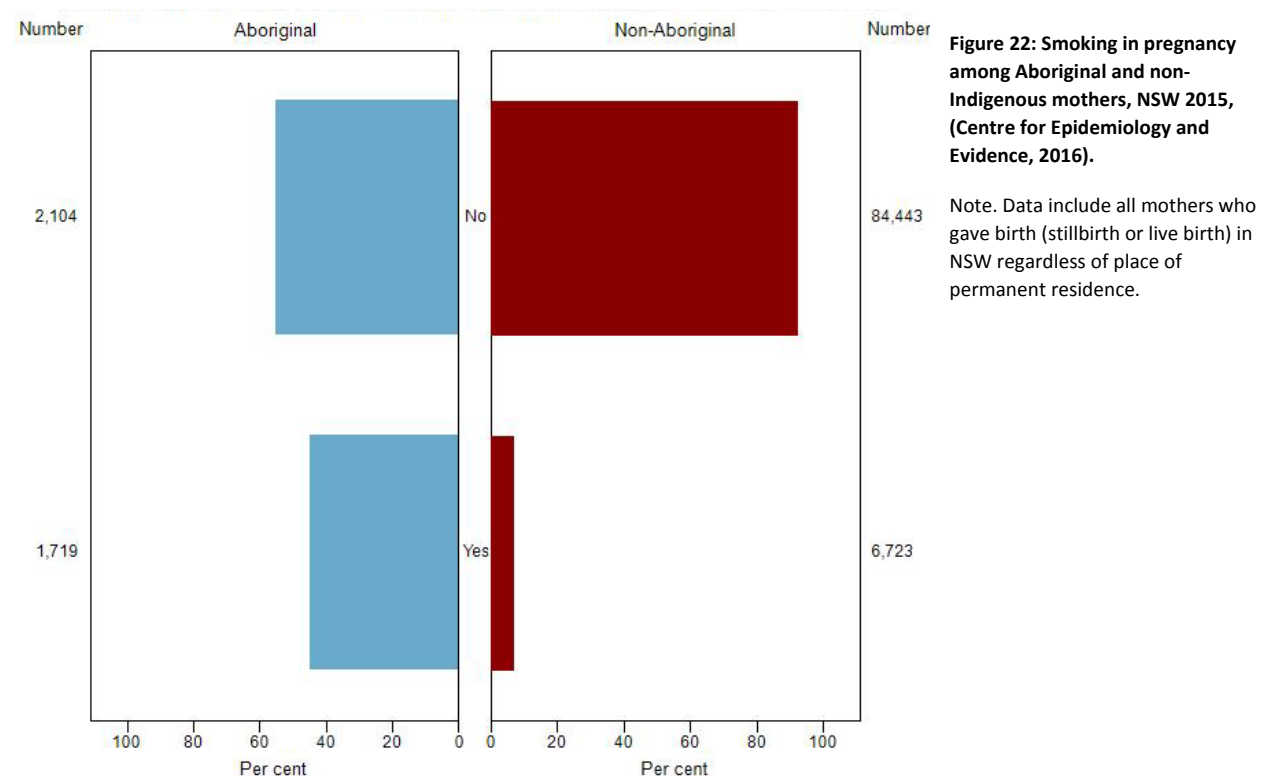
A Community Midwifery Link Service developed in suburban Sydney has been found to successfully reduce the number of Aboriginal women smoking during pregnancy. The women involved in the project reported that the service was easy to access, provided them with continuity of care and of caregiver, and fostered trusting relationships (Homer et al., 2012).

### Australia

In Australia between 2007 and 2011, 51.7% of Aboriginal women reported smoking during pregnancy, which was three and a half times that reported by all women (13.9%) between 2009 and 2011, as seen in Table 4 (NHPA, 2014).

### New South Wales

In NSW in 2015, 45% of Aboriginal mothers smoked during pregnancy, which is more than six times the non-Indigenous rate (7.4%), as can be seen in Figure 22 (Centre for Epidemiology and Evidence, 2016).



### HNECC PHN

In accordance with national trends, and as shown in Table 3, the rate of smoking during pregnancy reported by Aboriginal mothers across the HNECC PHN region (43%) in 2015 was substantially higher than that of non-Indigenous mothers (12%) (Centre for Epidemiology and Evidence, 2016). Table 4 presents data from 2007-11 and 2009-11 at a local level where the highest rate (55.1%) of smoking

during pregnancy amongst Aboriginal women in the HNECC PHN region was reported in the New England sub-region which was greater than the national rate of 51.7% (NHPA, 2014).

## Low Birth Weight Babies

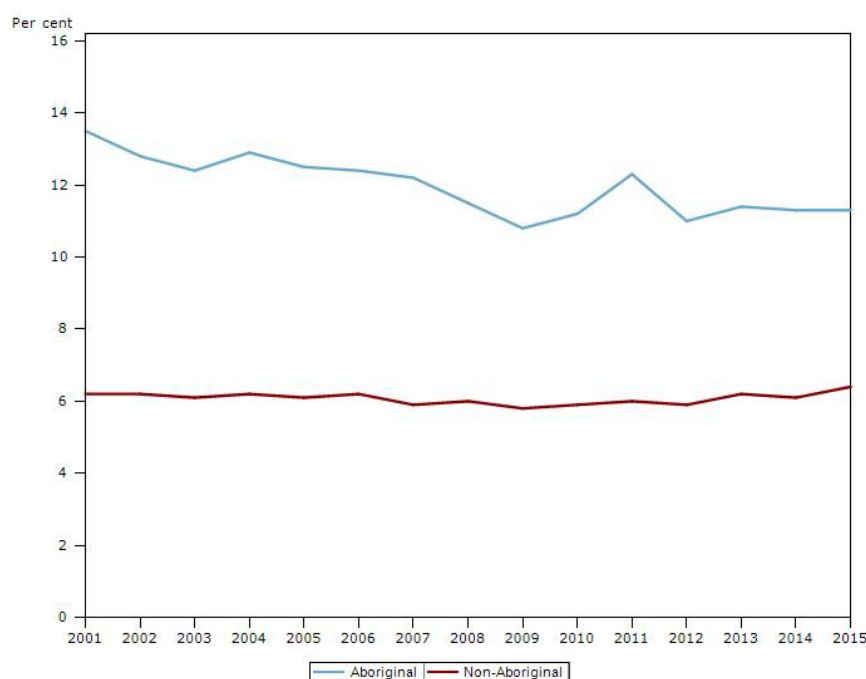
Low birth weight babies (newborns weighing less than 2,500 grams) are at a greater risk of dying during the first year of life, and are prone to ill health in childhood and into adulthood. There is some evidence that lower birth weights in Aboriginal people are associated with higher mortality from cardiovascular and renal disease in adulthood, and from pulmonary disease in both childhood and adulthood (DoH, 2011).

### Australia

In Australia between 2007 and 2011, 11% of babies born to Aboriginal women were of low birth-weight, which was more than two times higher than for all women (4.8%) between 2009 and 2011, as seen in Table 4 (NHPA, 2014).

### New South Wales

In NSW from 2001 to 2015, the prevalence of low birth weight babies born to Aboriginal mothers decreased from 13.5% to 11.3%. However, the prevalence of low birth weight babies among non-Indigenous mothers remained similar over this period from 6.2% to 6.4%. This led to a slight decrease in the gap between the Aboriginal and non-Indigenous populations, as can be seen in Figure 23 (Centre for Epidemiology and Evidence, 2016).



**Figure 23: Low birth weight babies among Aboriginal and non-Aboriginal mothers, NSW 2001 to 2015 (Centre for Epidemiology and Evidence, 2016).**

Note. Birth weight is the newborn infant's first bare weight in grams. Low birth weight is birth weight less than 2,500 grams. As Aboriginal mothers are under-reported on the Perinatal Data Collection, it is likely that the true numbers of Aboriginal mothers are substantially higher than shown.

### HNECC PHN

As shown in Table 3, in the HNECC PHN region in 2015, 10.8% of Aboriginal babies were of low birth weight, compared to 6.5% of non-Indigenous babies (Centre for Epidemiology and Evidence, 2016). Table 4 presents data from 2007-11 and 2009-11 at a local level and shows that the New England sub-region recorded the highest percentage of low birth weight babies born to Aboriginal women at 11.5% (NHPA, 2014).

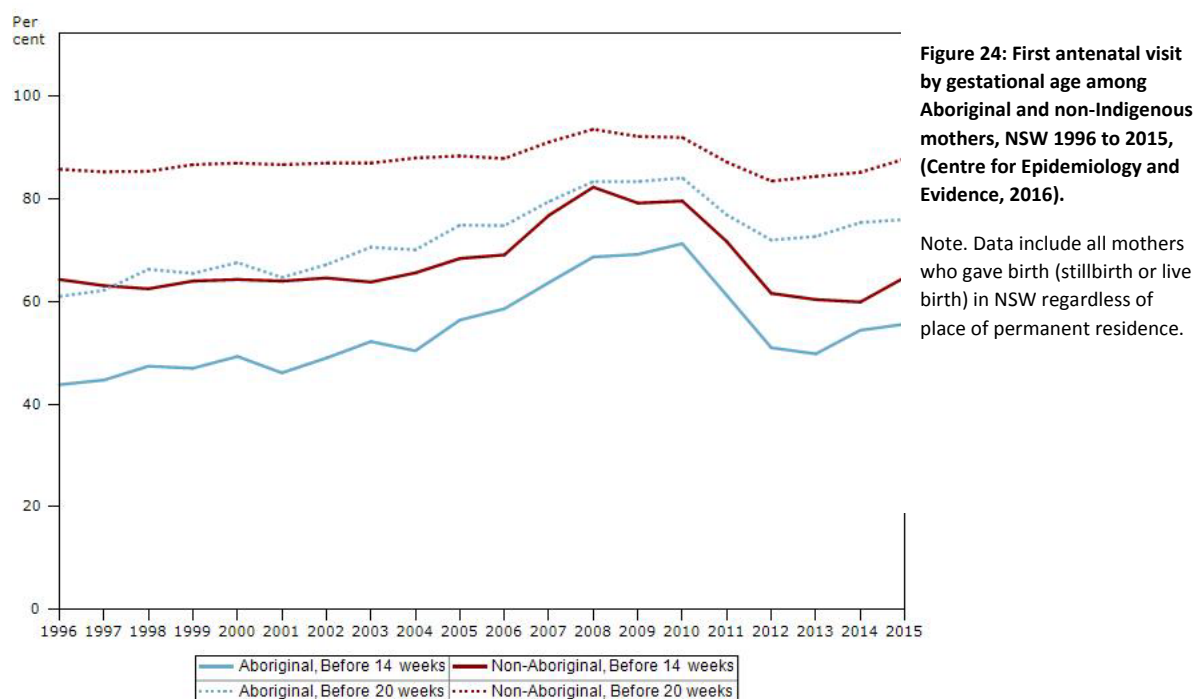
## Antenatal Visits

### Australia

In Australia between 2007 and 2011, 50.3% of Aboriginal women reported attending at least one antenatal visit in their first trimester, which was less than reported by all women between 2009 and 2011 (67.2%), as seen in Table 4 (NHPA, 2014).

### New South Wales

In NSW from 1996 to 2015, as shown in Figure 24, the proportion of Aboriginal mothers who attended their first antenatal visit before 14 weeks gestation increased from 43.8% to 55.6%, whilst that of non-Indigenous mothers has remained stable at 64.3% and 64.7%. Over this period, the proportion of Aboriginal mothers attending their first antenatal visit prior to 20 weeks gestation increased from 61% to 76%, whilst that of non-Indigenous mothers increased slightly from 85.5% to 87.8%. These trends saw a narrowing of the gap between the two populations as can be seen in Figure 24. In 2011, a change to the definition of the type of antenatal visit to be recorded against this indicator resulted in a decrease in the proportion of mothers recorded as commencing antenatal care prior to 14 weeks gestation (Centre for Epidemiology and Evidence, 2016).



### HNECC PHN

As can be seen in Table 3, in 2015 in the HNECC PHN region, 61% of Aboriginal mothers and 72.5% of non-Indigenous mothers attended their first antenatal visit before 14 weeks gestation (Centre for Epidemiology and Evidence, 2016). Table 4 presents data from 2007-11 and 2009-11 at a local level, when the Hunter sub-region reported the lowest rate of antenatal visits in the first trimester for Aboriginal women across the HNECC PHN region (NHPA, 2014).

## Childhood Immunisation

Table 5 shows the percentages of Aboriginal children and all children who were fully immunised at 1, 2 and 5 years in 2014-15, in the HNECC PHN region, in NSW and in Australia. Whilst the rates of immunisation for 1 and 2 year old Aboriginal children across the HNECC PHN region were lower than the average for all children, the rates were still consistently higher than the state and national averages. The rates of immunisation for 5 year old Aboriginal children was higher than the average for 5 year old children across all regions (ACIR, 2015).

Children Fully Immunised 2014-15						
Region	1 Year		2 Years		5 Years	
	Aboriginal children	All children	Aboriginal children	All children	Aboriginal children	All children
<b>HNECC PHN</b>	92.4%	93.1%	89.9%	91.3%	95.7%	94.8%
<b>NSW</b>	91.2%	92.2%	88.5%	89.1%	95.3%	93.0%
<b>Australia</b>	88.7%	92.3%	86.2%	89.3%	93.9%	92.6%

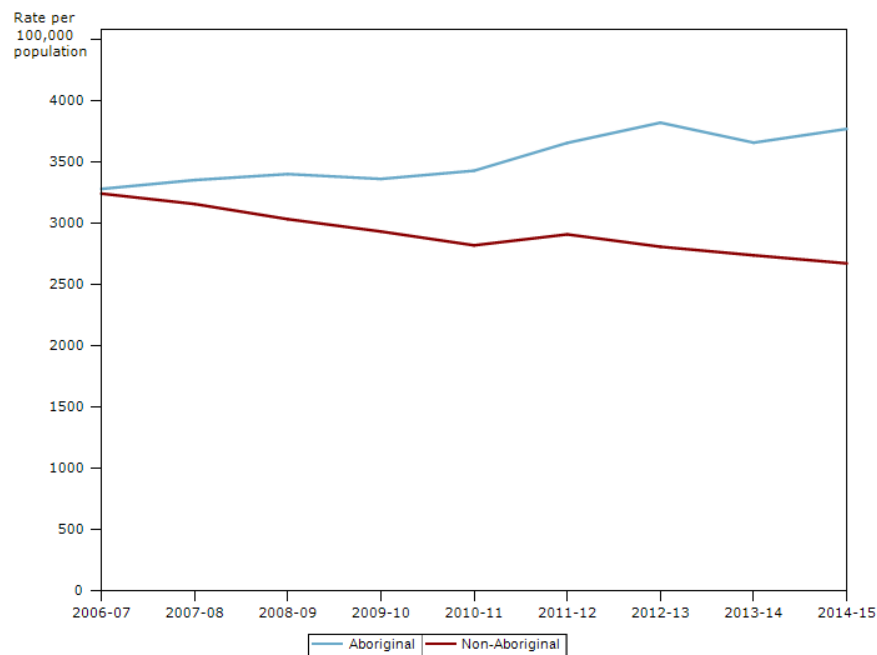
**Table 5: Proportion of children fully immunised, Aboriginal children and all children, by age and region, 2014-15, (ACIR, 2015).**

Data collected by HNECC through the PAT CAT tool<sup>7</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal children seen in general practices within the HNECC PHN region were 0.9 times as likely to be recorded as immunised as non-Indigenous children.

<sup>7</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

## Maternal, Neonatal and Congenital Hospitalisations

From 2006-07 to 2014-15, maternal, neonatal and congenital hospitalisations in the HNECC PHN region increased in the Aboriginal population from 3,284.6 to 3,774.5 per 100,000. In contrast, hospitalisations for non-Indigenous people decreased over this period from 3,246.7 to 2,677.3 per 100,000. This has increased the rate difference between Aboriginal people and non-Indigenous people from 37.9 to 1,097.2 per 100,000, this substantially widening of the gap is clearly displayed in Figure 24 (Centre for Epidemiology and Evidence, 2016).



## Self-assessed Health Status

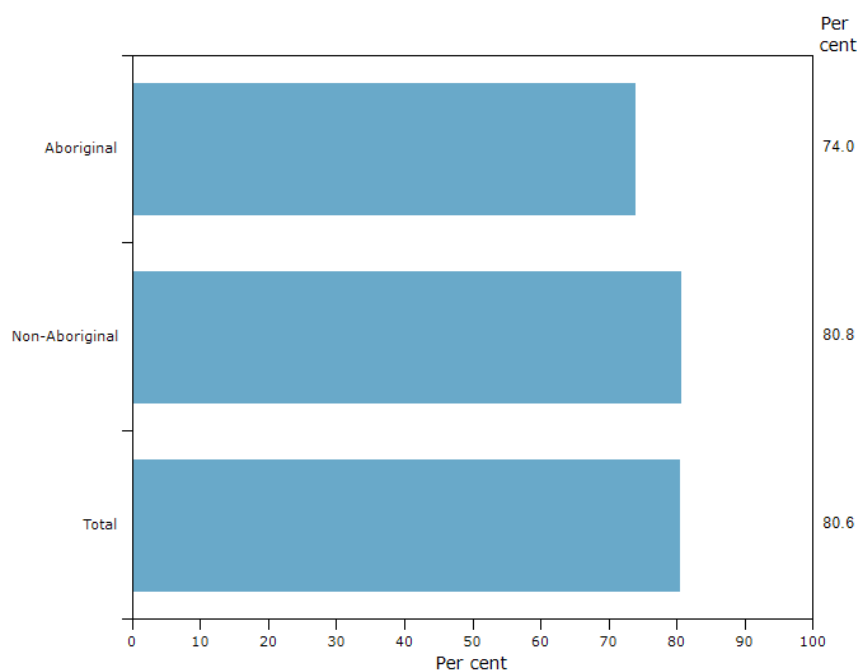
Self-assessed health status is associated with other measures of health such as long-term health conditions and disability. Longitudinal studies worldwide have consistently shown that self-rated health is a strong and independent predictor of subsequent illness and premature death. There are inconsistencies in the way Aboriginal people rate their health status however, particularly for those who do not use English as their main language. Many Aboriginal people have rated their health highly despite having significant health problems. Self-assessed health status therefore needs to be interpreted with some caution in this context (AHMAC, 2015).

