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HUNTER NEW ENGLAND
AND CENTRAL COAST

An Australian Government Initiative

Health Planning Compass

2018

HNECC PHN acknowledges the traditional owners and custodians of the land that we live and work on as the First People of this Country.

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Welcome to the Hunter New England and Central Coast (HNECC) Primary Health Network 2018 Health Planning Compass



This document describes the populations and provides a valuable picture of the current health and social landscapes across the Hunter, New England and Central Coast region of New South Wales. The information and findings presented have been fundamental in identifying gaps in access to health services, establishing the priority health and access needs for our communities and forming recommendations for further in-depth analysis. It provides us with the confidence to make evidence and resource based decisions and to create and source effective solutions to local problems. It will assist in planning for better primary health care and establish opportunities for health gain across our geographical footprint.

What is a Primary Health Network?

In July 2015, the Federal Government introduced changes to the way primary care services are managed across Australia, replacing Medicare Locals with Primary Health Networks (PHNs). The aim of this change is to strengthen primary care by redirecting funding to frontline health services – improving health care for our community.

'Primary Health Networks (PHNs) have been established with the key objectives of increasing the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes, and improving coordination of care to ensure patients receive the right care in the right place at the right time'
Australian Government Department of Health 2015.

In addition to addressing the general health of the populations, Primary Health Networks have key priorities for targeted work in the following areas:

Aboriginal and Torres Strait Islander Health

Population Health

Health Workforce

Mental Health

eHealth

Key measures of population health include:

Mental Health Treatment Rates

Cancer Screening Rates

Potentially Preventable Hospitalisations

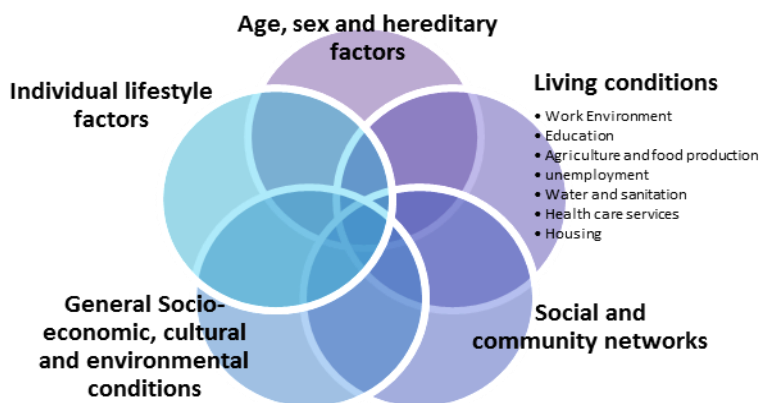
Immunisation Rates





Determinants of Health

Our individual health and the health of our communities is influenced by many factors. Social, environmental and economic elements connected to us and where we live, work and play, play significant roles in determining our health potential. The social determinants of health, as presented by Dahlgren and Whitehead's model below indicate that health is so much more than being able to access a doctor or hospital when unwell.



Altering or modifying lifestyle choices can have a positive impact on the health of communities and individuals, essentially lowering the prevalence of chronic diseases such as Type 2 Diabetes, Cardiovascular Disease, respiratory illnesses and cancers. Furthermore, how individuals and communities interact with each other and access health services and opportunities for health also impact our thoughts about our health status and the wellness of our communities. The Health Planning Compass aims to consider the many elements of health presented above.



Concepts of Need

Bradshaw (1972) suggests there are four dimensions or different types of need. It is important when undertaking a needs assessment to consider each type of need (described below) to increase the chance of constructing a comprehensive picture of community problems and ensure that 'real' need is identified.

Normative need	Felt need	Expressed need
<ul style="list-style-type: none"> • This need refers to what expert opinion based on research defines as need. Disease prevention by way of vaccination is a good example. 	<ul style="list-style-type: none"> • Need perceived by the individual. What people as individuals and communities say they want and feel they need. 	<ul style="list-style-type: none"> • This need refers to what can be inferred about the health need of a community by examining and observing the use of services.

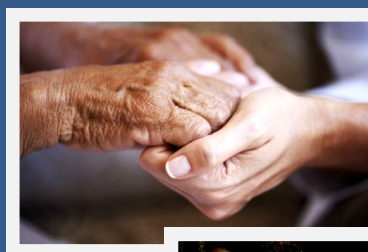
But that's not all, we additionally consider cost containment, capacity to benefit and general demand and supply in determining best health outcomes for communities and individuals. Additionally, we look outside the remit of the health sector to ensure that need is assessed comprehensively and in context with local factors and nuances.

Acknowledgement of traditional owners

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.

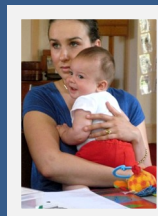
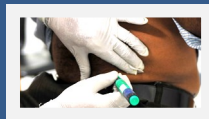
Aboriginal Nations within the HNECC region include;

- Anaiwan and Nganyaywana
- Awabakal
- Biripi
- Darkinjung
- Dunghutti
- Geawegal
- Kamilaroi
- Kuring-gai
- Ngarabal
- Wonnaru
- Worimi



Comparative need

- This need is derived from examining the services provided in one area to one population and using this information as a basis to determine the sort of services required in another area of similar population.



What is Quadruple AIM?

Quadruple AIM is an approach by which planned health outcomes consider four very important factors within the health and social arena.

Population Health – here the health of the whole population or a smaller sub-group is considered and investigated to ascertain where health improvements and outcomes could be achieved.

Patient experience – this is considered extensively as it has a major impact on how and why people access services. The experience within the health system and how it is navigated can either act as a barrier to health or an enabler to gaining better health.

Cost per head of population – is a major consideration in planning for health improvement. Not only is the cost to the health system explored but the cost to the individual, their family and way of life. While some of this comes down to 'bang-for-buck', considering cost is an essential component to successful and meaningful service delivery.