### Australia

In Australia in 2012-13, 39% of Aboriginal people aged 15 years+ rated their health as very good or excellent, 37% rated their health as good, and 24% rated their health as poor or fair. Aboriginal people were twice as likely as non-Indigenous people to rate their health as poor or fair (AHMAC, 2015).

### NSW

In NSW in 2014, 74% of Aboriginal people aged 16 years+ rated their health as excellent, very good, or good, which was less than the non-Indigenous population (80.8%), as can be seen in Figure 25 (Centre for Epidemiology and Evidence, 2016).



**Figure 25: Excellent, very good or good self-rated health by Aboriginality, persons aged 16 years and over, NSW 2014** (Centre for Epidemiology and Evidence, 2016).

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

### HNECC PHN

In the HNECC PHN region in 2012-13, 42.3% of Aboriginal people aged 15 years+ rated their health as very good or excellent, 36.8% rated their health as good, and 21% rated their health as poor or fair (ABS, 2015).

## Long-term Health Conditions

An extensive study of the burden of disease and injury of Australian Aboriginal people found that if the Aboriginal population experienced mortality and disability at a level equal to that of the Australian population as a whole, their total burden of disease would have been reduced by 59%. Non-communicable diseases accounted for 70% of this sizeable gap between the two populations, with cardiovascular diseases contributing the most (23%), followed by diabetes (12%), mental disorders (12%), and chronic respiratory disease (9%) (Vos, Barker, Stanley & Lopez, 2007).

The 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey found that 67% of Aboriginal people reported having at least 1 long-term health condition, which was a similar proportion to non-Indigenous people. 33% of Aboriginal people reported having 3 or more long-term health conditions. The most common long-term health conditions reported by Aboriginal people were: eye and vision problems (33%); respiratory disease (31%); musculoskeletal disease (20%); and ear and hearing problems (12%). As shown in Table 6, the prevalence of these common long-term conditions varied by age (AIHW, 2015b).

In the HNECC PHN region at this time, 73% of Aboriginal people reported having a long-term health condition, with 21.2% having one condition and 51.9% having two or more conditions (ABS, 2015). [Health professionals from across the HNECC PHN region have highlighted chronic disease as an area of need for Aboriginal people.](#)

Rank	0-14	15-24	25-34	35-44	45-54	55+	Total
1st	Respiratory diseases 20.9%	Respiratory diseases 29.9%	Respiratory diseases 36.9%	Eye diseases and vision problems 46.7%	Eye diseases and vision problems 87.2%	Eye diseases and vision problems 92.4%	Eye diseases and vision problems 33.4%
2nd	Eye diseases and vision problems 8.8%	Eye diseases and vision problems 22.0%	Eye diseases and vision problems 27.4%	Respiratory diseases 39.8%	Musculoskeletal diseases 47.0%	Musculoskeletal diseases 59.8%	Respiratory diseases 31.0%
3rd	Ear diseases and hearing problems 7.1%	Musculoskeletal diseases 12.7%	Musculoskeletal diseases 21.8%	Musculoskeletal diseases 35.3%	Respiratory diseases 42.6%	Endocrine, nutritional and metabolic diseases 47.4%	Musculoskeletal diseases 19.9%
4th	Skin and subcutaneous tissue diseases 3.3%	Ear diseases and hearing problems 8.3%	Nervous system diseases 13.7%	Cardiovascular disease 18.9%	Endocrine, nutritional and metabolic diseases 31.2%	Cardiovascular disease 41.9%	Ear diseases and hearing problems 12.3%
5th	Nervous system diseases 2.6%	Nervous system diseases 8.3%	Cardiovascular disease 12.2%	Endocrine, nutritional and metabolic diseases 16.5%	Cardiovascular disease 28.2%	Respiratory diseases 40.7%	Cardiovascular disease 12.0%

**Table 6: Age-specific prevalence of leading long-term health conditions for Aboriginal people, Australia, 2012-13.**

Source: AIHW, 2015b

A study conducted in an urban Aboriginal Community Controlled Health Service with a large sample of patients found that high proportions of people had not been screened within the recommended guidelines for diabetes (24%), cholesterol (27%), blood pressure (40%), cervical cancer (47%) and breast cancer (54%). These patients were aware of, and concerned about, their risk status and health conditions, and wanted information and advice from their healthcare provider on health risks and chronic disease (Stewart, Sanson-Fisher, Eades & Fitzgerald, 2012). Further research indicates that successful chronic disease care requires adequate Aboriginal community consultation and participation, the use of local knowledge, strong leadership, shared responsibilities, sustainable resources and integrated data and systems (Hayman, 2010; Liaw et al., 2011).



## Respiratory Disease

Respiratory disease includes conditions such as asthma, COPD (chronic obstructive pulmonary disease, comprising chronic bronchitis and emphysema), pneumonia and invasive pneumococcal disease. In Australia, Aboriginal people experience much greater mortality and morbidity from respiratory disease than non-Indigenous people (Vos et al., 2007).

### *Australia*

In 2012-13 in Australia, 30% of Aboriginal people, an estimated 197,700 people, reported suffering a long-term respiratory disease and were 1.2 times as likely as non-Indigenous people to do so. 18% of Aboriginal people indicated that they had asthma and 4.1% reported that they had COPD. Aboriginal people were 1.9 times as likely to report asthma and 2.5 times as likely to report COPD as non-Indigenous people (AIHW, 2015a, 2015b).

In 2012-13, respiratory diseases accounted for 5.4% of hospitalisations of Aboriginal people. From 2011-12 to 2012-13, there were 42,209 hospitalisations for respiratory disease for Aboriginal people who were 2.4 times as likely to be hospitalised due to respiratory disease compared to non-Indigenous people (39 per 1,000 and 17 per 1,000 respectively) (AHMAC, 2015; AIHW, 2015a). Amongst Aboriginal people over this period, children aged 0-4 years experienced the second highest respiratory disease hospitalisation rate (79 per 1,000), whilst among non-Indigenous people, children aged 0-4 years had the highest respiratory disease hospitalisation rate (46 per 1,000) (AHMAC, 2015). In Australia<sup>8</sup> from 2004-05 to 2012-13, the rate of hospitalisations for respiratory disease for Aboriginal people increased from 36 to 40 per 1,000. The difference between the rates for Aboriginal and non-Indigenous people increased by 24% from 20 to 23 per 1,000 (AIHW, 2015a).

In Australia<sup>9</sup> in 2013, the mortality rate caused by respiratory disease for Aboriginal people was 2.0 times that of non-Indigenous people (Australian Indigenous HealthInfoNet, 2016). Between 1998 and 2012, there was a significant decline in the mortality rate due to respiratory disease for Aboriginal people (27%) and in the gap between Aboriginal people and non-Indigenous people (40%), with much of the decline occurring between 1998 and 2006 (AIHW, 2015a).

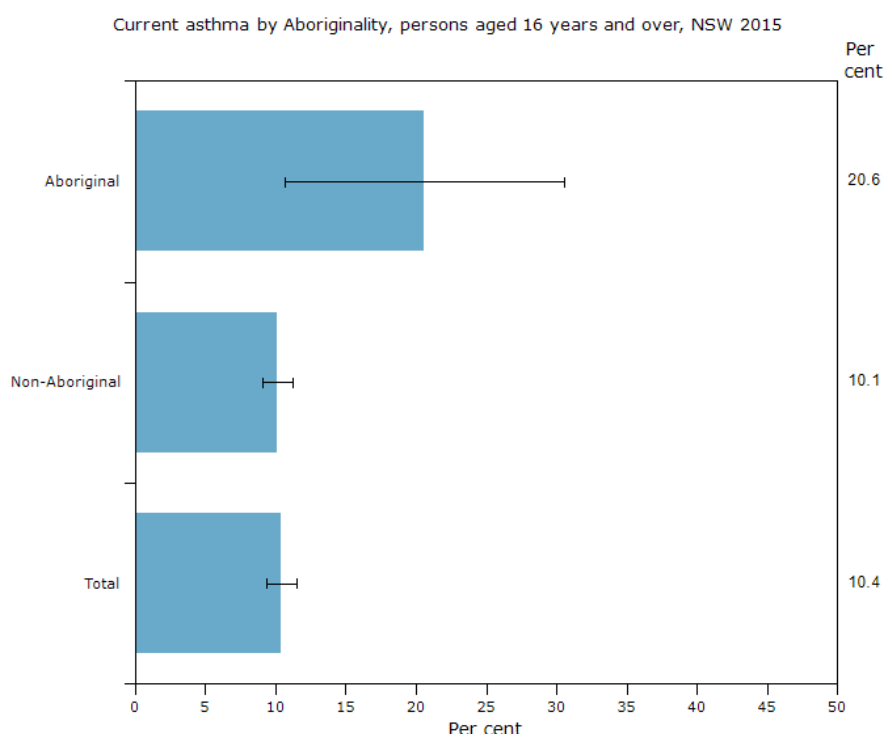
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<sup>8</sup> In NSW, VIC, QLD, WA, SA and the NT combined.

<sup>9</sup> In NSW, QLD, SA, WA and the NT combined.

## New South Wales

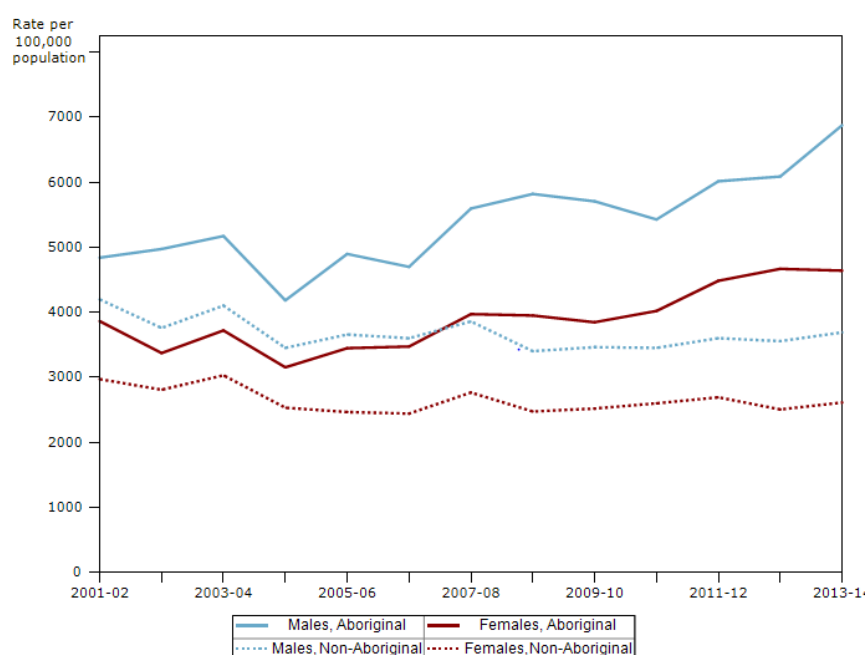
In NSW in 2015, 20.6% of Aboriginal people aged 16 years+ reported having asthma, which was more than two times the non-Indigenous rate (10.1%), as can be seen in Figure 26 (Centre for Epidemiology and Evidence, 2016).



**Figure 26: Current asthma by Aboriginality, persons aged 16 years and over, NSW 2015 (Centre for Epidemiology and Evidence, 2016).**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

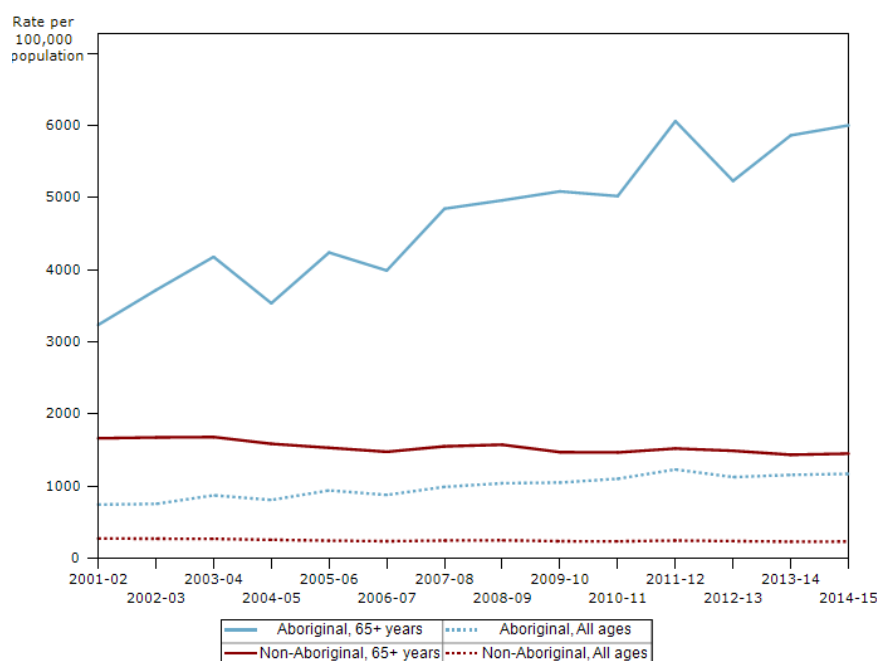
In NSW from 2001-02 to 2013-14, the rate of acute respiratory infection hospitalisations increased in the Aboriginal population aged 0-4 years from 4,366.6 to 5,784.5 per 100,000. Hospitalisation rates for non-Indigenous people also increased over this period from 3,600.1 to 3,165.3. This increased the rate difference between Aboriginal people and non-Indigenous people from 766.5 to 2,619.2 per 100,000; this substantially widening of the gap can be seen in Figure 27 (Centre for Epidemiology and Evidence, 2016).



**Figure 27: Acute respiratory infection hospitalisation rates by Aboriginality and sex, persons aged 0-4 years, NSW 2001-02 to 2013-14, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, rather than where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

In NSW from 2001-02 to 2014-15, the rate of chronic obstructive pulmonary disease hospitalisations increased in the Aboriginal population aged 65 years+ from 3,236.7 to 6,003.0 per 100,000. In contrast, the rate of hospitalisations for non-Indigenous people aged 65 years+ decreased from 1,664.2 to 1,452.0 per 100,000. This has increased the rate difference between Aboriginal people and non-Indigenous people aged 65 years+ from 1,572.5 to 4,551 per 100,000. During the same period, chronic obstructive disease hospitalisations increased in the Aboriginal population of all ages from 745.6 to 1,171.3 per 100,000. In contrast, hospitalisations for non-Indigenous people of all ages decreased from 274.4 to 232.7 per 100,000. This increased the rate difference between Aboriginal and non-Indigenous people of all ages from 471.2 to 938.6 per 100,000, this substantial widening of the gap is clearly displayed in Figure 28 (Centre for Epidemiology and Evidence, 2016).



**Figure 28: Chronic obstructive pulmonary disease hospitalisation rates, by Aboriginality, persons of all ages and aged 65 years and over, NSW 2001-02 to 2014-15 (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, rather than where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

In 2008-12, there were 289 deaths from respiratory diseases for Aboriginal people, at a rate of 89 per 100,000 compared with 51 per 100,000 for non-Indigenous people (AIHW, 2015a).

### HNECC PHN

In the HNECC PHN region in 2012-13, 22.6% of Aboriginal people reported that they had asthma (ABS, 2015).

Data collected by HNECC through the PAT CAT tool<sup>10</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal patients of general practice in the HNECC PHN region were 1.3 times as likely to have a diagnosis of asthma, and 1.2 times as likely to have a diagnosis of COPD as non-Indigenous patients.

<sup>10</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

## Circulatory Disease

Circulatory disease, also known as cardiovascular disease, encompasses all diseases or conditions of the heart and blood vessels. Whilst mortality from circulatory disease has declined in Australia recently due to a reduction in smoking rates, and improvements in the treatment and management of some conditions, the increase in rates of obesity and diabetes may reverse this trend. Circulatory disease is thought to account for 17% of the burden of disease experienced by Aboriginal people, and 25% of premature mortality (AHMAC, 2015; Australian Indigenous Health*InfoNet*, 2016; Vos et al. 2007).

Focus group research into the management of coronary heart disease in Aboriginal patients found that psychosocial factors, health system limitations, inconsistent medication use and a lack of awareness of signs and symptoms of the disease were barriers to disease management, whilst support from family and the provision of education in a culturally appropriate manner promoted disease management. Factors that improved delivery of care to this group of patients included: best-practice follow-up systems; regular patient engagement; improvement in the use of enhanced primary care items through training, software and practice nurse involvement; and enhanced communication and follow-up between tertiary, secondary and primary health care services (Govil et al., 2014).

### Australia

In Australia in 2012-13, 13% of Aboriginal people aged 2 years+ reported having a circulatory disease, which was 1.2 times that of non-Indigenous people. Hypertensive heart disease was the most common circulatory condition, reported by 5.8% of Aboriginal people, followed by heart, stroke and vascular diseases reported by 4% of Aboriginal people (AIHW 2015a; Australian Indigenous Health*InfoNet*, 2016).

In 2008-13, cardiovascular disease accounted for 8.1% of all problems managed by GPs for Aboriginal patients (AIHW, 2015b).

In 2013-14, hospitalisation rates for circulatory disease for Aboriginal people were almost double those of non-Indigenous people (31 and 18 per 1,000 respectively) (Australian Indigenous Health*InfoNet*, 2016). In Australia<sup>11</sup> from 2004-05 to 2012-13, the hospitalisation rate for Aboriginal people with circulatory disease increased from 28 to 32 per 1,000, which saw a widening of the gap between Aboriginal and non-Indigenous people (AIHW, 2015a).