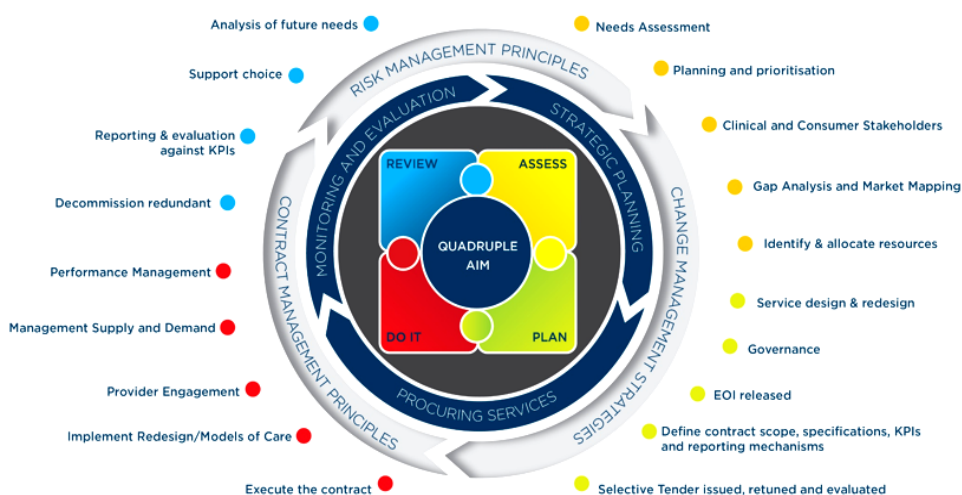
Improving the work life of healthcare providers – The key personnel in the delivery and planning for health, such as the medical and wider health workforce should be a key factor in considering and applying population-wide health considerations. Involving health professionals, supporting their work and industry is essential to health care provision and the continued efforts in identifying health and social gaps and potential solutions.



Commissioning Health Services



Commissioning is a process that HNECC PHN uses to plan and purchase health care services that address the needs of our populations. This involves a rigorous health service planning process with significant clinician, consumer and stakeholder involvement in the development of services, as well as procurement that focuses on quality, value for money and delivering health outcomes. Continual performance monitoring and evaluation of commissioned services ensures they continue to meet the needs of the population and achieve their intended aims. This decision-making process is 'cyclical' and so has been termed the commissioning cycle. The model presented below describes our commissioning process and is centred around the elements of population health, the patient experience and cost per capita.



Data Sources

How do we know what we know? We use a number of valuable data sources to enhance our understanding of the health landscape across our vast region.

We access, compile and analyse multiple high quality data obtained from:

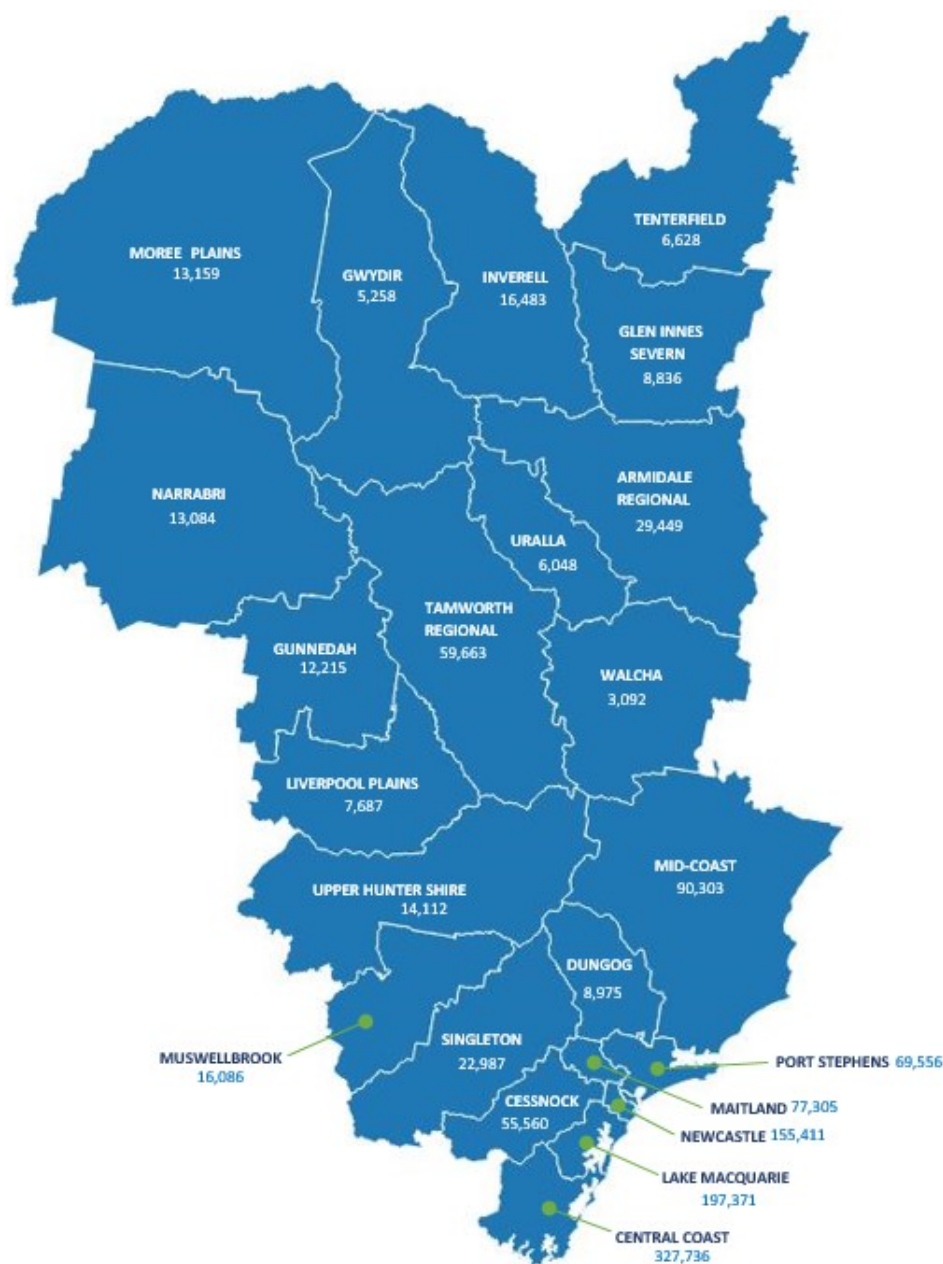
- Health Statistics NSW, NSW Ministry of Health
- Public Health Information Development Unit (PHIDU), Torrens University Australia
- Australian Bureau of Statistics
- Our Local Health Districts (LHD), Hunter New England LHD and the Central Coast LHD
- Department of Planning and Infrastructure
- Australian Institute of Health and Welfare
- NSW Cancer Institute
- Our local GPs and health providers
- Engagement and consultation with communities, individuals and minority groups in our region
- Engagement and consultation with health professionals and organisations across a variety of sectors including Local Government, Education and Welfare.



Landscape and Population Snapshot

The HNECC region is a large and diverse geographic area incorporating 23 Local Government Areas (LGAs). HNECC is the second largest PHN in New South Wales, covering 133,812 km². It reaches from just north of Sydney, across the north west of NSW, to the Queensland border. The HNECC region is serviced by Hunter New England LHD and Central Coast LHD.