In 2013, circulatory disease was the leading cause of death for Aboriginal people accounting for 636, or 24% of, deaths. Ischaemic heart disease accounted for the greatest number of these deaths (321) followed by cerebrovascular disease (122), with the mortality rate for Aboriginal people from these two causes 1.6 times that of non-Indigenous people (Australian Indigenous Health*InfoNet*, 2016). In Australia<sup>12</sup> between 1998 and 2012, the mortality rate for Aboriginal people from circulatory disease dropped from 462 to 283 per 100,000 and the rate for non-Indigenous people dropped from 292 to 175 per 100,000, which led to a narrowing of the gap between the two populations (AIHW, 2015a).

### New South Wales

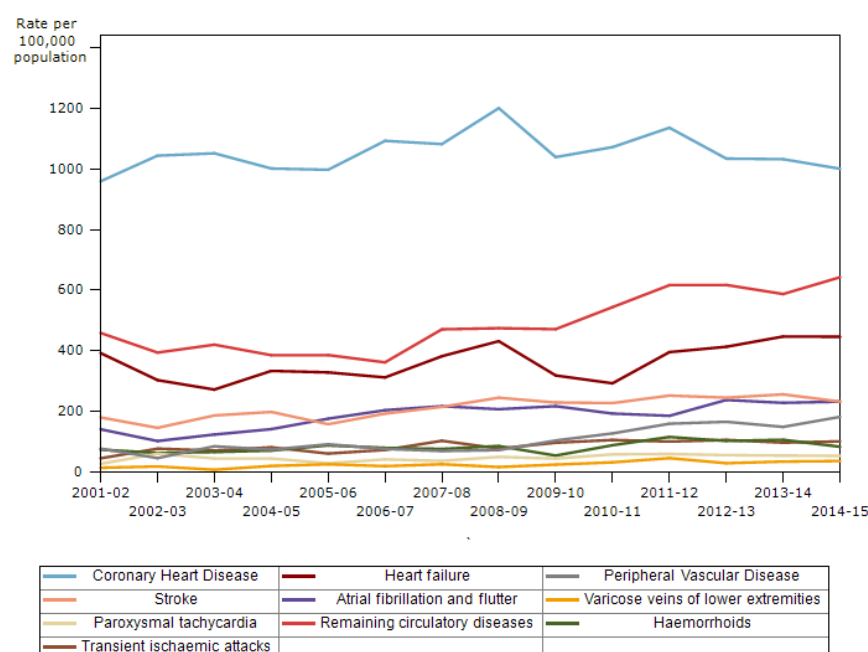
In 2012-13 in NSW, 13% of Aboriginal people aged 2 years+ reported suffering a circulatory condition, with Aboriginal people 1.2 times as likely to have a circulatory condition as non-Indigenous people (AIHW, 2015a).

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<sup>11</sup> In NSW, VIC, QLD, WA, SA and the NT combined.

<sup>12</sup> In NSW, QLD, WA, SA and the NT combined.

In NSW from 2001-02 to 2014-15, rates of circulatory disease hospitalisations increased in the Aboriginal population from 2,252.9 to 2,829.3 per 100,000. As shown in Figure 29, during this period, coronary heart disease, other (remaining) circulatory diseases, and heart failure were consistently responsible for the three highest rates of circulatory disease hospitalisations for Aboriginal people. Over this period, the rate of hospitalisations for Aboriginal people for coronary heart disease increased from 959.3 to 1,000.8 per 100,000, whilst those for other (remaining) circulatory diseases increased from 459.1 to 642.9 per 100,000, and those for heart failure increased from 392.7 to 446.7 per 100,000 (Centre for Epidemiology and Evidence, 2016).



**Figure 29: Rates of circulatory disease hospitalisations for Aboriginal people, by disease type, NSW 2001-02 to 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, rather than where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

In 2008-12, there were 890 deaths of Aboriginal people caused by circulatory disease, at a rate of 256 per 100,000, compared to 194 per 100,000 for non-Indigenous people. Between 1998 and 2012, the mortality rate from circulatory disease among Aboriginal people decreased from 337 to 247 per 100,000. A similar decrease was also seen among non-Indigenous people, from 292 to 174 per 100,000 (AIHW, 2015a).

### HNECC PHN

Data collected by HNECC through the PAT CAT tool<sup>13</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal patients of general practices in the HNECC PHN region were 0.8 times as likely to have a diagnosis of coronary heart disease recorded as non-Indigenous patients.

<sup>13</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

## Diabetes

Diabetes mellitus is a chronic condition that significantly affects the health of the population and if undiagnosed or poorly managed, can result in a range of complications, including serious damage to nerves and blood vessels, coronary heart disease, stroke, kidney failure, limb amputation or blindness (ABS, 2012a).

Research into the care of Aboriginal people with Type II Diabetes revealed that key factors in facilitating good care include: clear definitions of staff roles in the management of diabetes; involvement of Aboriginal Health Workers in patient care; the implementation of efficient recall systems; and coordination of allied health services (Stoneman, Atkinson, Davey & Marley, 2014).

### *Australia*

In 2012-13 in Australia, 4.7% of Aboriginal adults were at a high risk of developing diabetes, with Aboriginal adults 1.8 times as likely to be at a high risk of diabetes as non-Indigenous adults. 11% of Aboriginal adults had diabetes, were 3.3 times as likely to have diabetes as non-Indigenous adults and were also twice as likely to have undiagnosed diabetes (AHMAC, 2015; AIHW, 2015b).

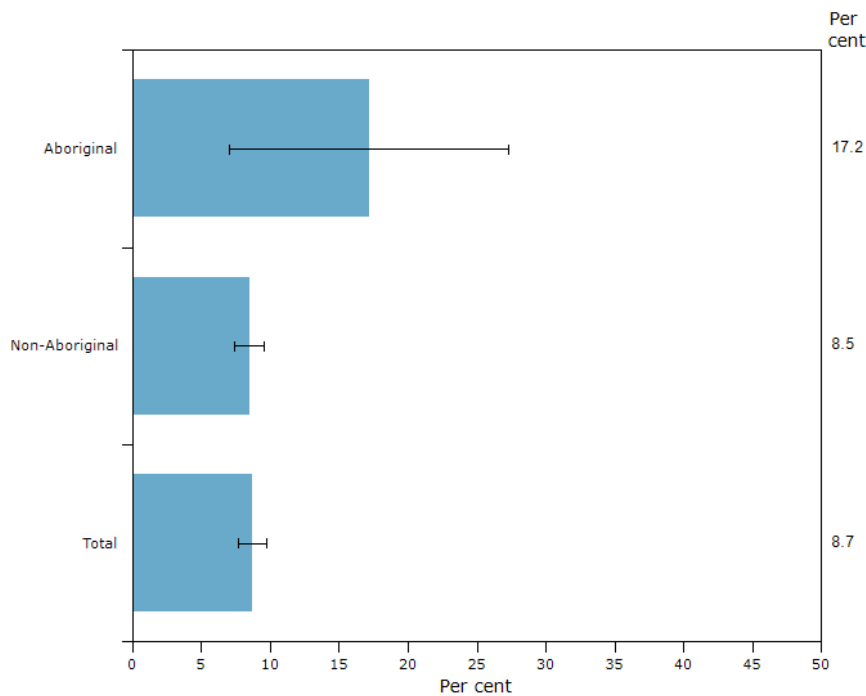
In 2008-09 to 2012-13, diabetes was managed at a rate of 108 per 1,000 GP encounters among Aboriginal people, which was 2.8 times that of non-Indigenous patients (38 per 1,000) (AIHW, 2015a).

In 2012-13, Aboriginal people were hospitalised for diabetes at 4 times the rate for non-Indigenous people, and there was a noticeable gender disparity with males and females hospitalised at 3.5 and 4.7 times the rate for non-Indigenous males and females respectively (Australian Indigenous HealthInfoNet, 2016).

In 2008-12, after circulatory disease, diabetes was the next leading cause of the mortality gap between Aboriginal and non-Indigenous people, accounting for 8% of the deaths of Aboriginal people, with a mortality rate 6 times that of non-Indigenous people (AIHW, 2015a; Australian Indigenous HealthInfoNet, 2016).

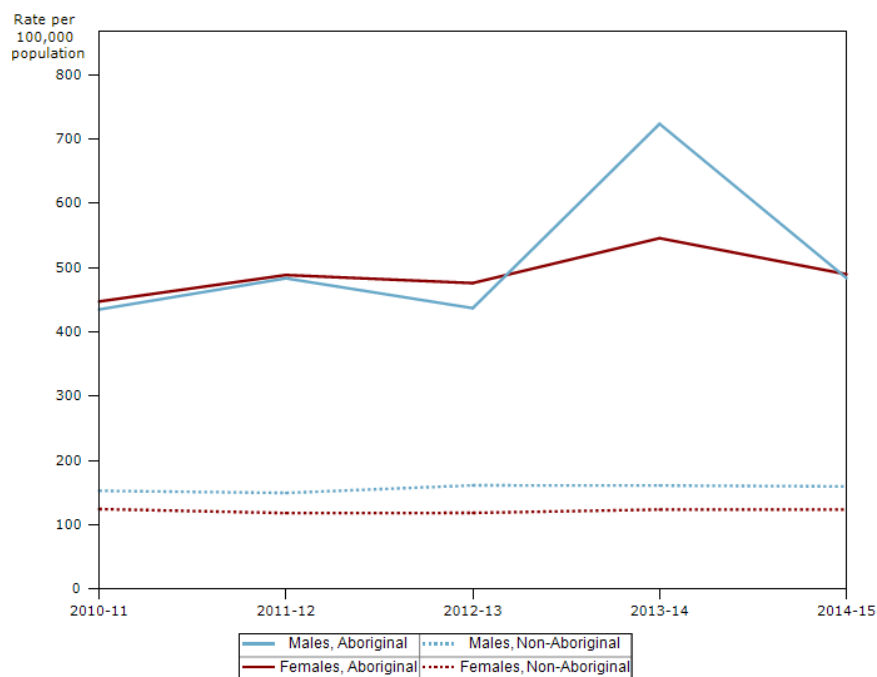
### *New South Wales*

In NSW in 2015, 17.2% of Aboriginal adults aged 16 years+ had diabetes or high blood glucose, more than two times the non-Indigenous rate (8.5%) as seen in Figure 30. From 2010-11 to 2014-15, the rate of diabetes hospitalisations increased in the Aboriginal population from 442.7 to 488.4 per 100,000. There was a slight increase in hospitalisations for non-Indigenous people over this period from 137.5 to 140.5 per 100,000, which saw an increase in the rate difference between Aboriginal people and non-Indigenous people from 305.2 to 347.9 per 100,000. This substantial widening of the gap between Aboriginal and non-Indigenous people can be seen in Figure 31 (Centre for Epidemiology and Evidence, 2016).



**Figure 30: Proportion of people aged 16 years+ with diabetes or high blood glucose by Aboriginality, NSW 2015, (Centre for Epidemiology and Evidence, 2016).**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).



**Figure 31: Rates of hospitalisations for diabetes by Aboriginality and sex, NSW 2010-11 to 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, rather than where they are treated. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

### HNECC PHN

Data collected by HNECC through the PAT CAT tool<sup>14</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal patients of general practices in the HNECC PHN region were 1.2 times as likely to have a diagnosis of Type II Diabetes recorded as non-Indigenous patients. In accordance with the data, health professionals in the HNECC PHN region have identified diabetes as a health need for Aboriginal people.

<sup>14</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

## Kidney Disease

Kidney disease can be acute or chronic in nature, and if the kidneys are unable to function at all (end stage kidney disease or kidney failure) this can lead to death unless the person undertakes kidney replacement therapy (regular kidney dialysis or receives a kidney transplant). Kidney failure has been estimated to account for 5% of the burden of disease experienced by Aboriginal people in Australia. Kidney transplants are less common amongst Aboriginal people than non-Indigenous people, with most undertaking dialysis which has a substantial impact on quality of life and wellbeing (AHMAC, 2015).

Research into the experiences of Aboriginal people undergoing haemodialysis has revealed some important considerations for providers of this service, with patients and health care providers calling for service redesign to meet the needs of this cohort (Rix, Barclay, Stirling, Tong & Wilson, 2014, 2015). Improved access to early screening has been identified as a priority; along with locally relevant programmes to educate young Aboriginal people about their risk factors; and more culturally accommodating family-centred healthcare systems. Participants reported receiving little or inadequate education prior to the start of haemodialysis, they were unable to understand information given to them, and felt overwhelmed by medical terms but were reluctant to ask questions. Most participants felt dissatisfied with current services, with a preference for home haemodialysis supported by renal nurses. Dissatisfaction was highest with tertiary units, with smaller satellite units considered more welcoming and conducive to the development of supportive relationships with staff and other patients. Participants perceived a lack of cultural awareness among renal staff, with reports of staff showing little understanding of cultural issues, including patients' reasons for prioritising family commitments over their treatment. Others patients felt disrespected, ignored or discriminated against because of their race. People dialysing at a unit with access to an Aboriginal support person however felt understood and supported. Improving the cultural competence of staff would reduce patients' fear of mainstream services and improve the relationship of Aboriginal people with health systems. Family has been consistently identified as a key protective factor for Aboriginal people undergoing haemodialysis (Rix, Barclay, Stirling, Tong & Wilson, 2014, 2015).

### *Australia*

In 2012-13 in Australia, 18% of Aboriginal adults showed signs of kidney disease, of which 11% reported having a diagnosis of chronic kidney disease, which was 3.7 times that of non-Indigenous people (ABS, 2014; AHMAC, 2015). Evidence of kidney disease was found to be associated with diabetes, hypertension, and obesity. As illustrated in Figure 32, indicators of kidney disease began at a much younger age in Aboriginal people compared to non-Indigenous people, being increasingly prevalent from the age of 18 years compared to 55 years in non-Indigenous people (AHMAC, 2015).



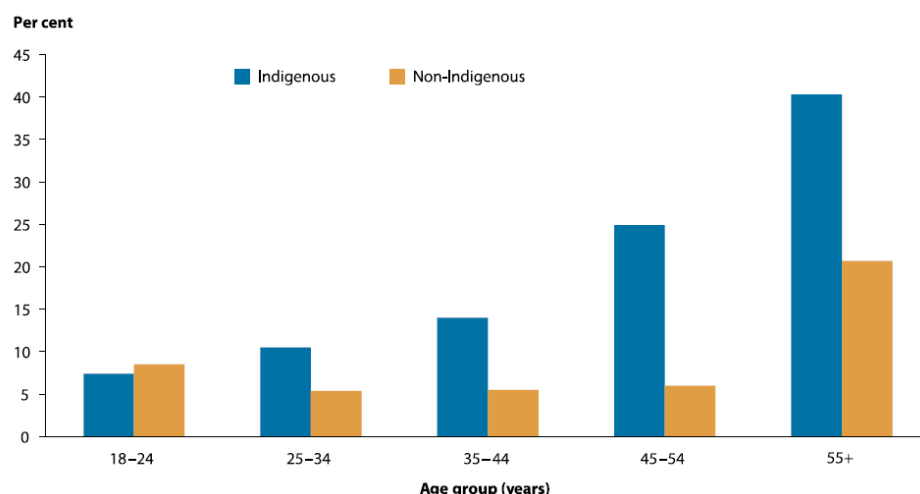


Figure 32: Presence of signs of kidney disease, by age group and Aboriginality, 2012-13 (ABS, 2014).

In 2010-12, the rate of treated end stage kidney disease was over 6 times higher for Aboriginal people, at a rate of 62 per 100,000, compared to 9 per 100,000 for non-Indigenous people. Further to this, Aboriginal people commencing kidney replacement therapy over this period were generally younger than their non-Indigenous counterparts, with 60% younger than 55 years compared with 31% of non-Indigenous people (AIHW, 2015a, 2015b).

In 2012-13, 173,423 (45%) of hospitalisations of Aboriginal people were due to chronic kidney disease, with 99% of these being for dialysis, the leading cause of hospitalisation among Aboriginal people. Over this period, Aboriginal people were 10 times as likely to be hospitalised for chronic kidney disease as non-Indigenous people, and if dialysis was excluded, Aboriginal people were 3 times as likely to be hospitalised (AIHW, 2015b).

In 2012, Aboriginal people with treated end stage kidney disease were 9 times as likely to be reliant on dialysis (88%) as non-Indigenous people (53%) and therefore less likely to have had a kidney transplant (12%) than non-Indigenous people (47%) (AHMAC, 2015).

In Australia<sup>15</sup> in 2008-12, the mortality rate from kidney disease among Aboriginal people was 30 per 100,000, compared to 11 per 100,000 for non-Indigenous people. From 2006-13 there was a significant (40%) decrease in mortality rates from kidney disease for Aboriginal people and a significant (53%) narrowing of the gap between Aboriginal and non-Indigenous people (53%) (AIHW, 2015a).

### *New South Wales*

In 2012-13 in NSW, the rate of chronic kidney disease among Aboriginal people aged 18 years+ was 18 per 100, compared with 11 per 100 for non-Indigenous people (AIHW, 2015a).

In 2010-12, the incidence of treated end stage kidney disease for Aboriginal people was 34 per 100,000, compared with 10 per 100,000 for non-Indigenous people. Between 1996 and 2012, the incidence of treated end stage kidney disease for Aboriginal people increased significantly from 7 per 100,000 to 22 per 100,000 (AIHW, 2015a).

Data on hospitalisations for dialysis indicates an increase in rates since 2008-2009 and a widening in the gap between Aboriginal and non-Indigenous populations. As can be seen in Figure 33, between 2006-07 and 2014-15, hospitalisations for dialysis in the HNECC PHN region increased for Aboriginal people from 12,248.8 to 17,007.2 per 100,000. As dialysis hospitalisations remained quite stable for

<sup>15</sup> In NSW, QLD, WA, SA and the NT combined.

non-Indigenous people over this time, from 3,462.5 to 3,650.5 per 100,000, this has substantially increased the rate difference between Aboriginal people and non-Indigenous people from 8,786.3 to 13,356.7 per 100,000 (Centre for Epidemiology and Evidence, 2016).