The URP (usual resident population) of the HNECC region in 2016 was 1,217,004 people or 16.3% of the state population. Females accounted for 51% (620,752 people) of the total population and males accounted for 49% (596,230 people). The population of each LGA within the HNECC region is displayed in the map below.



Now 23 LGAs!

Prior to May 2016, the HNECC region covered 27 LGAs, however Wyong and Gosford LGAs were merged to create Central Coast LGA; Armidale Dumaresq and Guyra LGAs were merged into Armidale Regional LGA; and Gloucester, Greater Taree and Great Lakes LGAs were merged into Mid-Coast LGA as shown in the map to the left. This map also shows the population of each LGA.

This document provides information based on the current 23 LGAs where possible, however in some instances publicly accessible data is only available for the historical 27 LGAs.

Geographical Classification

Within the Australian Standard Geographical Classification—Remoteness Areas (ASGC-RA), which was developed to allow for quantitative comparisons between 'city' and 'country', the HNECC region has populations falling within the categories of:

- Major Cities
- Inner Regional
- Outer Regional
- Remote

Fast Fact

The HNECC region is geographically the size of England!

Health Services

Some of the main workforce and services supporting and promoting health across the region are presented right.

Service Details

General Practitioners	1250 (estimate)
General Practices	410
Aboriginal Medical Services	12 organisations with 18 AMS locations
Local Health Districts	2
Public Hospitals	31 (27 HNE + 4 CC)
Multi-Purpose Services	10
Mental Health	2
Psychiatric Hospitals	
Pharmacies	303

At a Glance



Over 1.2 million people live in our region

We are the second largest PHN in NSW and cover a large geographical area (133,812km²)

Our region spans across **23 Local Government Areas (LGAs)** and has a mix of metropolitan, regional and rural areas

The **population** of the HNECC region is predicted to **increase** by 19.5% by 2031 to well over 1.4 million people

19.1% of our population is **aged 65 years and over** (15.2% nationally)

5.4% (65,183) of people in our region identify as **Aboriginal and Torres Strait Islander** (2.8% nationally)

The **Socio-Economic Index for Areas (SEIFA)** - Index of Relative Social Disadvantage (IRSD) ranges from 910 to 997 (Australia 1,000)

Demographics



The following pages present data related to the demographics of the people of the HNECC region. The heat maps used provide a graphical representation of the data, where colour coding represents different grouping of values e.g. smaller values are represented by lighter colours and larger values are represented by darker colours.

Population Growth

The graphic below illustrates estimated population growth by LGA across the HNECC region. Towards 2036, the HNECC population will grow to well over 1.4 million people with some LGAs showing substantial annual growth while others will experience population declines.

The LGAs expected to experience declines include:

- Glen Innes Severn, Gwydir, Liverpool Plains, Moree Plains, Narrabri, Tenterfield and Walcha.

Those LGAs which will experience the most growth to 2036 include:

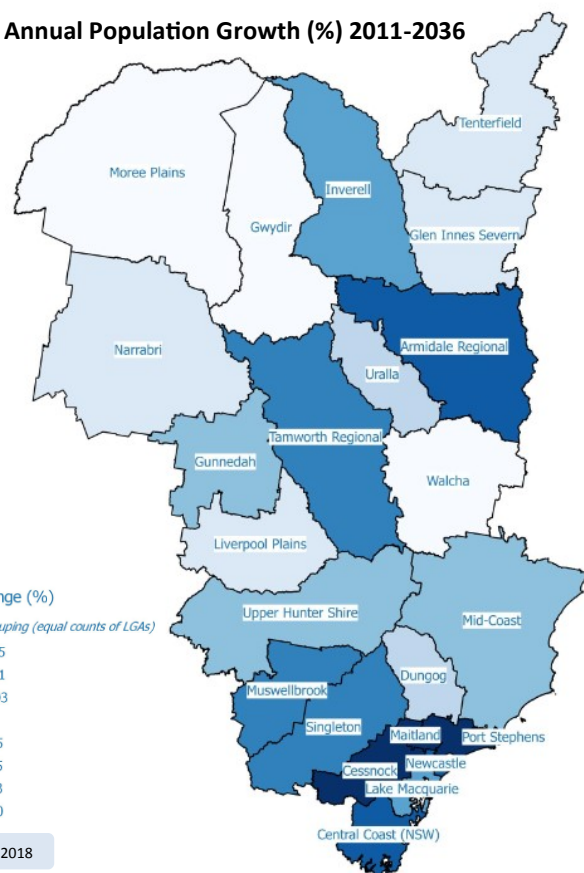
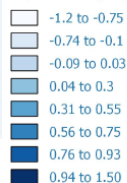
- Maitland, Port Stephens, Cessnock, Armidale Regional and Central Coast.

Average Annual Population Growth (%) 2011-2036

LGA	% growth
Armidale Regional	0.9
Central Coast (NSW)	0.8
Cessnock	1
Dungog	0
Glen Innes Severn	-0.7
Gunnedah	0.1
Gwydir	-1.2
Inverell	0.4
Lake Macquarie	0.4
Liverpool Plains	-0.1
Maitland	1.5
Mid-Coast	0.2
Moree Plains	-1.2
Muswellbrook	0.7
Narrabri	-0.5
Newcastle	0.8
Port Stephens	1.1
Singleton	0.6
Tamworth Regional	0.6
Tenterfield	-0.1
Upper Hunter Shire	0.3
Uralla	0
Walcha	-0.9

Population change (%)

* Quantile data grouping (equal counts of LGAs)