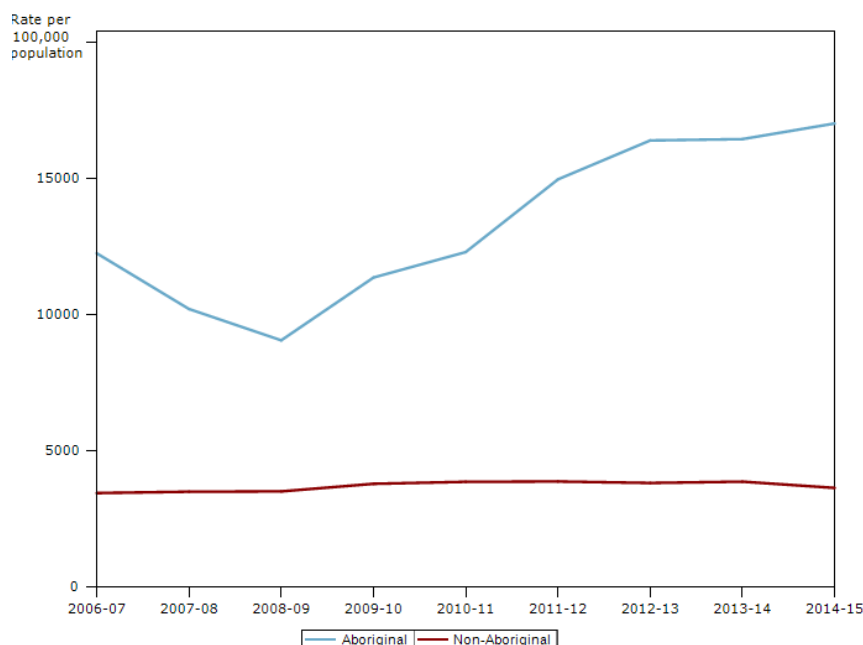


Figure 33: Rate of hospitalisations for dialysis by Aboriginality, HNECC PHN region, 2006-07 to 2014-15,

In 2008-12, there were 64 deaths from kidney disease of Aboriginal people in NSW, a rate of 21 per 100,000, compared with the non-Indigenous rate of 12 per 100,000 (AIHW, 2015a).

#### HNECC PHN

Data collected by HNECC through the PAT CAT tool<sup>16</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal patients of general practices in the HNECC PHN region were 0.6 times as likely to have a diagnosis of a renal condition recorded as non-Indigenous patients. In accordance with the data, health professionals in the HNECC PHN region have identified kidney disease as a health need for Aboriginal people.

<sup>16</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

## Cancer

In 2003 cancer was estimated to account for 8% of the burden of disease experienced by Aboriginal people in Australia (Vos et al., 2007). Increased cancer morbidity and mortality for Aboriginal people likely stems from a number of factors including: prevalence of smoking, risky alcohol consumption and poor dietary behaviours which are linked to high mortality cancers; increased likelihood of suffering high fatality cancers; lower participation in screening programs; later presentation for health care; increased complex comorbidities; reduced likelihood of undertaking treatment; and longer waiting times for surgery (AIHW, 2015a; Australian Indigenous HealthInfoNet, 2016).

### Australia

In Australia<sup>17</sup> in 2005-09, Aboriginal people accounted for 1% of cancer diagnoses, the incidence rate for all cancers was slightly lower for Aboriginal people (421 per 100,000) than for non-Indigenous people (443 per 100,000). Incidence rates were higher for Aboriginal people compared to non-Indigenous people for liver cancer (rate ratio of 2.8), cervical cancer (rate ratio 2.3), cancer of unknown primary site (rate ratio of 1.8), lung cancer (rate ratio of 1.7), uterine cancer (rate ratio 1.6), and pancreatic cancer (rate ratio 1.3). However, incidence rates of breast cancer, colorectal cancer, prostate cancer and non-Hodgkin lymphoma were lower amongst Aboriginal people. The most common cancer diagnoses for Aboriginal people over this period were lung cancer (130 cases/year), breast cancer (95 cases/year), bowel cancer (79 cases/year) and prostate cancer (66 cases/year) (AHMAC, 2015; AIHW, 2015b). In 2012-13, based on self-reported prevalence of cancer it was estimated that 6,200 (1%) Aboriginal people had cancer (AIHW, 2015b).

In 2013, Aboriginal people were less likely to have cancer managed as a problem by GPs (17 per 1,000 encounters) compared to non-Indigenous people (26 per 1,000 encounters) (AHMAC, 2015).

In 2013-14, there were 6,126 cancer related hospitalisations for Aboriginal people, and in 2012-13 Aboriginal people were hospitalised for cancer at a rate of 10 per 1,000 compared to 15 per 1,000 for non-Indigenous people (Australian Indigenous HealthInfoNet, 2016).

For cancers diagnosed between 1997 and 2007, and followed until 2010, the cancer survival rate for Aboriginal people was lower for both males (34%) and females (46%) when compared to non-Indigenous males (48%) and females (56%) (AHMAC, 2015; AIHW, 2015a). In Australia<sup>18</sup> in 2013, cancer accounted for 541 or one-fifth of the deaths of Aboriginal people, with a mortality rate that was 1.3 times that of non-Indigenous people (Australian Indigenous HealthInfoNet, 2016). Between 2006 and 2012, there was a significant 11% increase in cancer mortality rates for Aboriginal people and a significant 5% decline for non-Indigenous people, leading to a widening of the gap between the two populations (AHMAC, 2015). Over the period 2005 to 2009 in Australia<sup>9</sup>, mortality rates for Aboriginal people were significantly higher for cervical cancer, liver cancer, lung cancer and cancer of unknown primary site, and higher for uterine cancer, pancreatic cancer and breast cancer. Mortality rates were lower for Aboriginal people for non-Hodgkin lymphoma, colorectal cancer and prostate cancer (Australian Indigenous HealthInfoNet, 2016).

### New South Wales

In 2005-09 in NSW, the rate of selected cancer incidence for Aboriginal people (406 per 100,000) was lower than for non-Indigenous people (423 per 100,000). Although the incidence of cervical cancer among Aboriginal females was 10 per 100,000 compared with 6 per 100,000 for non-Indigenous females (AIHW, 2015a).

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<sup>17</sup> In NSW, QLD, WA and the NT combined.

<sup>18</sup> In NSW, QLD, SA, WA and the NT combined.

In 2011-12 and 2012-13, Aboriginal people were hospitalised for cancer at a rate of 5.2 per 1,000, which was 0.7 times the rate for non-Indigenous people (AIHW, 2015a).

In 2008-12, the cancer mortality rate for Aboriginal people (195 per 100,000) was higher than for non-Indigenous people (177 per 100,000). From 1998 to 2012, the cancer mortality rate for Aboriginal people increased by 33%, and as the rate for non-Indigenous people significantly decreased by 7% over this time, there was a significant widening of the gap between the two populations (AIHW, 2015a).

#### *HNECC PHN*

Health professionals in the HNECC PHN region have identified cancer as a health need for Aboriginal people.

## Liver Disease

The liver is important for metabolising food, secreting bile, making protein and removing toxins from the blood; liver disease may be indicated by poor liver function, where if left untreated it may lead to liver damage or failure. Other than impaired liver function, liver disease can also result in complications such as cancer, fluid retention and gastrointestinal bleeding. Long term excessive alcohol intake is a major risk factor for liver disease (AIHW, 2015a, 2015b).

#### *Australia*

The enzymes Alanine Aminotransferase (ALT) and Gamma Glutamyl Transferase (GGT) are related to liver function, where high levels of either or both indicate poor liver function and the possible presence of liver disease. In Australia in 2012-13, Aboriginal people were 1.4 times as likely to have elevated levels of ALT and 2.1 times as likely to have elevated levels of GGT as non-Indigenous people. 17% of Aboriginal people had elevated levels of ALT and 23% had elevated levels of GGT. ALT elevation was more common in Aboriginal males, and poor liver function was more common in Aboriginal people living in remote areas (ABS, 2014).

## Musculoskeletal Diseases

Musculoskeletal disease is characterised by inflammation of the joints causing pain, stiffness, functional limitations, deformity and disability, especially amongst elderly people. The two most common forms of musculoskeletal diseases are osteoarthritis and rheumatoid arthritis (AIHW, 2015b).

#### *Australia*

In 2012-13 in Australia, 20% of Aboriginal people, approximately 127,100 people, reported one or more musculoskeletal or connective tissue diseases, with a prevalence 1.1 times that of non-Indigenous people (AIHW, 2015b).

## Other Conditions

### Ear and Hearing Problems

The most common ear conditions experienced by Aboriginal people are middle ear problems, particularly otitis media stemming from a bacterial or viral infection. Otitis media, inflammation of the middle ear, is common in childhood and if it is a recurrent condition, can lead to hearing loss and deafness, with the potential for associated learning difficulties (AIHW, 2015b). Otitis media is believed to be associated with risk factors such as passive smoking, nutritional deficiencies, poverty and overcrowded housing (Burns, Breen, Bower, O’Leary, & Elliott, 2013). Ear and hearing problems, especially during childhood, can impact on linguistic, social and learning development, leading to difficulties at school, behavioural problems, and low educational achievement. This can further impact on later life through issues with employment, income and social relationships (Williams & Jacobs, 2009).

#### *Australia*

In 2012-13 in Australia, 12% of Aboriginal people, or an estimated 78,400 people, suffered long-term ear and/or hearing problems, with Aboriginal people 1.3 times as likely to do so as non-Indigenous people. 48% of ear or hearing problems experienced by Aboriginal children aged 0-14 years were deafness or partial hearing loss, and 39% were otitis media, with Aboriginal children 2.3 times as likely to have otitis media as non-Indigenous children (AIHW, 2015a). Between 2001 and 2012-13, the prevalence of ear and/or hearing problems in Aboriginal children decreased significantly from 11% to 7% (AIHW, 2015a).

In 2012-13, there were around 5,300 hospitalisations for Aboriginal people for ear conditions, at a rate of 3.0 per 1,000, which was similar to that of non-Indigenous people (2.6 per 1,000) (AHMAC, 2015). In 2013-14, hospitalisation rates for Aboriginal children aged 4-14 years with ear conditions was 1.6 times that of non-Indigenous children (Australian Indigenous HealthInfoNet, 2016). In 2011-12 to 2012-13, 75% of ear disease hospitalisations for Aboriginal people were for children aged under 15 years, whereas non-Indigenous children accounted for 52% of such hospitalisations (AIHW, 2015a). Between 2004-05 and 2012-13 in Australia<sup>19</sup>, hospitalisation rates for Aboriginal children aged under 15 years increased from 6 per 1,000 to 9 per 1,000, while rates for non-Indigenous children remained stable (AIHW, 2015a).

#### *New South Wales*

In NSW in 2012-13, 12% of Aboriginal people had an ear or hearing problem, which was 1.4 times that of the non-Indigenous population, and 7% of Aboriginal children aged under 15 years had an ear or hearing problem (AIHW, 2015a).

Between 2011-12 and 2012-13, Aboriginal children aged 15 years and under were hospitalised for ear conditions at a similar rate to non-Indigenous children. Over the period 2004-05 and 2012-13, the hospitalisation rate for Aboriginal people due to ear conditions increased from 1.8 per 1,000 to 2.3 per 1,000 (AIHW, 2015a).

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<sup>19</sup> In NSW, VIC, QLD, WA, SA and the NT combined.

## Vision Loss and Eye Disease

Vision loss and eye disease includes a range of conditions, such as low vision, blindness, refractive error, cataract, diabetic retinopathy and trachoma. Eye health problems during childhood can contribute to poor education outcomes and reduced employment prospects, whilst visual impairment at any stage of life can impair quality of life (West et al., 2002).

### *Australia*

In Australia in 2012-13, 33% of Aboriginal people reported having long-term eye and/or vision problems, which was similar to that of non-Indigenous people. Aboriginal people were more likely to report complete or partial blindness (3.9%) than non-Indigenous people (0.5%), and were also more likely to have cataracts (3%) than non-Indigenous people (2%) (AIHW, 2015a).

Eye conditions were more common among Aboriginal females (38%) than males (29%), and eye problems increased with age from 8.8% among Aboriginal children (0-14 years) to 92% in adults aged 55 years+. The most common eye conditions reported by Aboriginal people aged 55 years+ were long sightedness (68%) and short sightedness (36%) (AIHW, 2015a).

In 2012-13, among people with diabetes, the proportion of Aboriginal people who had eye sight problems due to diabetes (29%) was almost 3 times that of non-Indigenous people (AIHW, 2015a).

In 2011-12 to 2012-13, there were 5,674 eye disease hospitalisations for Aboriginal people, with lower hospitalisation rates (10 per 1,000) than non-Indigenous people (13 per 1,000), hospitalisations due to eye injuries however were 3 times higher in Aboriginal people (AHMAC, 2015; AIHW, 2015a). In Australia<sup>20</sup>, from 1998-99 to 2012-13 there was minimal change in the hospitalisation rate among Aboriginal people for eye diseases, however a 61% increase for non-Indigenous people led to an increase in the rate difference (AIHW, 2015a).

### *New South Wales*

In 2012-13 in NSW, 36% of Aboriginal people reported eye or vision problems, with a rate ratio between Aboriginal people and non-Indigenous people of 0.9. In 2011-12 and 2012-13, the hospitalisation rates for eye disease were lower for Aboriginal people (9 per 1,000) than for non-Indigenous people (13 per 1,000). Over the period 2004-05 to 2012-13, hospitalisation rates of Aboriginal people for eye disease increased from 3 to 9 per 1,000, whilst those for non-Indigenous people increased from 10 to 12 per 1,000, narrowing the rate difference between the two populations (AIHW, 2015a).

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<sup>20</sup> In WA, QLD, SA and the NT combined.

## Oral Disease

The most common oral diseases are tooth decay and gum (periodontal) disease, which if left untreated can lead to discomfort and tooth loss. Not only can oral disease impact on eating, speaking, and socialising, but it can aggravate other chronic health conditions, and has been linked to cardiovascular disease, diabetes, stroke and pre-term low birthweight. Tooth decay is largely preventable through diet, water fluoridation, good dental hygiene and annual check-ups. Gum disease is associated with smoking, diabetes, stress, inadequate nutrition, poor dental hygiene, reduced access to dental care, and substance use (Jamieson, Roberts-Thomson & Sayers, 2010; Roberts-Thomson, Spencer & Jamieson, 2008; Williams, Jamieson, MacRae & Gray, 2011).

Oral disease is linked with socioeconomic disadvantage and Aboriginal people are more likely to have complete tooth loss, gum disease, tooth decay and untreated oral disease, and are less likely to receive preventive dental care (Jamieson, Roberts-Thomson & Sayers, 2010; Williams, Jamieson, MacRae & Gray, 2011).

### *Australia*

In 2008 in Australia, 32% of Aboriginal children aged 0–14 years reported teeth or gum problems, and in 2010<sup>21</sup>, the average number of decayed or missing teeth was almost twice as high in Aboriginal children as their non-Indigenous counterparts. In 2012–13, 47% of Aboriginal people aged 15 years and over had lost at least one tooth, and 5% reported complete tooth loss. Complete tooth loss was associated with increased age, living in non-remote areas, lower levels of education, lower income, diabetes and heart or circulatory problems (AHMAC, 2015).

In 2012–13, 21% of Aboriginal people had not been to a dentist when they needed to over the previous year, with barriers including cost, long waiting periods, lack of service availability, shame, fear and dislike of the dental professional. 52% of Aboriginal children aged 2–6 years had never seen a dentist (AHMAC, 2015).

From 2011–12 to 2012–13, Aboriginal people were hospitalised for dental conditions at a rate of 3 per 1,000, 1.3 times the rate for non-Indigenous people. Aboriginal children aged 0–4 were hospitalised at a rate of 8 per 1,000 for dental conditions, compared to 4 per 1,000 for non-Indigenous children, indicating reduced access to dental care, and a substantial unmet need (AHMAC, 2015; AIHW, 2015a).

### *New South Wales*

In NSW in 2008, 33% of Aboriginal children aged 0–14 years reported teeth or gum problems. In 2012–13, 5% of Aboriginal people aged 15 years and over reported complete tooth loss, with a higher rate reported in remote areas of NSW (8%) than non-remote areas (5%) (AIHW, 2015a).

From 2011–12 to 2012–13, Aboriginal people were hospitalised for dental conditions at a rate of 2 per 1,000, 1.3 times the rate for non-Indigenous people. Aboriginal children aged 0–4 years were hospitalised for dental conditions at a rate of 7 per 1,000 compared with 3 per 1,000 for their non-Indigenous counterparts (AIHW, 2015a).

### *HNECC PHN*

Dental health has been identified by health professionals across the HNECC PHN region as a substantial health need for Aboriginal people.

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<sup>21</sup> In the NT, QLD, SA, Tas and WA combined.

## Communicable Diseases

Aboriginal people experience much higher rates of some communicable diseases than non-Indigenous people, the rate ratios for a number of diseases are presented in Table 7.

<i>Disease</i>	<i>Time Period</i>	<i>Rate Ratio (Aboriginal people compared to non-Indigenous people)</i>
<i>Chlamydia</i>	2011-13	3.0
<i>Gonorrhoea</i>	2011-13	20.0
<i>Hepatitis B</i>	2011-13	2.6
<i>Hepatitis C</i>	2011-13	3.3
<i>HIV</i>	2014	1.6
<i>Influenza Type B</i>	2007-10	12.9
<i>Invasive Pneumococcal Disease</i>	2011-13	7.0
<i>Meningococcal Disease</i>	2007-10	2.7
<i>Syphilis</i>	2011-13	6.0
<i>Tuberculosis</i>	2009-13	11.3

Table 7: Rate ratio of communicable diseases, between Aboriginal people and non-Indigenous people, Australia, 2007 – 2014, (Adapted from AHMAC, 2015; AIHW, 2015a; & Australian Indigenous HealthInfoNet, 2016).



## Disability

Aboriginal people may have an increased risk of disability due to a higher likelihood of lifestyle risk factors, greater susceptibility to many diseases, and reduced access to preventative health and health services (AHMAC, 2015).

### *Australia*

In 2012-13 in Australia, 36% of Aboriginal people, an estimated 228,000 people, reported experiencing a disability or a restrictive long-term condition, compared to 30% of non-Indigenous people. Aboriginal people were twice as likely to have a severe or profound disability as non-Indigenous people (AIHW, 2015a). Close to 10% of Aboriginal people reported a moderate to severe limitation in undertaking at least one core activity such as self-care, mobility or communication. This was 1.6 times the rate for non-Indigenous people. 2011 Census data showed that 5.7% of Aboriginal people required assistance with a core activity some or all of the time, which was twice the rate experienced by non-Indigenous people. In 2012-13, disability support services were used by Aboriginal people aged under 65 years at a rate of 25 per 1,000, which was 1.9 times the rate for non-Indigenous people (AIHW, 2015a).

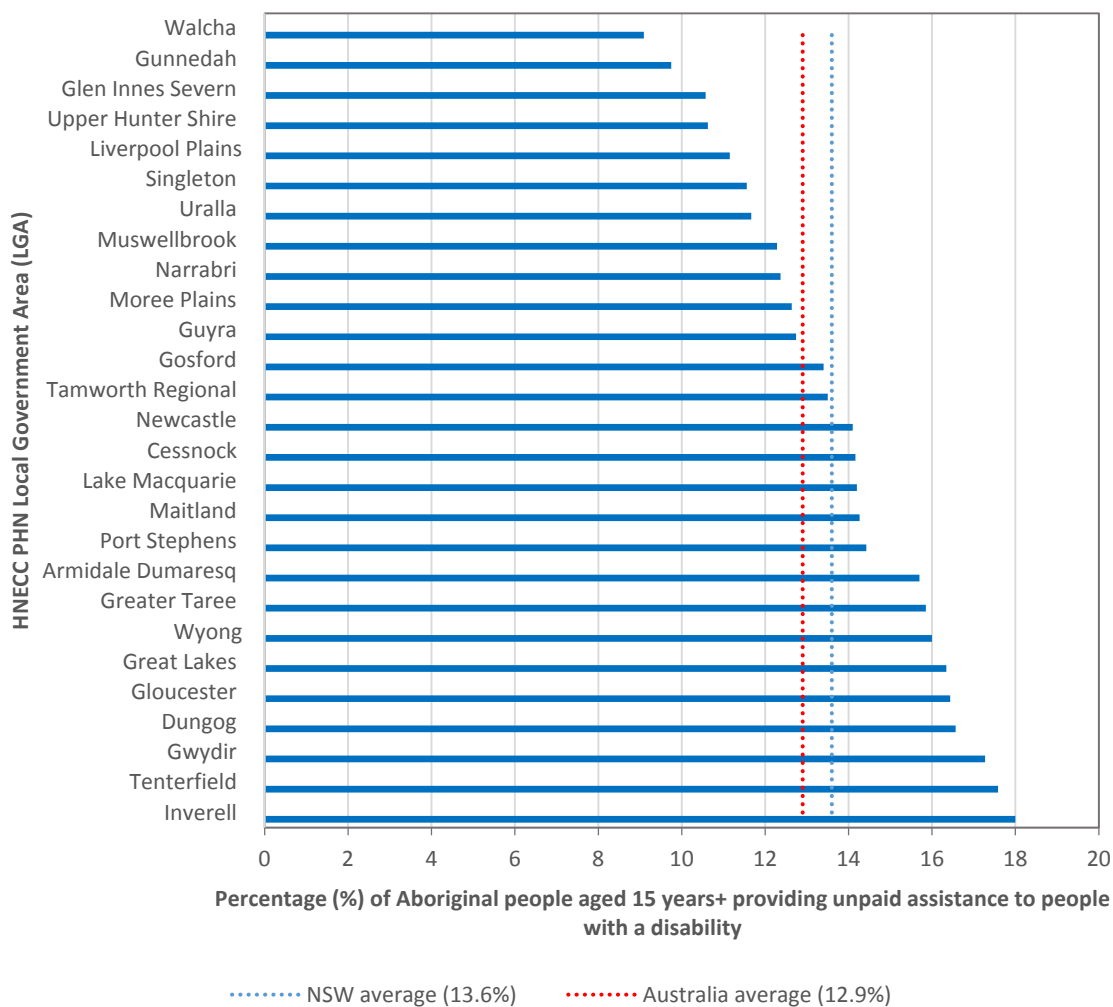
Among Aboriginal people experiencing a severe or profound disability, the most common types were physical disability (70%) and sight, hearing or speech-related disabilities (53%). By comparison, among all Australians with a severe or profound disability, 79% had a physical disability and 51% had sight, hearing and speech-related disabilities (AIHW, 2015b).

### *New South Wales*

In 2012-13 in NSW, 38% of Aboriginal people reported experiencing a disability or restrictive long-term condition, which was 1.7 times the rate of non-Indigenous people. In 2011, 7% of the Aboriginal population required assistance with a core activity such as self-care, mobility or communication, some or all of the time, which was 2.1 times the rate for non-Indigenous people. In 2012-13, the rate of disability support service use by Aboriginal people aged under 65 years was 31 per 1,000, which was 2.2 times the rate for non-Indigenous people (AIHW, 2015a).

## Carers

There are high rates of unpaid assistance provided by Aboriginal people aged 15 years+ in the HNECC PHN region compared to NSW (13.6%) and Australia (12.9%). As can be seen in Figure 34, in 2011, the rates of unpaid assistance provided by Aboriginal people aged 15 years+ to persons with a disability were highest in the LGAs of Inverell (18.0%), Tenterfield (17.6%) and Gwydir (17.3%). Lowest rates were recorded in the LGAs of Walcha (9.1%), Gunnedah (9.7%), Glen Innes Severn (10.6%) and Upper Hunter Shire (10.6%) (PHIDU, 2013).



**Figure 34: Proportion (%) of Aboriginal people aged 15 years+ providing unpaid assistance to people with a disability, by LGA, HNECC PHN region, 2011, (PHIDU, ...)**

## Social and Emotional Wellbeing

Australian Aboriginal people perceive health as a concept that goes beyond the physical wellbeing of a person to encompass the social, emotional and cultural wellbeing of the whole community (SHRG, 2004).

*Social and emotional wellbeing is a holistic concept based on connections to Country, culture, community, family, spirit and physical and mental health (SHRG, 2004).*

### Australia

In 2012-13 in Australia, approximately 63% of Aboriginal people identified with a clan or language group; 73% recognised an area as homelands or traditional country; and 86% reported feeling accepted by other Aboriginal people. 69% of Aboriginal people had experienced at least one significant stressor in the previous year, and 16% felt that they had been treated poorly in the last 12 months because they are Aboriginal (AIHW, 2015a; Australian Indigenous HealthInfoNet, 2016).

In 2012-13, it was reported that 48% of Aboriginal people or their relatives had been removed from their natural family. People who had been removed were more likely to experience high or very high levels of psychological distress (35%) than those who had not (29%). This was also seen among those who had relatives removed (34%) compared to those who had not (26%) (AIHW, 2015b).

In 2012-13, 30% of Aboriginal people reported high or very high levels of psychological distress, at 2.7 times the rate for non-Indigenous people. These levels were significantly higher in Aboriginal women (36%) than men (24%). Aboriginal people who had high levels of psychological distress were more likely to smoke daily, have used illicit substances in the past year, and assess their health as fair or poor (AIHW, 2015b).

In 2008-13 mental health problems accounted for 11% of all problems managed by GPs for Aboriginal patients (176 per 1,000 encounters), which was 1.3 times the rate for other Australians. The most common mental health problems experienced by Aboriginal people and managed by GPs were depression (3.1% of all problems managed), anxiety (1.2%), tobacco abuse (1.1%) and alcohol abuse (1.0%) (AIHW, 2015b).

In 2012-13, 4.4% of hospitalisations of Aboriginal people were related to mental health conditions, with a hospitalisation rate of 24 per 1,000, which was 2 times the rate for non-Indigenous people. The rate difference between Aboriginal people and non-Indigenous people was 14 per 1,000 (AIHW, 2015a, 2015b). In Australia<sup>22</sup> between 2004-05 and 2012-13, the hospitalisation rate for mental health conditions for Aboriginal people increased by 40%, and as there was little change for non-Indigenous people over this period the rate difference between the two populations increased by 144% (AIHW, 2015a).

In Australia<sup>23</sup> in 2008-12, mental health conditions accounted for 3% of deaths among Aboriginal people, at a rate of 49 per 100,000, which was 1.2 times the non-Indigenous rate (AHMAC, 2015; AIHW, 2015a). Suicide was the most common external cause of death for Aboriginal people, accounting for 4.8% of all deaths at a rate of 19 per 100,000. The gap between Aboriginal people and non-Indigenous people was 10 per 100,000 (AIHW, 2015a). Over this period, the suicide rate for 15-19 year olds in the Aboriginal population was 5 times that of the non-Indigenous population (AIHW,

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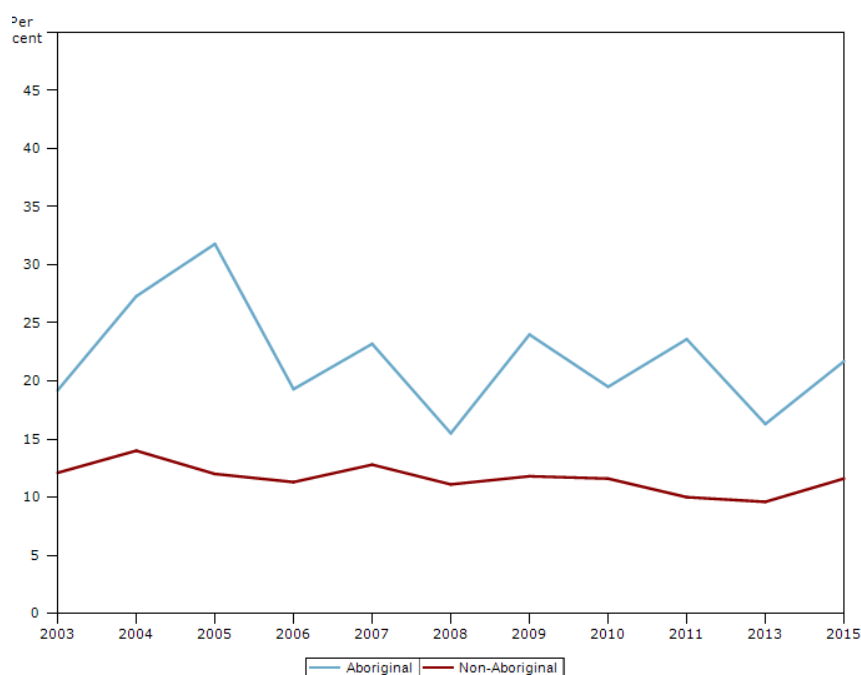
<sup>22</sup> In NSW, VIC, QLD, WA, SA and the NT combined.

<sup>23</sup> In NSW, QLD, WA, SA and the NT combined.

2015b). More recently, in 2013, the mortality rate from intentional self-harm for Aboriginal people was 2.2 times that of non-Indigenous people (Australian Indigenous HealthInfoNet, 2016).

### New South Wales

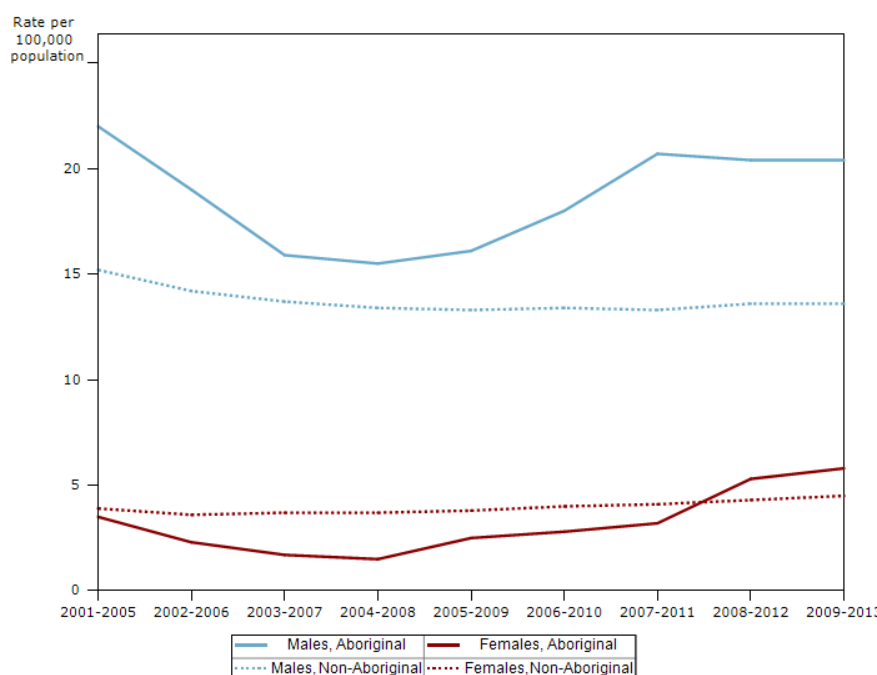
In NSW in 2003, 19.2% of Aboriginal people aged 16 years+ reported experiencing psychological distress, which was more than one and a half times that reported by non-Indigenous people (12.1%). As shown in Figure 35, this proportion has varied over time to 2015 for Aboriginal people, whilst that of non-Indigenous people has remained relatively stable (Centre for Epidemiology and Evidence, 2016).



**Figure 35: Proportion of people experiencing psychological distress by Aboriginality, persons aged 16 years and over, NSW 2003 to 2015 (Centre for Epidemiology and Evidence, 2016).**

Notes. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

In NSW from 2001-05 to 2009-13, rates of suicide amongst Aboriginal people increased slightly from 12.0 to 12.5 per 100,000. In contrast, rates of suicide among non-Indigenous people decreased slightly from 9.4 to 8.9 per 100,000. This led to a widening of the gap between Aboriginal and non-Indigenous people, which is displayed in Figure 36. Between 2001 and 2005, the suicide rate for Aboriginal males was more than 6 times the rate for Aboriginal females (22.0 per 100,000 and 3.5 per 100,000 respectively). This large rate difference was reduced in 2009-13, with a reduction in the rate for Aboriginal males and an increase in the rate for Aboriginal females (20.4 per 100,000 and 5.8 per 100,000 respectively) (Centre for Epidemiology and Evidence, 2016).

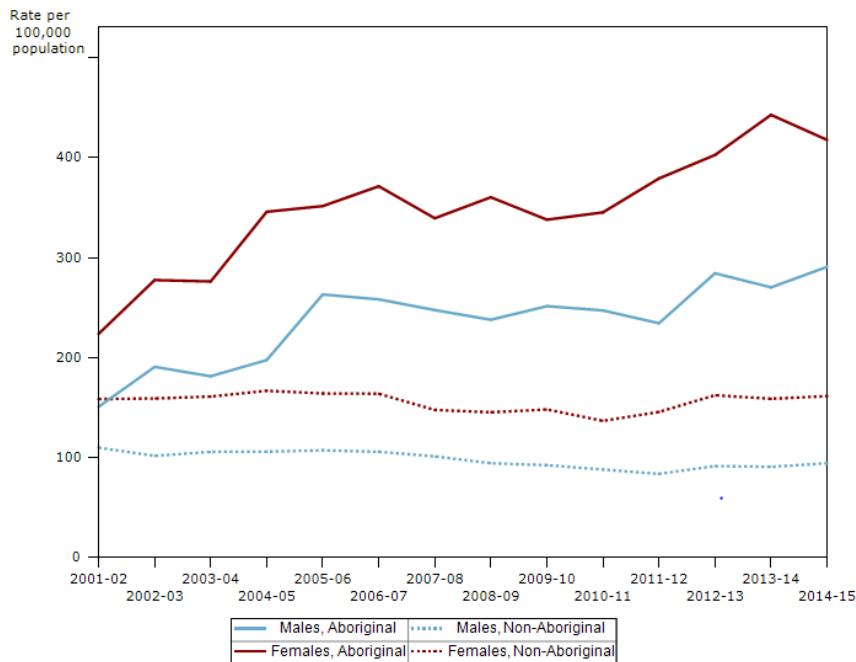


**Figure 36: Suicide rates by Aboriginality and sex, NSW 2001-2005 to 2009-2013, (Centre for Epidemiology and Evidence, 2016).**

Note. Comprises any intentional self-harm with fatal result; coding labelled: Suicide and self-inflicted injury in ICD-9 and Intentional self-harm in ICD10.

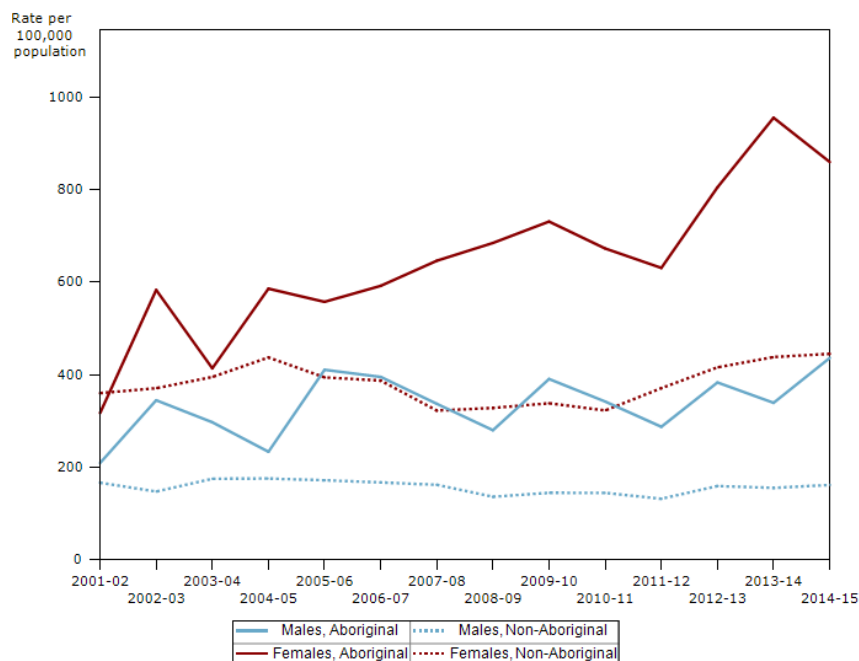
In 2011-12 to 2012-13, the rate of hospitalisations for mental health conditions was 23 per 1,000 for Aboriginal people, 1.7 times the rate for non-Indigenous people, with a rate difference of 11 per 1,000. Between 2004-05 and 2012-13, the hospitalisation rate for mental health conditions for Aboriginal people increased from 25 to 29 per 1,000, and the rate difference between Aboriginal people and non-Indigenous people decreased by 5% (AIHW, 2015a).