NSW Department of Planning and Environment 2018



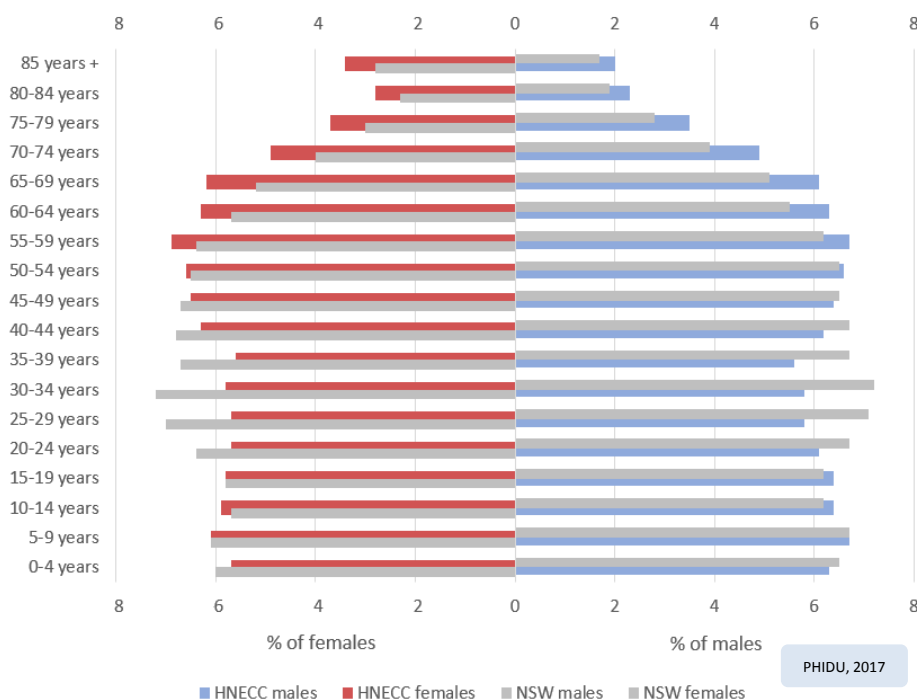
Median Age

Median ages across the HNECC region's LGAs vary greatly. From our oldest populations in Tenterfield (53 years), Mid-Coast (52 years), Walcha (48 years) and Gwydir (48 years) to our youngest in Muswellbrook (35 years), Armidale Regional (36 years), Maitland (36 years) and Singleton (36 years). An understanding of median age assists in planning for health and potential resource allocation based on likely disease burden and levels of dependency.



Demographics

Population Structure by Age and Sex,
HNECC and NSW, 2016



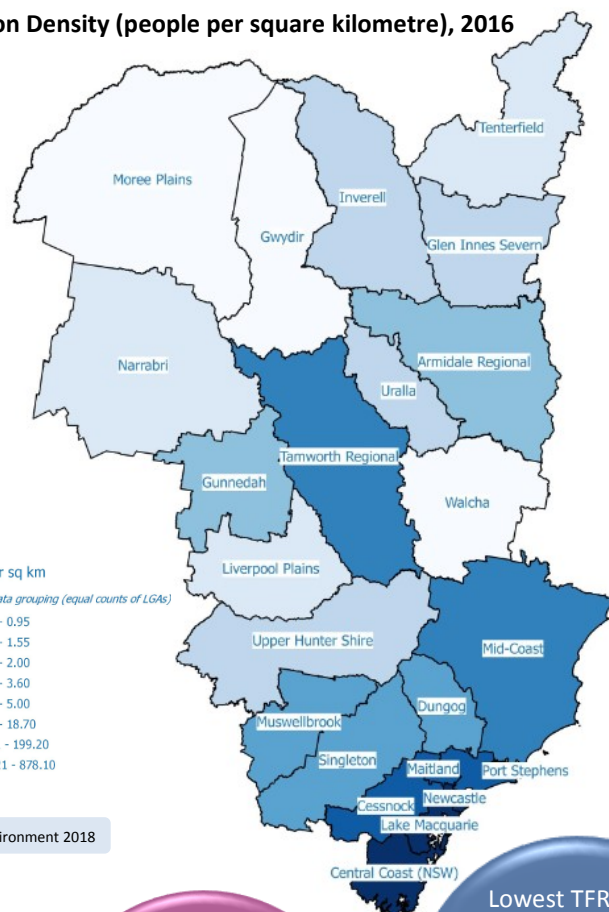
Population Density (people per square kilometre), 2016

LGA	People/sqkm
Armidale Regional	3.6
Central Coast (NSW)	201
Cessnock	28.4
Dungog	3.9
Glen Innes Severn	1.6
Gunnedah	2.6
Gwydir	0.5
Inverell	2
Lake Macquarie	310.2
Liverpool Plains	1.5
Maitland	198.6
Mid-Coast	9
Moree Plains	0.8
Muswellbrook	5
Narrabri	1
Newcastle	878.1
Port Stephens	86
Singleton	5
Tamworth Regional	6.2
Tenterfield	1
Upper Hunter Shire	1.8
Uralla	2
Walcha	0.5

People per sq km

* Quantile data grouping (equal counts of LGAs)

- 0.50 - 0.95
- 0.96 - 1.55
- 1.56 - 2.00
- 2.01 - 3.60
- 3.61 - 5.00
- 5.01 - 18.70
- 18.71 - 199.20
- 199.21 - 878.10



Age Structure

Based on 2016 URP, 19.9% (242,043) of the population living in the HNECC region were aged 65 years and over, which is higher than the NSW (16.3%) and Australian (15.7%) proportions, represented in the graph to the left. The LGAs with the highest proportion of the population aged 65 years and over include:

- Mid-Coast (30.1%)
- Tenterfield (27.5%)
- Gwydir (26.0%)
- Walcha (26.0%)
- Glen Innes Severn (25.9%)

There was a correspondingly low proportion of people aged 15 – 64 years in these areas, which creates cause for concern in relation to ongoing workforce availability and the need for more health services for an ageing population.

LGAs with the highest proportions of young people (0-14 years) across the region include:

- Muswellbrook (22.5%)
- Maitland (21.9%)
- Moree Plains (21.9%)
- Narrabri (21.3%)
- Singleton (21.2%)

Population Density

Population density refers to the number of people per square kilometre. As shown in the heat map and table to the left, population density varies substantially across this vast region from 0.5 people/km² in the LGAs of Gwydir and Walcha, to 878.1 people/km² in Newcastle LGA.

NSW Department of Planning and Environment 2018

Fast Fact

The Total Fertility Rate (TFR) is the total number of children born or likely to be born to a woman in her life time based on current age-specific birth rates.

TFR is an important health planning consideration when assessing the health and social needs of communities

Lowest TFRs are in Newcastle (1.8), Dungog (1.8), Armidale Regional (2.0), Central Coast (2.0) and Lake Macquarie (2.0) LGAs

Highest TFRs are in Gwydir (2.8), Walcha (2.7), Moree Plains (2.6) and Narrabri (2.6) LGAs

Aboriginal and Torres Strait Islander Population

In 2016, there were 65,183 people in the HNECC region who identified as being Aboriginal and Torres Strait Islander, equivalent to 5.4% of the resident population. This proportion is greater than the Australian average (2.8%).

The map to the right shows the population distribution for Aboriginal and Torres Strait Islander people across the region. The LGAs with the highest resident Aboriginal and Torres Strait Islander populations are located in the northern part of the region and include:

- Moree Plains (21.6%)
- Gunnedah (12.8%)
- Liverpool Plains (12.4%)
- Narrabri (12.2%)
- Tamworth Regional (10.1%)

Age Distribution

The age distribution of the Aboriginal and Torres Strait Islander population compared to the non-Indigenous population in the HNECC region is shown right.