From 2001-02 to 2014-15, hospitalisations for intentional self-harm in NSW increased for Aboriginal people from 187.3 to 354.3 per 100,000. As hospitalisations for non-Indigenous people decreased over this period, from 133.9 to 127.5 per 100,000, the rate difference between Aboriginal people and non-Indigenous people increased from 53.4 to 226.8 per 100,000. Figure 37 shows the widening of the gap between Aboriginal and non-Indigenous people, and also shows that intentional self-harm hospitalisations are consistently more common in females than males regardless of Aboriginal heritage (Centre for Epidemiology and Evidence, 2016).



Figures are based on where a person resides, rather than where they are treated. Hospital separations were classified using ICD-10-AM. Rates were age-adjusted using the Australian population as at 30 June 2001.

Between 2001-02 and 2014-15, hospitalisations for intentional self-harm in NSW for Aboriginal people aged 15-24 years increased dramatically from 264.0 to 641.4 per 100,000, whilst those for non-Indigenous people increased slightly from 261.6 to 300.0 per 100,000. Figure 38 shows the widening of the gap between Aboriginal and non-Indigenous people in this regard, and the sizeable difference in intentional self-harm hospitalisations between males and females regardless of Aboriginal heritage (Centre for Epidemiology and Evidence, 2016).



Notes. Only NSW residents are included. Figures are based on where a person resides, rather than where they are treated. Hospital separations were classified using ICD-10-AM. Rates were age-adjusted using the Australian population as at 30 June 2001.

In 2012, the mortality rate from suicide for Aboriginal people in NSW was 11 per 100,000, compared with 9 per 100,000 for non-Indigenous people (AIHW, 2015a).

## HNECC PHN

Data collected by HNECC through the PAT CAT tool<sup>24</sup>, indicates that as at 31<sup>st</sup> July 2016, Aboriginal patients of general practices in the HNECC PHN region were 1.1 times as likely to have been seen for a mental health condition as non-Indigenous patients.

Mental ill-health, including complex and enduring mental illness, grief and loss, and youth mental health have been identified by health professionals across the HNECC PHN region as a particular area of need for Aboriginal people. There is a need for greater integration between mental health and drug and alcohol services, for more flexibility in treatment approaches, and for an increased emphasis on culturally appropriate mental health treatment. There is also concern amongst health professionals that the physical health needs of Aboriginal people experiencing mental illness, particularly severe and complex mental illness, are being overlooked. In relation to social and emotional wellbeing, health professionals have identified a need for youth programs, including leadership and mentoring, for Aboriginal people in the HNECC PHN region.

### Intentional Self-Harm Fatalities

Data provided by the National Coronial Information System indicated that between 2000 and 2013 in the HNECC PHN region, there were 1,337 deaths recorded as intentional self-harm fatalities. Of these, 38 (2.8%) were deaths of Aboriginal people, and 135 (10.1%) were deaths where Indigenous status was recorded as *unlikely to be known* (NCIS, 2016).

### Access to Mental Health Services

Considerable research has been conducted in Australia examining the issues faced by Aboriginal people in accessing health services, a summary of this is presented elsewhere in this report. Whilst there are many similarities in the barriers and enablers experienced by the Aboriginal population in accessing mental health services, there are also some unique factors. Key points arising from this literature are provided below.

Aboriginal people experience more barriers than non-Indigenous people when making contact with a mental health service, including: a history of racism and discrimination leading to distrust of mainstream services; misunderstanding arising from cultural and language differences; and persisting stigma associated with mental illness (Isaacs, Pyett, Oakley-Browne, Gruis & Waples-Crowe, 2010). Aboriginal people have reported difficulty in identifying mental health issues, due to a lack of awareness and discussion in community, as well as the use of technical language. Many Aboriginal people report having limited knowledge of the availability of mental health services, and whilst they were not always proactive in seeking out services, there was a perception that services were not committed to providing the necessary information (Isaacs, Mayberry & Gruis, 2013; Lee, Harrison, Mills & Conigrave, 2014).

Research into access to mental health services by Aboriginal men indicates a reluctance to access services due to shame; fear of services; previous negative experiences with services; and the perception that their community will label them as 'mental' (Isaacs, Mayberry & Gruis, 2012, 2013). This is exacerbated by: a disinclination to talk about issues due to societal and peer pressures, stigma and previous negative experiences; and difficulty waiting long periods of time for treatment, with long waiting lists raising questions as to the capacity and willingness of the service to assist. It is clear that Aboriginal men are likely to turn to alternate coping strategies such as alcohol use. Aboriginal men also experience difficulties engaging with mental health services, with the main deterrent to engagement being distrust of services and staff. Building relationships is important for help seeking and it takes considerable time for services to build trust with clients before meaningful engagement

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<sup>24</sup> Aggregated data from almost 1,000,000 patients of 117 General Practices. 4% of data was for Aboriginal patients. Data was not obtained from Aboriginal Medical Services.

can occur. Suggestions for building the trust and confidence of Aboriginal men in this context include gaining recommendations from local Elders; holding a tour of the service enabling Aboriginal men to familiarise themselves with staff and vice versa; and developing relationships with the local community, for example through having staff visit the community regularly, and employing a local Aboriginal Mental Health Liaison Officer (Isaacs, Mayberry & Gruis, 2012, 2013). A lack of cultural competency in service delivery also impedes engagement for Aboriginal men. Certain practices can cause distress to clients, such as conducting assessments in a closed environment and maintaining direct eye contact during conversations. Additionally, clients can find it difficult to understand their clinicians. This lack of cultural competency is compounded by the absence of Aboriginal staff in mental health services. Suggestions to increase engagement include enhancing flexibility of services or modifying service delivery to suit the needs of Aboriginal men. This could include having a mobile service where clients could be assessed and followed up at locations other than the office, as well as providing a greater role for the family in client care. The need to give the family equal importance in the care of clients was an important finding of this study and is supported by other research showing the benefit of involving family in the treatment of Aboriginal clients, with a clear need for the provision of additional support and information for family members (Isaacs et al., 2012; Lee et al., 2014).

Researchers have examined the efficacy of integrating a culturally safe mental health service into a primary health care service, finding that it increased access for Aboriginal people due to: its responsiveness to community needs; holistic and culturally safe nature; proximity to where many of the patients lived; and the existing trusting relationships between patients and the service (Hepworth et al., 2015). A study of the experience of depression and anxiety within Aboriginal communities highlighted a need for more Aboriginal psychiatrists, psychologists and mental health workers, with Aboriginal practitioners more able to relate to, and understand what another Aboriginal person is going through. There was also a need for a communication strategy about these conditions and how to deal with them in Aboriginal communities, this would need to be tailored for each community, developed in consultation with local people according to local protocol, and delivered by Aboriginal people. Other recommendations included: increasing the number of mental health rehabilitation programs for Aboriginal clients; and supporting the delivery of more group therapy programs found to be effective in overcoming depression and anxiety for Aboriginal people (Axeby-Blake et al., 2013).

Comorbidity is a barrier to accessing healthcare, for example one study found that among adults with Type II diabetes attending Aboriginal Medical Services, levels of depression screening and documentation were low and were significantly lower for patients with greater disease severity (Schierhout et al., 2013). Much of the comorbidity research however has focused on the experiences of Aboriginal people with comorbid mental health and substance use disorders. Comorbid conditions need to be addressed through an integrated approach, and given the numerous examples of instances where a mental illness impedes access to support for substance misuse, or vice versa, complex needs should never be considered a deterrent to treatment provision. Generally, clients felt more comfortable accessing an Aboriginal Medical Service, however, there were concerns regarding breaches in confidentiality which were corroborated by staff. Clients described negative experiences with mainstream services, including: critical or judgemental attitudes of staff; little time dedicated to building client rapport; inflexibility; long waiting times; difficulty accessing services in times of crisis; and a lack of ongoing support after treatment through an acute mental health service. Suggested service improvements included: greater availability of local inpatient treatment services; more friendly and flexible services; better service promotion; and enhanced professional development for staff (Lee et al., 2014).

In support of the findings of the literature review, health professionals have identified a range of barriers to mental health service access in the HNECC PHN region including: competing family and

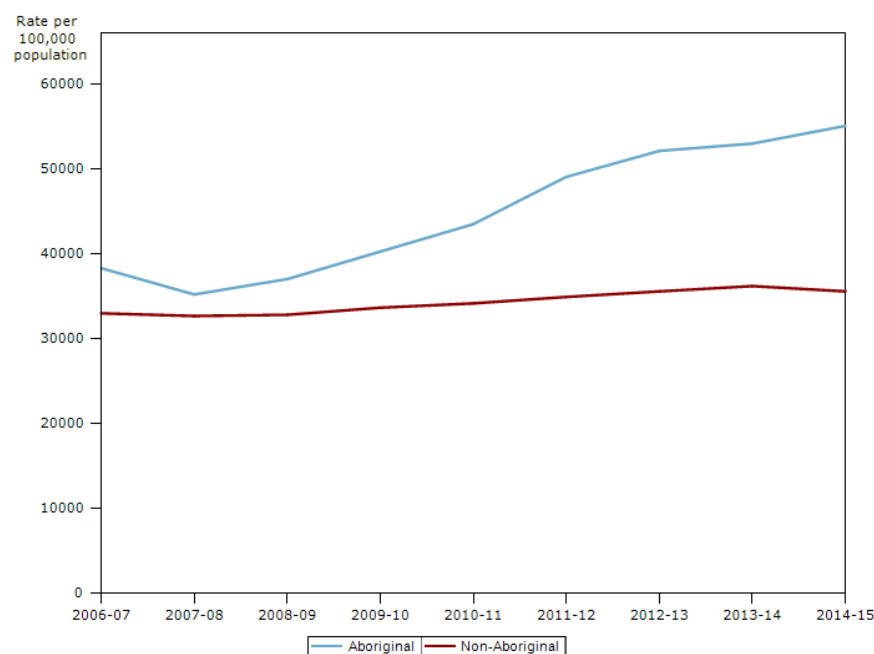


cultural priorities; a lack of Aboriginal staff or staff of the appropriate gender; a history of service mistrust and disengagement; limited awareness of services; doubts related to confidentiality; and concerns that the service may not be culturally sensitive.

# Hospitalisations

## Total Hospitalisations

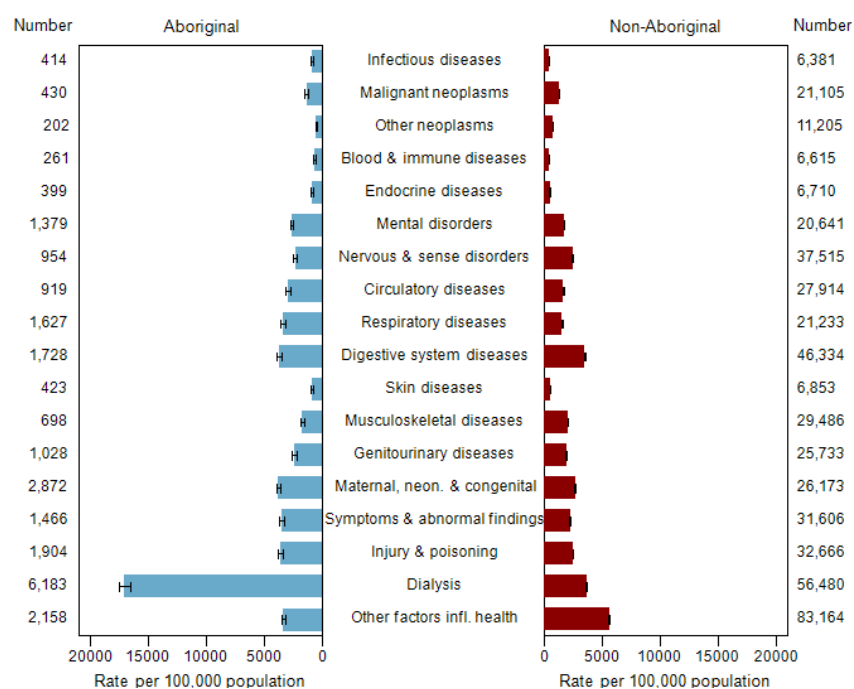
As indicated in Figure 39, since 2007-2008 there has been a steady increase in the rate of total hospitalisations for Aboriginal people for all causes in the HNECC PHN region, whilst the rate for the non-Indigenous population has remained steady (Centre for Epidemiology and Evidence, 2016). Given Aboriginal people are under-reported in the Admitted Patient Data Collection, it is likely that the true numbers of hospitalisations for this population are higher than shown.



**Figure 39: Rate of hospitalisations for all causes by Aboriginality, HNECC PHN region, 2006-07 to 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Only NSW residents are included. Figures are based on where a person resides, rather than where they are treated. Hospital separations were classified using ICD-10-AM. Rates were age-adjusted using the Australian population as at 30 June 2001. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

In 2014-15, the main cause of hospitalisations in the HNECC PHN region for Aboriginal people was dialysis (6,183 hospitalisations at a rate of 17,007.2 per 100,000), where they were almost four times as likely to be hospitalised as the non-Indigenous population. This was followed by maternal, neonatal and congenital hospitalisations (2,872 hospitalisations at a rate of 3,774.5 per 100,000), digestive system disease hospitalisations (1,728 hospitalisations at a rate of 3,722.5 per 100,000), injury and poisoning hospitalisations (1,904 hospitalisations at a rate of 3,573.4 per 100,000), and hospitalisations for symptoms and abnormal findings (1,466 hospitalisations at a rate of 3,437.3 per 100,000) (Figure 40) (Centre for Epidemiology and Evidence, 2016).



**Figure 40: Number and rate of hospitalisations by Aboriginality, and category of cause, HNECC PHN region, 2014-15, (Centre for Epidemiology and Evidence, 2016).**

Notes. Figures are based on where a person resides, not where they are treated. neon.= neonatal. Hospital separations are classified using ICD-10-AM classification and distributed according to ICD-10-AM chapters. Chapters on diseases of the nervous system, eye and ear and chapters on conditions relating to pregnancy, perinatal period and congenital diseases are combined into one category in the analysis. ICD10-AM chapter Factors influencing health has been divided into two categories: Dialysis and Other factors influencing health in the analysis. As Aboriginal people are under-reported on the Admitted Patient Data Collection, it is likely that the true numbers are higher than shown.

## Potentially Preventable Hospitalisations

Potentially preventable hospitalisations are those hospitalisations which could have been prevented had earlier preventive care and disease management been provided, through primary health care for example. At the state level, there are increasing hospitalisations for Aboriginal people for potentially preventable conditions, whilst by comparison the rate for the non-Indigenous population is decreasing.

Figure 41 presents data on potentially preventable hospitalisations for Aboriginal and non-Indigenous population groups across the HNECC PHN region from 2006-07 to 2014-15. The rate of total hospitalisations for potentially preventable conditions is substantially higher for Aboriginal people, and is consistently higher in each of the three condition categories (vaccine-preventable, chronic and acute conditions). In accordance with the trend at a state level, there is a widening in the gap between the rates of total potentially preventable hospitalisations for Aboriginal and non-Indigenous people across the HNECC PHN region (Centre for Epidemiology and Evidence, 2016).



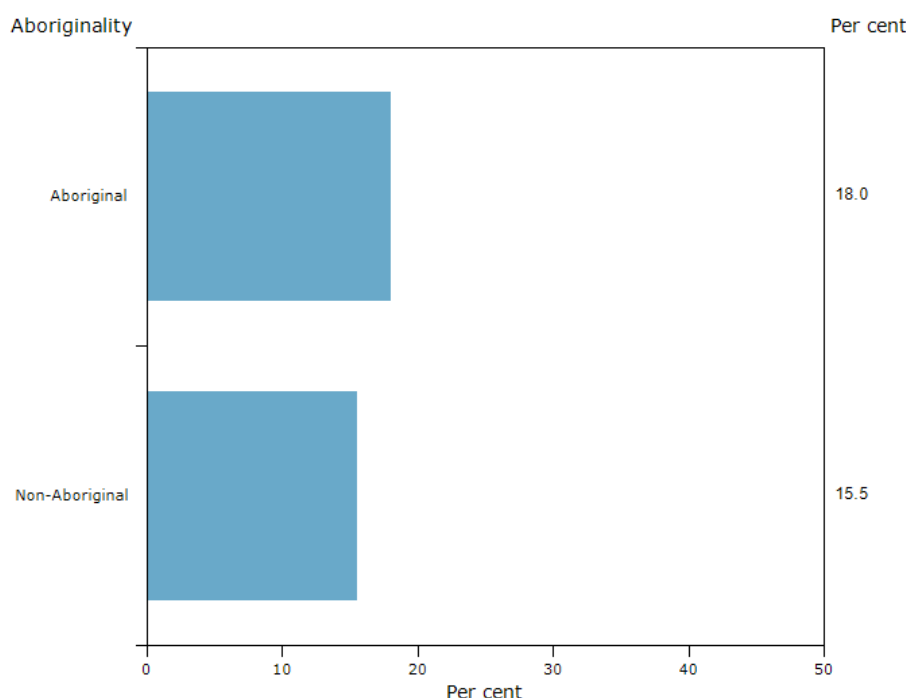
**Figure 41: Rate of Potentially Preventable Hospitalisations by category and Aboriginality, HNECC PHN region, 2006-07 to 2014-15,**

# Health Services

## Health Service Access and Needs

It is widely known that a key contributing factor to the disproportionate burden of disease experienced by Aboriginal people is reduced access to health services.

In NSW in 2012, as shown in Figure 42, 18.0% of Aboriginal people and 15.5% of non-Indigenous people aged 16 years+ reported having difficulty accessing health care when needed (Centre for Epidemiology and Evidence, 2016).



**Figure 42: Proportion of people aged 16 years and over, reporting difficulty accessing health care when needed, by Aboriginality, NSW 2012, (Centre for Epidemiology and Evidence, 2016).**

Note. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing (CATI).

By targeting inequalities in access to health services it is possible to reduce preventable mortality rates, reduce behavioural and environmental risk factors, and address early intervention and management of disease (WHO, 2011). There has been much research conducted in Australia examining the barriers and enablers to health service access impacting on Aboriginal people.

Safety is a key factor in the accessibility of a health service. If a health service has not been accepted by the local Aboriginal community and Aboriginal patients as safe, patients will not feel safe in that clinical setting, engagement will be severely compromised and there will be a detrimental effect on outcomes. Whilst linkages with Aboriginal Medical Services help, given the non-homogenous Aboriginal population and non-Indigenous staff, cultural safety is not a given and needs to be strived for. Trust can be achieved through building genuine relationships, word of mouth, behaving respectfully, exhibiting a willingness to learn, responding to local needs, and maintaining clinical relevance (Adams & Tongs, 2011). Research indicates that health practitioners and Aboriginal patients hold very different perspectives on cultural barriers. While the patients were concerned with the interpersonal relationship between themselves and the health worker, the practitioners focused on the need to make changes to physical environments and systems. Whilst such changes can assist in overcoming cultural barriers, they can be perceived as tokenistic in the absence of a trusting relationship between the patient and the health worker (McBain-Rigg & Veitch, 2011).

Discrimination continues to have a substantial negative impact on the health of Aboriginal people, by detrimentally affecting health care seeking behaviour; affecting how Aboriginal people acquire

and pass on health information; and impacting on the mental health of Aboriginal people (Baba, Brolan & Hill, 2014). Any investment in initiatives to reduce patients' experiences of racism should be well evaluated (Kelaher, Ferdinand & Paradies, 2014). Whilst the provision of culturally-appropriate and evidence-based health services can address these issues, tackling institutionalised and day-to-day racism will require an approach across all sectors to shift the attitudes and behaviour of all Australians (Baba, Brolan & Hill, 2014).

Research has identified the following reasons for Aboriginal people delaying seeking healthcare: transport; cost (actual and perceived); racism; shame; accessibility; discomfort with mainstream services which do not acknowledge or consider Aboriginal concepts of health; negative intergenerational experiences with the health system; a lack of available services; and a lack of culturally appropriate services (Baba, Brolan & Hill, 2014; Boudville, Anjou & Taylor, 2013).

Patients of Aboriginal Medical Services have suggested that each aspect of their time spent in the service is more valued than that spent in mainstream services. This includes aspects such as the opportunity for socialising and sharing health experiences with other community members in the waiting room, and the trusting and respectful nature of the clinical consultation (Jowsey et al., 2012). When describing non-Indigenous health services, Aboriginal people have reported experiencing discrimination; feeling patronised or judged; enduring culturally insensitive practices and processes; and receiving inadequate access to services and poor quality of care. Negative experiences such as this led to some participants not absorbing information supplied by health professionals, and resulted in failure to follow recommendations or follow up on referrals, and in some instances misdiagnosis. As a consequence, patients either chose not to access non-Indigenous health services or established only a tenuous connection with those that they did access. This compromises the quality of health care that Aboriginal people receive, leading to poor health outcomes for people with chronic illness. Poor communication was flagged as a major obstacle to good care and support, and as a hindrance to effective self-management, with medical advice provided in terms that were difficult or impossible to understand, and situations where poor communication led to inappropriate diagnoses or unwarranted delays in treatment (Aspin, Brown, Jowsey, Yen & Leeder, 2012). Whilst the negative associations made with health services has generated a cycle of fear, delay and poor health outcomes, cultural resilience has been found to provide a protective mechanism against the harm stemming from sub-optimal care (Aspin et al., 2012; Baba, Brolan & Hill, 2014).

One study of Aboriginal health service patients found that there was widespread confusion over medication, patients felt they received insufficient advice from health professionals about medicines, and reported challenges in having effective interactions with medical practitioners and pharmacists. Many Aboriginal patients take multiple medicines and research indicates they can find managing their medicines difficult and worrying. The researchers concluded that Aboriginal patients require more comprehensive information in verbal and written form, and more effective communications from doctors and pharmacists about medication indications, mechanisms, side effects, drug interactions and duration of treatment (Swain & Barclay, 2013). Researchers have recommended the tailoring and remodelling of the Home Medicines Review program to increase the awareness, accessibility, acceptability and effectiveness of the program for Aboriginal people (Swain & Barclay, 2015; Swain, Griffiths, Pont & Barclay, 2014).

In accordance with the findings of the literature review, access to health services, including primary health care services, has been identified by stakeholders as a key health need for Aboriginal people in the HNECC PHN region. Transport issues were consistently identified by stakeholders across the HNECC PHN region, including consumers, as a substantial barrier encountered by Aboriginal people in accessing health services, the cost associated with accessing health care was also commonly

mentioned. Other barriers cited by Aboriginal community members were low motivation and competing work and family commitments. Additional barriers perceived by health professionals included: a lack of trust stemming from limited cultural awareness; concerns about the potential for breaches of confidentiality when accessing an AMS; and low levels of health literacy leading to poor patient compliance, and a lack of knowledge of available services.

In addition to the inaccessibility of health services, health professionals from across the HNECC PHN region have identified a number of factors contributing to poorer health outcomes for Aboriginal people, including: reduced compliance; poor attendance at appointments; not bringing or not having a Medicare card; the inability to effect the social determinants within the primary care setting; patient discomfort in waiting rooms and consulting rooms; difficulty contacting transient community members; limited support navigating the health system; misunderstandings between clients and health professionals; a lack of Aboriginal Health Workers; difficulty for health professionals in remaining cognisant of the different services and programs available to their patients; and case complexity.

Stakeholders from across the HNECC PHN region have called for greater integration and coordination of services to reduce the fragmented nature of care for Aboriginal people. A need for enhanced care coordination for Aboriginal people, along with greater and more proactive follow-up care, in particular for those people experiencing comorbid health conditions has been identified by stakeholders. Health professionals and Aboriginal community members have highlighted a need more holistic care for Aboriginal people taking into consideration mental health, physical health, disability, and social issues.

Research indicates that any strategy to improve health outcomes for Aboriginal people with chronic disease needs to include the following elements: a strong and visible Aboriginal workforce; recognition of the fundamental role of family and peers in the management of chronic disease; and including patients in problem solving processes regarding their chronic disease. The presence of Aboriginal staff shows that a service is committed to improving outcomes for Aboriginal people, with Aboriginal health workers playing a key role in passing on information about chronic disease, promoting health literacy and self-management, and minimizing levels of anxiety and confusion resulting from a diagnosis. Passing knowledge between generations is an important aspect of Aboriginal culture, people with chronic disease can perform an important role in disease prevention by passing on their knowledge; elders play a role in providing support and transmitting knowledge; and children are also key support persons and advocates. If Aboriginal patients have access to appropriate health services and support mechanisms, they are able to manage their chronic disease with enhanced health outcomes. Examples of strategies that can be undertaken by health services to enhance access include: integrating cultural safety principles into mainstream healthcare; introducing culturally appropriate support systems and educational groups; creating health services that are initiated, planned and governed by local Aboriginal communities; incorporating community outreach into health services; and ensuring health promotion campaigns are carried out in a culturally appropriate manner that is respectful of elders and traditional storytelling methods (Aspin et al., 2012; Baba, Brolan & Hill, 2014; Boudville, Anjou & Taylor, 2013).

Recommendations made by stakeholders from across the HNECC PHN region to improve access to health services and achieve better health outcomes for Aboriginal people include: outreach and mobile clinics; a one stop shop for Aboriginal health services; a move towards flexible fluid models of care; regional shared clinical records for care coordination; and conducting 715 health checks in schools.

**Aboriginal community members from across the HNECC PHN region suggest that a great health service is one that provides a holistic health care program, and one that provides support for social issues as well as health conditions.**

Whilst the literature suggests that increasing the Aboriginal workforce in the health system will facilitate increased health service access for Aboriginal community members, it is imperative that this workforce is well supported. Aboriginal workers easily cite the benefits of contributing to improved health outcomes for Aboriginal people and working with close-knit communities, however Aboriginal workers report difficulties also, particularly in maintaining boundaries and separating work and personal life. More striking however is that members of the Aboriginal workforce working in non-Aboriginal workplaces across the HNECC PHN region consistently report a lack of cultural safety in their workplaces due to ignorance on behalf of non-Aboriginal staff and managers; little awareness of culture and customs; and a limited understanding of the work practices of Aboriginal staff. There are widespread reports of Aboriginal staff experiencing racism, not being listened too, and feeling tokenistic, under-valued and isolated. The Aboriginal workforce has identified a substantial need for improvement in the cultural competence of the non-Indigenous workforce, through for example mandatory cultural awareness or competence training, or compulsory input into an organisational Reconciliation Action Plan.



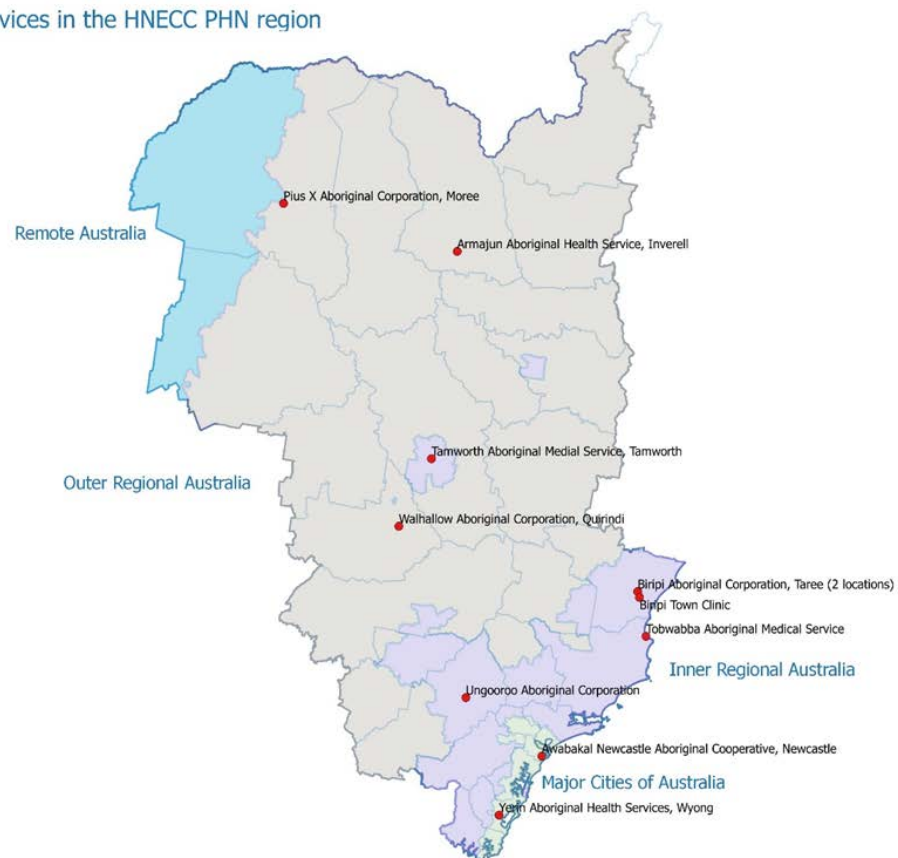
## Aboriginal Health Service Mapping

### Aboriginal Medical Services

There are 9 Aboriginal Medical Services in the HNECC PHN Region, including:

- Pius X Aboriginal Corporation, Moree
- Armajun Aboriginal Health Service, Inverell
- Tamworth Aboriginal Medical Service, Tamworth
- Walhallow Aboriginal Corporation, Quirindi
- Biripi Aboriginal Corporation, Taree (2 locations) and Biripi Town Clinic
- Tobwabba Aboriginal Medical Service, Forster
- Ungooroo Aboriginal Corporation, Singleton
- Awabakal Newcastle Aboriginal Cooperative, Newcastle
- Yerin Aboriginal Health Services, Wyong

Aboriginal Medical Services in the HNECC PHN region



### **Chronic Disease Management and Prevention Services**

Service mapping was conducted across the HNECC PHN region to identify chronic disease management and prevention services for the Aboriginal population. Services were mapped for diabetes, respiratory disease, cardiovascular disease, cancer, chronic kidney disease, nutrition and physical activity. This information is provided in the Appendix.

The majority of the information acquired for this service mapping exercise came from Rural Doctors Network funded services. Information was also obtained from Aboriginal Medical Service websites, community service websites, council services, mainstream Primary Health Care Organisations, NGOs, Local Health Districts and the Australian Indigenous Health*info*Net directory.

A variety of services and programs were identified for each LGA within the HNECC PHN region, where most LGAs had 3 or more services/programs addressing each chronic disease. LGAs with limited services/programs included Uralla, where no services were identified, and Gwydir where one service was identified for diabetes only. Due the close proximity of Uralla to Armidale, staff at Uralla Community Centre advise that patients visit Armidale Aboriginal health services. LGAs with a higher number of services/programs identified across each area of chronic illness included Liverpool Plains and Inverell, each with 6 or more services for each area of chronic illness.

Whilst this mapping activity provides a summary of services throughout the HNECC PHN region, further work is required to:

- Capture services and programs provided by private primary health care providers; and
- Understand issues in relation to availability, accessibility, appropriateness and effectiveness of Aboriginal specific health services and programs.

HNECC will continue to build upon this information with further data collection and consultation with key stakeholders.

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## Appendix

Health service mapping information - Aboriginal chronic disease specific programs.

### Definitions

VOS: Visiting Optometrist Scheme - First established in 1975, VOS supports optometrists to deliver outreach optometric services to remote and very remote locations, and rural communities with an identified need for optometric services. VOS was expanded in 2009-10 to provide increased optometry services to Aboriginal and Torres Strait Islander peoples.

MOICDP: Medical Outreach Indigenous Chronic Disease Program - An outreach program that supports multidisciplinary teams and individual health practitioners to provide services to Aboriginal patients in regional, remote and urban locations (ASGC-RA 1-5). MOICDP focuses on addressing chronic conditions that have been, or are likely to be, present for six months or more.

CCSS: Care Coordination Supplementary Services

CtG: Closing the Gap



LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
Armidale Dumaresq	Optometry – Brien Holden Vision Institute (VOS)  Podiatrist – HealthWISE NENW (MOICDP)  Aboriginal Health Worker- Eye health- Armajun Aboriginal Health Service (MOICDP)  GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW  Breast Screen NSW- Armidale Aboriginal Health Service- Mobile Service  NSW Aboriginal	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW	GP- Chronic disease- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW  Tai Chi- HealthWISE NENW

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease support clinic- HealthWISE NENW	NENW  NSW Aboriginal Quitline- Aboriginal Quitline Advisors		Quitline- Aboriginal Quitline Advisors			
Cessnock	Dietitian/Nutritionist – HPC (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Dietitian/Nutritionist – HPC (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Dungog	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline-	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		Aboriginal Quitline Advisors					
Glen Innes Severn	Optometry – Brien Holden Vision Institute (VOS)  Dietitian/Nutritionist – Armajun Aboriginal Health Service (MOICDP)  Podiatrist – HealthWISE NENW (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse-	Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW	Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Dietitian/Nutritionist – Armajun Aboriginal Health Service (MOICDP)  Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Aboriginal Health Worker- Armajun Aboriginal Health Service (MOICDP)  GP- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- Armajun Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)	(MOICDP)  NSW Aboriginal Quitline- Aboriginal Quitline Advisors					
Gloucester	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Registered Nurse- Tobwabba AMS (MOICDP)  GP chronic disease- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
Gosford	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>Aunty Jean’s Chronic disease outreach program- CCPC</p>	<p>Nurse Clinical Specialist- Central Coast Primary Care (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>Aunty Jean’s Chronic disease outreach program- CCPC</p>	<p>Exercise Physiologist- Central Coast Primary Care (MOICDP)</p> <p>Nurse Clinical Specialist- Central Coast Primary Care- CtG (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care (MOICDP)</p> <p>Registered Nurse Nunyara Aboriginal Health Unit - CC LHD</p> <p>Aboriginal Health Worker Nunyara Aboriginal Health Unit – CC LHD</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		Primary Care-CCSS (MOICDP)  NSW Aboriginal Quitline-Aboriginal Quitline Advisors					Management – Central Coast Primary Care-CCSS (MOICDP)  Aunty Jean’s Chronic disease outreach program- CCPC
Great Lakes	Dietitian/Nutritionist – HPC (MOICDP)  Podiatrist – HPC (MOICDP)  Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline-Aboriginal Quitline Advisors	Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Endocrinology – HPC (RHOF)  Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Dietitian/Nutritionist – HPC (MOICDP)  Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Physiotherapist – Tobwabba AMS (MOICDP)  Aboriginal Health Worker- Tobwabba AMS (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Greater Taree	Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)	Nurse Practitioner- Biripi Aboriginal Corporation	Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)	Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)	Nurse practitioner- Nephrology- Biripi Aboriginal Corporation Medical	Dietitian/Nutritionist- Biripi Aboriginal Corporation Medical Centre (MOICDP)	Exercise Physiologist- Biripi Aboriginal Corporation

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Diabetes Educator- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Podiatrist- Hunter Primary Care (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Medical Centre (MOICDP)  Aboriginal Health Worker- Biripi Aboriginal Corporation  Medical Centre (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Cardiologist- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Cardiac Technician- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Centre (MOICDP)  Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Dietitian/Nutritionist- Hunter Primary Care (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Medical Centre (MOICDP)  Nurse Practitioner- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- Biripi Aboriginal Corporation Medical Centre (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Gunnedah	Optometry – Brien Holden Vision Institute (VOS)  Dietitian/Nutritionist – HealthWISE NENW (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic	Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease management- HealthWISE NENW	Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease management- HealthWISE NENW	Aboriginal Health Worker- HealthWISE NENW (MOICDP)  Registered Nurse- Chronic disease management- HealthWISE NENW	Dietitian/Nutritionist – HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Exercise Physiologist – HealthWISE NENW (MOICDP)  Aboriginal Health Worker- HealthWISE