The Aboriginal and Torres Strait Islander population has a considerably younger age profile than the non-Indigenous population due to higher rates of fertility and deaths occurring at younger ages. It is noted that:

- 55.5% of the Aboriginal and Torres Strait Islander population is aged under 24 years, compared to 29.7% of the non-Indigenous population.
- Only 4.8% of the Aboriginal and Torres Strait Islander population is aged over 65 years, compared to 20.1% of the non-Indigenous population.



Demographics

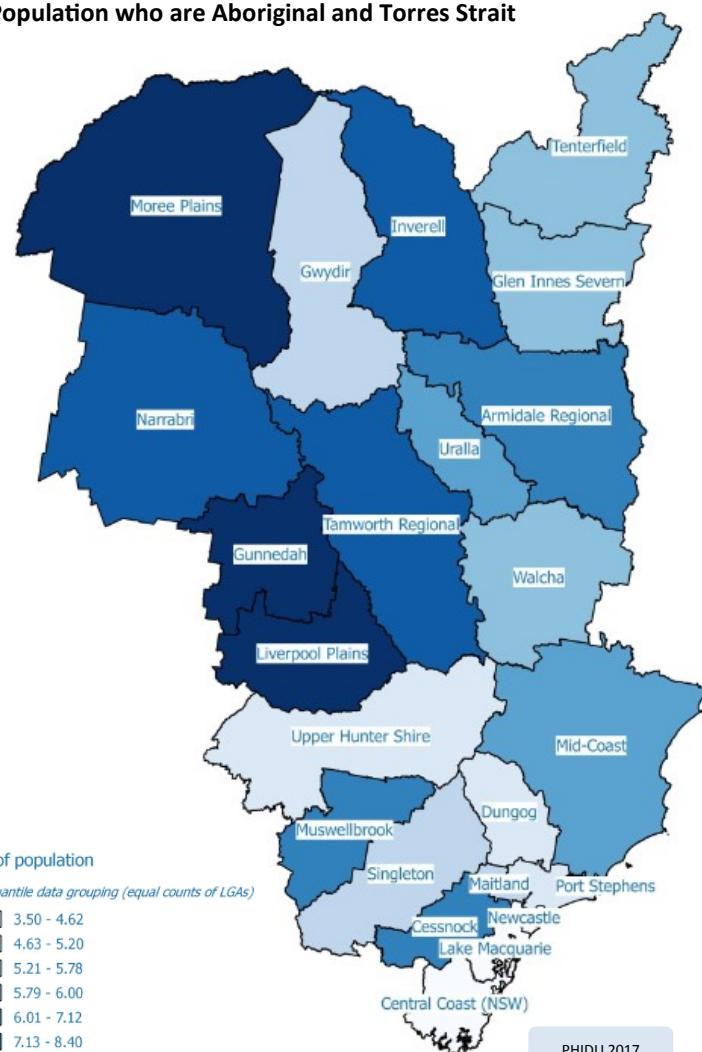
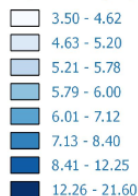


Proportion (%) of Population who are Aboriginal and Torres Strait Islander, 2016

LGA	%
Armidale Regional	7.4
Central Coast (NSW)	3.8
Cessnock	7.2
Dungog	5.1
Glen Innes Severn	6
Gunnedah	12.8
Gwydir	5.7
Inverell	8.5
Lake Macquarie	4.1
Liverpool Plains	12.4
Maitland	5.3
Mid-Coast	6.2
Moree Plains	21.6
Muswellbrook	8.3
Narrabri	12.2
Newcastle	3.5
Port Stephens	4.8
Singleton	5.7
Tamworth Regional	10.1
Tenterfield	6
Upper Hunter Shire	5.1
Uralla	6.9
Walcha	6

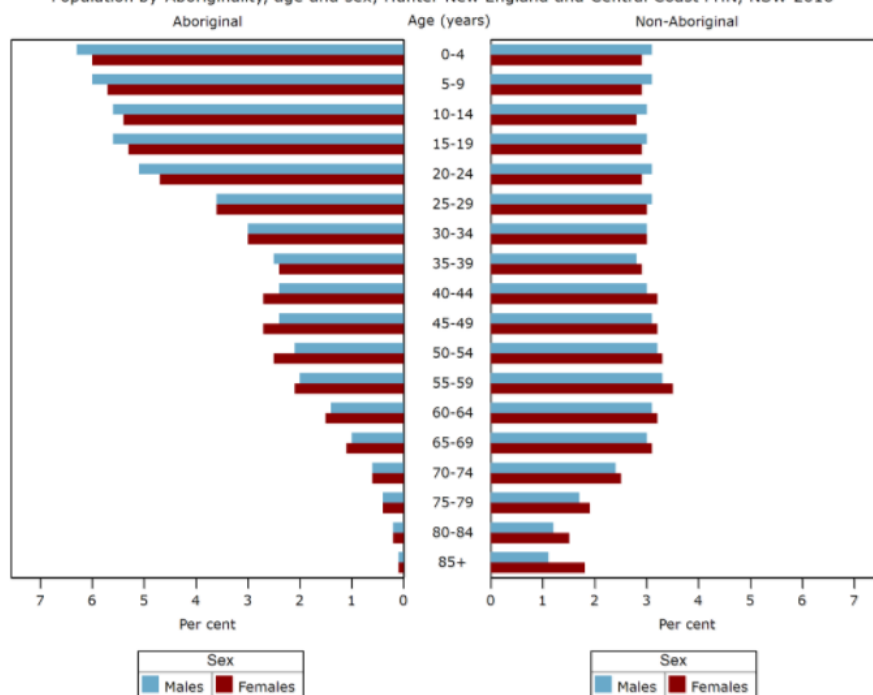
% of population

* Quantile data grouping (equal counts of LGAs)



PHIDU 2017

Population by Aboriginality, age and sex, Hunter New England and Central Coast PHN, NSW 2016*





Demographics

Country of Birth

	HNECC	Highest Proportions	Lowest Proportions	NSW
People born in predominantly NES countries	5.2%	Newcastle 9.2% Armidale Regional 7.8% Central Coast 6.2%	Dungog 1.4% Liverpool Plains 1.4% Gwydir 1.5%	21.0%
People born overseas reporting poor proficiency in English	0.5%	Newcastle 1.24% Armidale Regional 0.77% Central Coast 0.51%	Walcha 0.00% Liverpool Plains 0.00% Dungog 0.00%	3.8%

PHIDU 2017

“An equitable health system ensures that cultural and linguistic diversity is at the heart of service planning, service delivery and policy development”

(NSW Ministry of Health, 2012)

There are 63,184 people born in predominantly non-English speaking countries within the HNECC region

PHIDU 2017



Languages Spoken Other Than English

Language	Number of People	% of Population
Italian	6482	0.29
Spanish	6069	0.27
German	5483	0.24
Greek	4436	0.20
Arabic	4208	0.19
Macedonian	3470	0.15
French	3334	0.15
Thai	3083	0.14
Vietnamese	2828	0.13
Afrikaans	2699	0.12
Malayalam	2602	0.12
Hindi	2569	0.11
Dutch	2330	0.10
Polish	2216	0.099
Punjabi	1964	0.088
Russian	1814	0.081
Croatian	1556	0.069
Portuguese	1555	0.069
Urdu	1360	0.061
Indonesian	1343	0.060

ABS.Stat, 2018

Culturally and Linguistically Diverse (CALD) Communities

The majority of residents (82.3%) of the HNECC region were born in Australia (NSW 65.5%).