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Diabetes Educator – HealthWISE NENW (MOICDP) Podiatrist – HealthWISE NENW (MOICDP) Aboriginal Health Worker- HealthWISE NENW (MOICDP) Registered Nurse- Chronic disease management- HealthWISE NENW Eye Clinic- HealthWISE NENW Podiatry Clinic- HealthWISE NENW Diabetes Clinic- HealthWISE NENW	disease management- HealthWISE NENW NSW Aboriginal Quitline- Aboriginal Quitline Advisors		NSW Aboriginal Quitline- Aboriginal Quitline Advisors		Registered Nurse- Chronic disease management- HealthWISE NENW Kick Start for Kooris (Men and women’s lifestyle modification)- HealthWISE NENW	NENW (MOICDP) Registered Nurse- Chronic disease management- HealthWISE NENW Kick Start for Kooris (Men and women’s lifestyle modification)- HealthWISE NENW Heart Foundation Women’s Walking Group- HealthWISE NENW Men’s Health Pool Sessions- HealthWISE NENW Exercise Physiotherapy Clinic- HealthWISE NENW



LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
Guyra	<p>Podiatrist – HealthWISW NENW (MOICDP)</p> <p>Aboriginal Health Worker- Eye health- Armajun Aboriginal Health Service (MOICDP)</p> <p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>Optometry- Brien Holden Vision Institute (VOS)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p>	<p>Registered Nurse- HealthWISE NENW (MOICDP)</p> <p>Aboriginal Health Worker- HealthWISE NENW (MOICDP)</p> <p>GP- Armajun Aboriginal Health Service (MOICDP)</p>
Gwydir	Optometry – NSW RDN (VOS)	NSW Aboriginal Quitline- Aboriginal Quitline Advisors		NSW Aboriginal Quitline- Aboriginal Quitline Advisors			
Inverell	Optometry – Brien	ENT Surgery-	Cardiologist – HNE	Chronic care nurse-	Chronic care nurse-	Dietitian/Nutritionist	Optometry –

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Holden Vision Institute (VOS)	Armajun Aboriginal Health Service (HEBHL)	LHD (MOICDP)	Armajun Aboriginal Health Service (MOICDP)	Armajun Aboriginal Health Service (MOICDP)	– Armajun Aboriginal Health Service (MOICDP)	Brien Holden Vision Institute (VOS)
	Aboriginal Health Worker- Eye Health- Armajun Aboriginal Health Service (MOICDP)	Chronic care nurse- Armajun Aboriginal Health Service (MOICDP)	Cardiac Technician – HNE LHD (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)	Chronic care nurse- Armajun Aboriginal Health Service (MOICDP)	Aboriginal Health Worker- Eye Health- Armajun Aboriginal Health Service (MOICDP)
	Chronic care nurse- Armajun Aboriginal Health Service (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)	Cardiac Rehabilitation – HNE LHD (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)	Chronic care nurse- Armajun Aboriginal Health Service (MOICDP)
	Registered Nurse- HealthWISE NENW (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Chronic care nurse- Armajun Aboriginal Health Service (MOICDP)	Nurse Clinical Specialist- HNE LHD (MOICDP)	Nurse Clinical Specialist- HNE LHD (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)
	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	Nurse Clinical Specialist- HNE LHD (MOICDP)	Registered Nurse- HealthWISE NENW (MOICDP)	Aboriginal Health Education- HNE LHD (MOICDP)	Aboriginal Health Education- HNE LHD (MOICDP)	Nurse Clinical Specialist- HNE LHD (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)
	Nurse Clinical Specialist- HNE LHD (MOICDP)	Aboriginal Health Education- HNE LHD (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)	NSW Aboriginal Quitline- Aboriginal Quitline Advisors		Aboriginal Health Education- HNE LHD (MOICDP)	Aboriginal Health Worker- HealthWISE NENW (MOICDP)
	Aboriginal Health Education- HNE LHD (MOICDP)		Nurse Clinical Specialist- HNE LHD (MOICDP)				Nurse Clinical Specialist- HNE LHD (MOICDP)
			Aboriginal Health Education- HNE LHD (MOICDP)				Aboriginal Health Education- HNE LHD (MOICDP)

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		NSW Aboriginal Quitline- Aboriginal Quitline Advisors					
Lake Macquarie	GP- Awabakal Ltd (MOICDP)  Diabetes Educator- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	GP- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	GP- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	GP- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	GP- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	GP- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	GP- Awabakal Ltd (MOICDP)  Diabetes Educator- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Liverpool Plains	Optometry – Brien Holden Vision Institute (VOS)  Nurse Clinical	Nurse Clinical Specialist – HNE LHD (MOICDP)  Aboriginal	Cardiologist – HNE LHD (MOICDP)  Nurse Clinical Specialist – HNE LHD	Nurse Clinical Specialist – HNE LHD (MOICDP)  Aboriginal Health	Nurse Clinical Specialist – HNE LHD (MOICDP)  Aboriginal Health	Nurse Clinical Specialist – HNE LHD (MOICDP)  Aboriginal Health	Nurse Clinical Specialist – HNE LHD (MOICDP)  Aboriginal Health

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Specialist – HNE LHD (MOICDP)	Health Education Officer – HNE LHD (MOICDP)	(MOICDP) Cardiac Technician – HNE LHD (MOICDP)	Education Officer – HNE LHD (MOICDP)	Education Officer – HNE LHD (MOICDP)	Education Officer – HNE LHD (MOICDP)	Education Officer – HNE LHD (MOICDP)
	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)
	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	Aboriginal Health Education Officer – Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)
	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	Nurse Clinical Consultant - Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)
	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	General Practitioner Chronic Disease - Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)
	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	Registered Nurse – Walhallow	Registered Nurse – Walhallow Aboriginal Health Service (MOICDP)	NSW Aboriginal Quitline- Aboriginal Quitline Advisors			

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		Aboriginal Health Service (MOICDP)  NSW Aboriginal Quitline- Aboriginal Quitline Advisors					
Maitland	Dietitian/Nutritionist – Awabakal Ltd (MOICDP)  Podiatrist - Awabakal Ltd (MOICDP)  Diabetes Educator - Awabakal Ltd (MOICDP)  General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG	General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker - Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline	General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Dietitian/Nutritionist – Awabakal Ltd (MOICDP)  General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker -Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	General Practitioner – Awabakal Ltd (MOICDP)  Aboriginal Health Worker - Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Registered Nurse-HPC- CCSS	Advisors					
Moree Plains	Optometry – Brien Holden Vision Institute (VOS)	Respiratory Physician – HNE LHD (MOICDP)	Cardiologist - HealthWISE NENW (MOICDP)	Registered Nurse-HNE LHD (MOICDP)	Registered Nurse-HNE LHD (MOICDP)	Dietitian/Nutritionist – HNE LHD (MOICDP)	Physiotherapist – HNE LHD (MOICDP)
	Diabetes Educator – HNE LHD (MOICDP)	Nurse- Clinical Consultant Respiratory - HNE LHD (MOICDP)	Cardiac Rehabilitation – HNE LHD (MOICDP)	Endocrinology – HealthWISE NENW (MOICDP)	Endocrinology – HealthWISE NENW (MOICDP)	Dietitian/Nutritionist – HealthWISE NENW (MOICDP)	Registered Nurse- HNE LHD (MOICDP)
	Dietitian/Nutritionist – HNE LHD (MOICDP)		Registered Nurse-HNE LHD (MOICDP)	Aboriginal Health Worker – HNE LHD (MOICDP)	Aboriginal Health Worker – HNE LHD (MOICDP)	Dietitian/Nutritionist – HNE LHD (MOICDP)	Aboriginal Health Worker – HNE LHD (MOICDP)
	Endocrinology – HealthWISE NENW (MOICDP)	Registered Nurse- HNE LHD (MOICDP)	Aboriginal Health Worker – HNE LHD (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Registered Nurse-HNE LHD (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)
	Dietitian/Nutritionist – HealthWISE NENW (MOICDP)	Aboriginal Health Worker – HNE LHD (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Workers- Pius X Aboriginal Corporation	Aboriginal Health Workers- Pius X Aboriginal Corporation	Aboriginal Health Worker – HNE LHD (MOICDP)	
	Diabetes Educator - HealthWISE NENW (MOICDP)	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Workers- Pius X Aboriginal Corporation	General Practitioner-Pius X Aboriginal Corporation	General Practitioner-Pius X Aboriginal Corporation	Aboriginal Health Education Officer – HNE LHD (MOICDP)	Men’s and Women’s exercise class-Pius X Aboriginal Corporation
	Dietitian/Nutritionist – HNE LHD (MOICDP)		General Practitioner-Pius X Aboriginal Corporation	Nurse- Pius X Aboriginal Corporation	Nurse- Pius X Aboriginal Corporation	Aboriginal Health Workers- Pius X Aboriginal Corporation	Aboriginal Health Workers- Pius X Aboriginal Corporation
	Podiatrist – HNE LHD (MOICDP)	Aboriginal Health Workers-Pius X				General Practitioner-Pius X Aboriginal Corporation	
	Registered Nurse-	Aboriginal	Nurse- Pius X	NSW Aboriginal			

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	<p>HNE LHD (MOICDP)</p> <p>Aboriginal Health Worker – HNE LHD (MOICDP)</p> <p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Aboriginal Health Workers- Pius X Aboriginal Corporation</p> <p>General Practitioner- Pius X Aboriginal Corporation</p> <p>Nurse- Pius X Aboriginal Corporation</p>	<p>Corporation</p> <p>General Practitioner- Pius X Aboriginal Corporation</p> <p>Nurse- Pius X Aboriginal Corporation</p> <p>Quitting Smoking- Pius X Aboriginal Corporation</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Aboriginal Corporation</p>	<p>Quitline- Aboriginal Quitline Advisors</p>		<p>Nurse- Pius X Aboriginal Corporation</p>	<p>General Practitioner- Pius X Aboriginal Corporation</p> <p>Nurse- Pius X Aboriginal Corporation</p>
Muswellbrook	<p>Endocrinology – HNE LHD (MOICDP)</p> <p>Diabetes Educator – HNE LHD (MOICDP)</p> <p>Dietitian/Nutritionist – HNE LHD (MOICDP)</p>	<p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Nurse Clinical Specialist – HNE LHD (MOICDP)</p>	<p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Nurse Clinical Specialist – HNE LHD (MOICDP)</p> <p>Aboriginal Health</p>	<p>Endocrinology – HNE LHD (MOICDP)</p> <p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Nurse Clinical Specialist – HNE LHD</p>	<p>Endocrinology – HNE LHD (MOICDP)</p> <p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Nurse Clinical Specialist – HNE LHD</p>	<p>Dietitian/Nutritionist – HNE LHD (MOICDP)</p> <p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Nurse Clinical Specialist – HNE LHD</p>	<p>Aboriginal Health Education Officer – HNE LHD (MOICDP)</p> <p>Physiotherapist – HNE LHD (MOICDP)</p>

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Podiatrist – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP) Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Diabetes special doctor- Muswellbrook Hospital Campus- HNE LHD Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD Diabetes Educator- Muswellbrook Hospital Campus-	Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Worker- HPC- CtG Registered Nurse- HPC- CCSS Cardiologist- Muswellbrook Hospital Campus- HNE LHD Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD	(MOICDP) Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD NSW Aboriginal Quitline- Aboriginal Quitline Advisors	(MOICDP) Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD	(MOICDP) Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Dietician- Muswellbrook Hospital Campus- HNE LHD Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD	Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Worker- HPC- CtG Registered Nurse- HPC- CCSS Clinical nurse consultant- Muswellbrook Hospital Campus- HNE LHD



LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	HNE LHD						
Narrabri	Dietitian/Nutritionist – HealthWISE NENW (MOICDP) Diabetes Educator - HealthWISE NENW (MOICDP) Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Worker - HealthWISE NENW (MOICDP) Respiratory Physician – HNE LHD (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP) NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP) NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP)	Dietitian/Nutritionist – HealthWISE NENW (MOICDP) Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP)	Aboriginal Health Worker - HealthWISE NENW (MOICDP) Physician General – HNE LHD (MOICDP) Nurse Clinical Specialist – HNE LHD (MOICDP) Physiotherapist – HNE LHD (MOICDP) Aboriginal Health Education Officer – HNE LHD (MOICDP)
Newcastle	Optometry –	Aboriginal	Cardiologist –	Aboriginal Health	Aboriginal Health	Aboriginal Health	Aboriginal Health

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Port Stephens	Dietitian/Nutritionist – Awabakal Ltd (MOICDP)  Diabetes Educator – Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Dietitian/Nutritionist – Awabakal Ltd (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS
Singleton	Physician General – Ungooroo Aboriginal Corporation (MOICDP)  Dietitian/Nutritionist	Physician General – Ungooroo Aboriginal Corporation (MOICDP)	Physician General – Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health	Physician General – Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health	Physician General – Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health	Physician General – Ungooroo Aboriginal Corporation (MOICDP)  Dietitian/Nutritionist -	Physician General – Ungooroo Aboriginal Corporation (MOICDP)

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	- Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation	Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation	Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation	Physiotherapist - Ungooroo Aboriginal Corporation (MOICDP)  Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  GP services- Ungooroo Aboriginal Corporation
Tamworth Regional	Optometry – Brien Holden Vision Institute (VOS)  Diabetes Educator – Tamworth Aboriginal Medical Service (MOICDP)  Dietitian/Nutritionist – Tamworth Aboriginal Medical	ENT Surgery – HNE LHD (HEBHBL)  Nurse Theatre - HNE LHD (HEBHBL)  Nurse Anaethetist - HNE LHD (HEBHBL)	Dietitian/Nutritionist – Tamworth Aboriginal Medical Service (MOICDP)  Cardiologist - Tamworth Aboriginal Medical Service (MOICDP)  Cardiac Technician - Tamworth Aboriginal	Dietitian/Nutritionist – Tamworth Aboriginal Medical Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic-	Dietitian/Nutritionist – Tamworth Aboriginal Medical Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic-	Dietitian/Nutritionist – Tamworth Aboriginal Medical Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic-	Exercise Physiologist - Tamworth Aboriginal Medical Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW CtG

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Service (MOICDP)  Podiatrist – Tamworth Aboriginal Medical Service (MOICDP)  Optometrist- Tamworth Aboriginal Medical Service  General medicine specialist- Tamworth Aboriginal Medical Service  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic- HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW	Nurse Recovery - HNE LHD (HEBHBL)  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic- HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service	Medical Service (MOICDP)  Aboriginal Health Worker- HealthWISE NENW CtG  Registered Nurse- Chronic disease support clinic- HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service	HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service	HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service	Registered Nurse- Chronic disease support clinic- HealthWISE NENW CCSS  Aboriginal Health Practitioner- chronic disease support clinic- HealthWISE NENW  Soul Fit- Men's exercise group- HealthWISE NENW  Hydrotherapy pool sessions- HealthWISE NENW  General medicine specialist- Tamworth Aboriginal Medical Service

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		NSW Aboriginal Quitline- Aboriginal Quitline Advisors					
Tenterfield	Dietitian/Nutritionist - Armajan Aboriginal Health Service (MOICDP)  Aboriginal Health Worker: Eye Health - Armajan Aboriginal Health Service (MOICDP)  Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)	Registered Nurse – HealthWISE NENW (MOICDP)  Aboriginal Health Worker - HealthWISE NENW (MOICDP)
Upper Hunter Shire	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS  NSW Aboriginal Quitline- Aboriginal	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS	Aboriginal Health Worker- HPC- CtG  Registered Nurse- HPC- CCSS

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
		NSW Aboriginal Quitline- Aboriginal Quitline Advisors		Quitline Advisors			
Uralla		NSW Aboriginal Quitline- Aboriginal Quitline Advisors		NSW Aboriginal Quitline- Aboriginal Quitline Advisors			
Walcha	Optometry – Brien Holden Vision Institute (VOS)  Aboriginal Health Worker Eye Health – Armajan Aboriginal Health Service (MOICDP)  Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW  NSW Aboriginal Quitline-	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW  NSW Aboriginal Quitline- Aboriginal Quitline Advisors	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW	Registered Nurse- HealthWISE NENW  Aboriginal Health Worker- HealthWISE NENW  Chronic disease clinic in partnership with HNELHD Indigenous Chronic Disease HealthWISE NENW

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	HealthWISE NENW	Aboriginal Quitline Advisors					
Wyong	<p>Bungree Aboriginal Association Inc. – Bungree Podiatry program</p> <p>Endocrinology – Yerin (MOICDP)</p> <p>Diabetes Educator – Yerin (MOICDP)</p> <p>Dietitian/Nutritionist – Yerin (MOICDP)</p> <p>Podiatrist – Yerin (MOICDP)</p> <p>Optometrist- Yerin</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease</p>	<p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Dietitian/Nutritionist – Yerin (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>	<p>Endocrinology – Yerin (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>NSW Aboriginal Quitline- Aboriginal Quitline Advisors</p>	<p>Endocrinology – Yerin (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p>	<p>Dietitian/Nutritionist – Yerin (MOICDP)</p> <p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>Aunty Jean's Chronic disease outreach program- CCPC</p>	<p>Aboriginal Health Worker- Chronic disease management- Central Coast Primary Care- CtG (MOICDP)</p> <p>Registered Nurse Chronic Disease Management – Central Coast Primary Care- CCSS (MOICDP)</p> <p>Aunty Jean's Chronic disease outreach program- CCPC</p> <p>Physiotherapist- Yerin</p>

LGA	Diabetes	Respiratory Disease	Cardiovascular Disease	Cancer	Chronic Kidney Disease	Nutrition	Physical Activity
	Management – Central Coast Primary Care- CCSS (MOICDP)						





HNECC PHN ACKNOWLEDGES THE TRADITIONAL OWNERS AND CUSTODIANS OF THE  
LANDS THAT WE LIVE AND WORK ON AS THE FIRST PEOPLE OF THIS COUNTRY