As presented in the table to the left, those people who were born in predominantly non-English speaking (NES) countries account for 5.2% of our population with the highest proportions in Newcastle and Armidale Regional LGAs.

People who were born overseas reporting poor proficiency in English account for 0.5% of the region's population compared to the NSW proportion of 3.8%.

PHIDU 2017

Languages Spoken Other Than English

Over the past 10 years there has been substantial growth in the population who identify as being from a CALD background. As shown to the left, the top 5 languages other than English spoken in the HNECC region are Italian, Spanish, German, Greek and Arabic. Interpreter services are available for people who do not speak English as a first language.

ABS.Stat, 2018

Carers

There are over 125,115 (12.6%) people aged 15 years and over providing unpaid assistance to persons with a disability in the HNECC region (NSW 11.6%). As shown in the heat map and table to the right, the highest proportions of unpaid carers are in Uralla (13.9%), Mid-Coast (13.8%), Lake Macquarie (13.6%) and Dungog (13.5%) LGAs.

A lack of carer recognition, a lack of respite services and a decrease in the number of volunteers, have been identified as challenges in the disability sector in our region.

There are 75,884 people with a profound or severe disability in our region (6.6% of the population)

Disability

The proportion of people with a profound or severe disability across our region (6.6%) is higher than the NSW average of 5.6%. As presented in the heat map and table to the right, 16 of our 23 LGAs have greater proportions of people with a profound or severe disability than the NSW average, with the highest proportions being in Mid-Coast (8.7%), Cessnock (7.6%), Gwydir (7.5%) and Glen Innes Severn (7.3%) LGAs.

Profound or severe disability is more common amongst people aged 65 years and older (NSW, 19.1%). The prevalence of profound or severe disability amongst this cohort in our region (17.2%) ranges from 9.6% in Walcha LGA, to 20.8% in Cessnock LGA.



Demographics

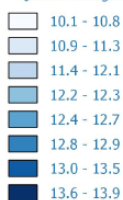


People aged 15 years+ providing unpaid assistance to people with a disability (%), 2016

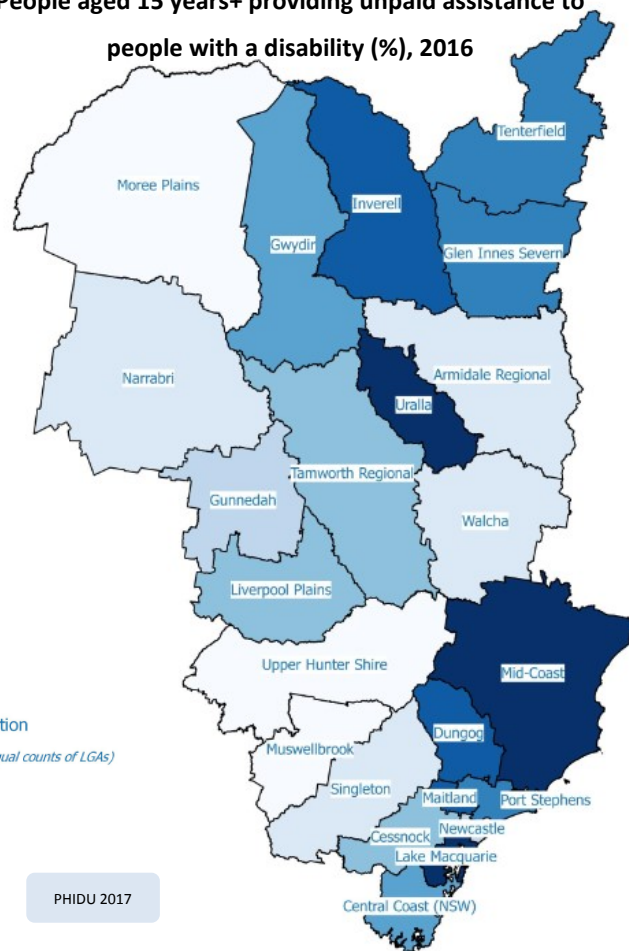
LGA	%
Armidale Regional	11.3
Central Coast (NSW)	12.6
Cessnock	12.3
Dungog	13.5
Glen Innes Severn	12.7
Gunnedah	11.4
Gwydir	12.5
Inverell	13
Lake Macquarie	13.6
Liverpool Plains	12.3
Maitland	12.9
Mid-Coast	13.8
Moree Plains	10.07
Muswellbrook	10.7
Narrabri	10.8
Newcastle	12.1
Port Stephens	12.8
Singleton	11.3
Tamworth Regional	12.2
Tenterfield	12.8
Upper Hunter Shire	10.5
Uralla	13.9
Walcha	10.8

Percent (%) of population

* Quantile data grouping (equal counts of LGAs)



PHIDU 2017

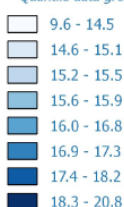


People with profound or severe disability (%), 2016

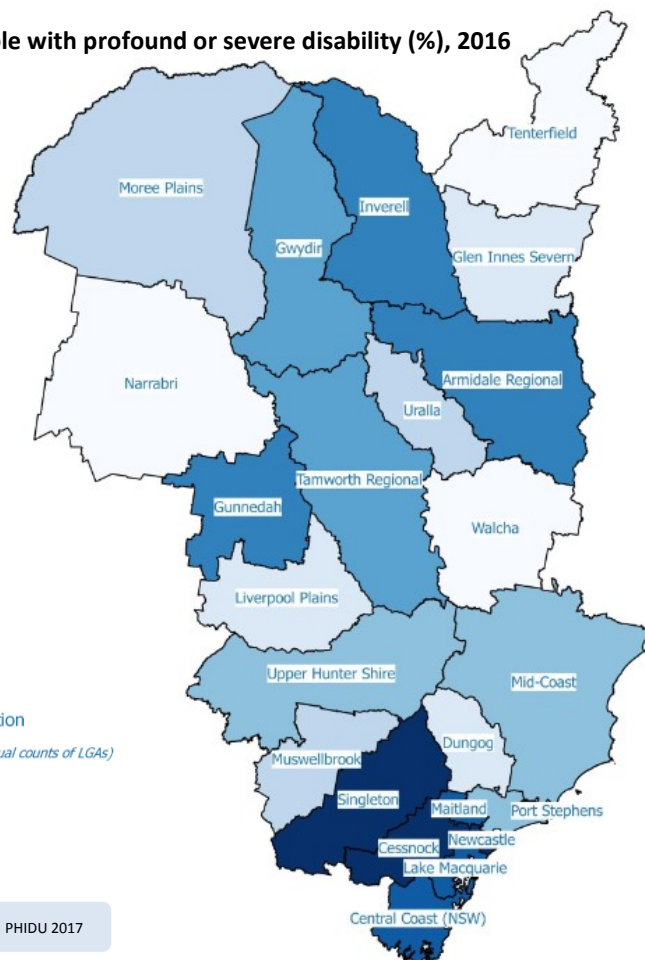
LGA	(%)
Armidale Regional	17.2
Central Coast (NSW)	17.4
Cessnock	20.8
Dungog	14.7
Glen Innes Severn	15.007
Gunnedah	17.2
Gwydir	16.4
Inverell	16.9
Lake Macquarie	18.04
Liverpool Plains	14.6
Maitland	17.6
Mid-Coast	15.9
Moree Plains	15.1
Muswellbrook	15.4
Narrabri	14.03
Newcastle	18.7
Port Stephens	15.6
Singleton	18.6
Tamworth Regional	16.4
Tenterfield	10.4
Upper Hunter Shire	15.8
Uralla	15.3
Walcha	9.6

Percent (%) of population

* Quantile data grouping (equal counts of LGAs)



PHIDU 2017

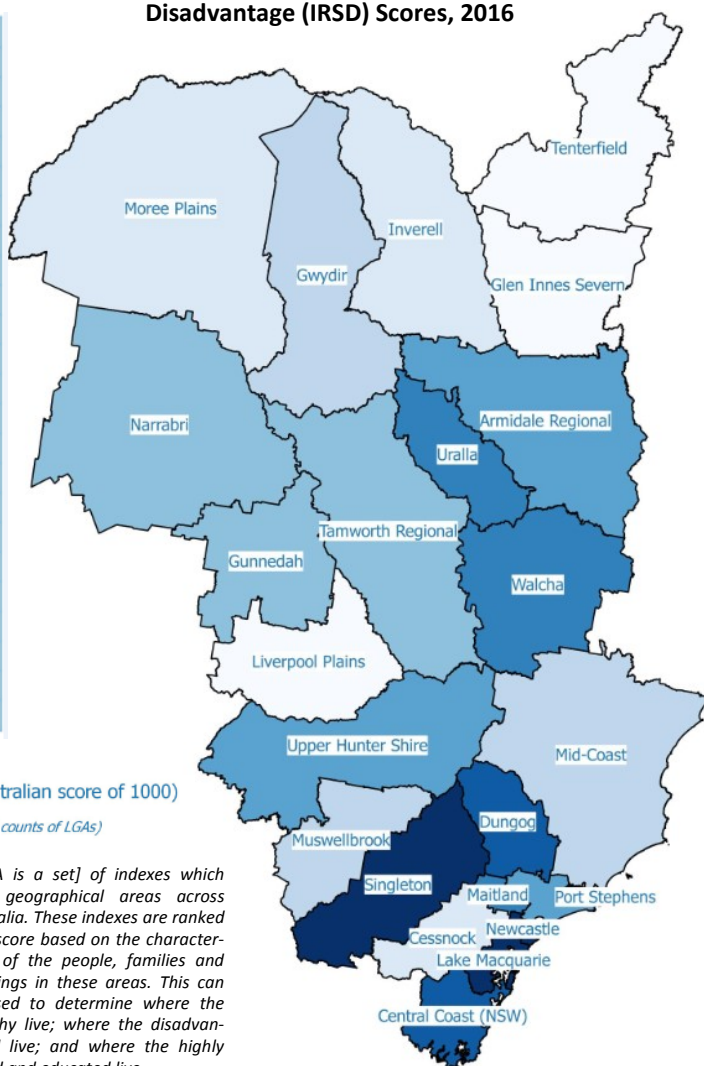




Socio-economic Indicators and Social Determinants of Health

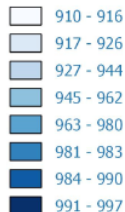
Socio-Economic Indexes for Areas (SEIFA), Index of Relative Socio-Economic Disadvantage (IRSD) Scores, 2016

LGA	SEIFA IRSD
Armidale Regional	980
Central Coast (NSW)	989
Cessnock	925
Dungog	989
Glen Innes Severn	915
Gunnedah	956
Gwydir	941
Inverell	916
Lake Macquarie	996
Liverpool Plains	914
Maitland	983
Mid-Coast	928
Moree Plains	917
Muswellbrook	930
Narrabri	954
Newcastle	997
Port Stephens	980
Singleton	994
Tamworth Regional	962
Tenterfield	910
Upper Hunter Shire	976
Uralla	983
Walcha	981



IRSD rank (based on Australian score of 1000)

* Quantile data grouping (equal counts of LGAs)



[SEIFA is a set] of indexes which rank geographical areas across Australia. These indexes are ranked by a score based on the characteristics of the people, families and dwellings in these areas. This can be used to determine where the wealthy live; where the disadvantaged live; and where the highly skilled and educated live.

(Australian Bureau of Statistics, 2018)

ABS 2017

In general, the higher people's incomes and education, the healthier they are—a phenomenon often called the 'social gradient of health'

Low income households experiencing mortgage stress
HNECC: 8.8%
Australia: 9.3%

Low income households experience rental stress
HNECC: 33.0%
Australia: 27.3%

Dwellings in our region without an internet connection
HNECC: 18.4%
Australia: 14.1%

People receiving an unemployment benefit long-term
HNECC: 6.8%
Australia: 5.4%

Age pensioners (persons 65+ years)
HNECC: 74.4%
Australia: 71.1%

Single parent families with children aged less than 15 years:
HNECC: 25.9%
Australia: 20.4%

PHIDU 2017

Socio-economic Disadvantage

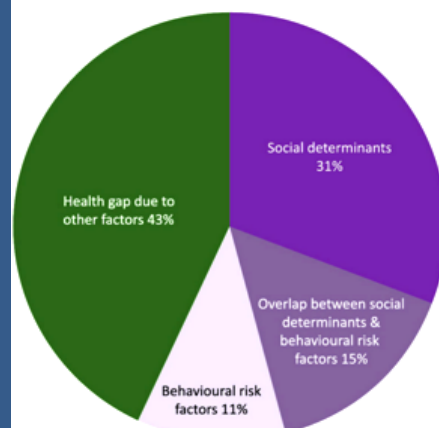
Socio-Economic Indexes for Areas (SEIFA) scores are a measure of advantage and disadvantage compiled by the Australian Bureau of Statistics (ABS). The Census variables used to calculate the SEIFA indexes cover a number of domains such as household income, education, employment, occupation and housing.

The map and table to the left highlights the variation in the SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) scores by LGA across the HNECC region, ranging from the most relatively disadvantaged at 914 (Liverpool Plains) to the least relatively disadvantaged at 997 (Newcastle).

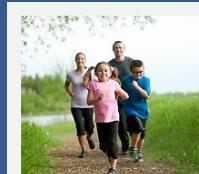
'Inequities in health, avoidable health inequalities, arise because of the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces' (Commission on Social Determinants of Health 2008).

There is a significant gap between the health of Aboriginal and Torres Strait Islander and non-Indigenous populations. The figure below apportions the responsibility for this gap in health between social determinants and behavioural risk factors. The social determinants of health are the conditions where people are born, live, grow, work and age. These account for a large proportion of the health gap between Aboriginal people and non-Indigenous people.

Proportion of the health gap explained by social determinants and behavioural risk factors



Source: Australia's Health 2014 (AIHW 2014d)





Socio-economic Indicators

Further indicators of socio-economic disadvantage or stressors are presented in the table to the right. Across the HNECC region proportions of single parent families are high in all 23 LGAs, compared to the NSW average. Proportions of children in jobless families are also high in Tenterfield, Mid-Coast and Moree Plains LGAs. Similarly, the proportions of welfare dependent, low income families across the region are high, particularly in the LGAs of Moree Plains, Great Lakes and Greater Taree.

The percentage of low income households across the region which experience mortgage or rent stress, is similar to the NSW average, with Muswellbrook and Newcastle LGAs reporting higher proportions.

Unemployment rates in 2016 were highest in the LGAs of Glen Innes Severn, Tenterfield and Inverell. These were all well above the NSW rate of 5.4%.

Socio-economic Indicators and Social Determinants of Health

Factors Which Impact Health	HNECC	Highest Proportions	Lowest Proportions	NSW	Aus.
% Single parent families with children under 15 years, 2016	25.9	Moree Plains 32.7 Mid-Coast 32.6 Tenterfield 32.2	Singleton 20.3 Upper Hunter Shire 20.8 Dungog 21.7	19.9	20.4
% Jobless families with children under 15 years, 2016	14.7	Tenterfield 25.5 Inverell 22.9 Moree Plains 22.6	Singleton 11.1 Walcha 11.5 Upper Hunter Shire 11.6	12.0	11.9
% Low income welfare dependent families, 2016	11.6	Moree Plains 20.1 Muswellbrook 17.3 Inverell 17.0	Upper Hunter Shire 8.7 Newcastle 9.3 Lake Macquarie 9.4	9.9	10.1
% Low income households under financial stress from mortgage or rent, 2016	25.4	Muswellbrook 30.9 Newcastle 30.8 Armidale Regional 29.3	Gwydir 11.1 Walcha 14.5 Tenterfield 16.6	29.3	28.4
% Unemployed, 2016	6.9	Glen Innes Severn 11.6 Tenterfield 10.5 Inverell 10.0	Upper Hunter Shire 4.6 Dungog 4.7 Singleton 4.8	5.4	5.9

PHIDU 2017

Internet Access

In 2016, in the HNECC region 18.4% of dwellings were without an internet connection. This was greater than the NSW proportion (14.7%). Poor internet access was most common in regional areas. The greatest proportion of households without an internet connection was in Gwydir LGA (31.9%) and the lowest was in Maitland LGA (15.4%).

Factors Impacting Health In Rural Areas

People living in rural and remote areas have less access to health services, travel greater distances to seek medical attention, and generally have higher rates of ill health and mortality than people living in cities.

People living in regional and remote areas experience poorer health, which may be due to factors such as educational disadvantage, lower employment and income, and more occupational and physical risks.

People living in rural areas generally have higher levels of social cohesiveness—for example, higher rates of participation in volunteer work and feelings of safety in their community.

People in regional areas are more likely than people in major cities to:

- be a daily smoker (Outer regional and remote 21% and Inner regional 17% compared with 13% in Major cities)
- be overweight or obese (69% and 69% compared with 61%)
- be insufficiently active (72% and 70% compared with 64%)
- drink alcohol at levels that place them at risk of harm over their lifetime (23% and 18% compared with 16%)
- have high blood pressure (24% and 27% compared with 22%).

AIHW 2016





Socio-economic Indicators and Social Determinants of Health

In 2016, 18.9% of the HNECC population participated in voluntary work for an organisation or group compared to 18.1% of the NSW population. Voluntary work was most common in the LGAs of Walcha (32.7%), Gwydir (30.0%) and Uralla (29.6%). Lowest proportions of people volunteering were found in Cessnock (13.8%), Maitland (16.1%) and Central Coast (17.2%) LGAs.

PHIDU 2017

Community Strength

Community strength

Community strength is an important indicator of the level of social cohesiveness within a population. This impacts how the community deals with unforeseen events or crisis and how they support members of their community in times of need. It also impacts how safe people feel in their communities and acceptance of other cultures.

Age dependency ratios

The table to the left presents data on dependency within the HNECC area. This is the age-population ratio of those typically not in the labour force (0-14 years and 65+ years) and those typically in the labour force (15-64 years). This measures the pressure (economical, social and welfare) on the working portion of the population.

The age dependency ratios of the Mid-Coast, Tenterfield and Gwydir LGAs are considerably higher than the NSW ratio indicating that a smaller proportion of the working population is available to support the aged members of these communities. The proportion of aged dependents is likely to increase with our ageing population.

The child dependency ratio is highest in Moree Plains, Gwydir and Narrabri LGAs.

Children in the HNECC Region

The map and table to the left present data on the development of children in their first year of school across domains including:

- Communication
- Language
- Emotional
- Social
- Physical

Across the HNECC region 19.7% of children were considered vulnerable on one or more domains, with the highest proportions found in Moree Plains, Walcha, Inverell and Gwydir LGAs.

Dungog, Uralla, Upper Hunter Shire and Lake Macquarie LGAs report the lowest rates of developmentally vulnerable children for the HNECC region.



Child and Maternal Health

Children developmentally vulnerable on one or more domains (%), 2015

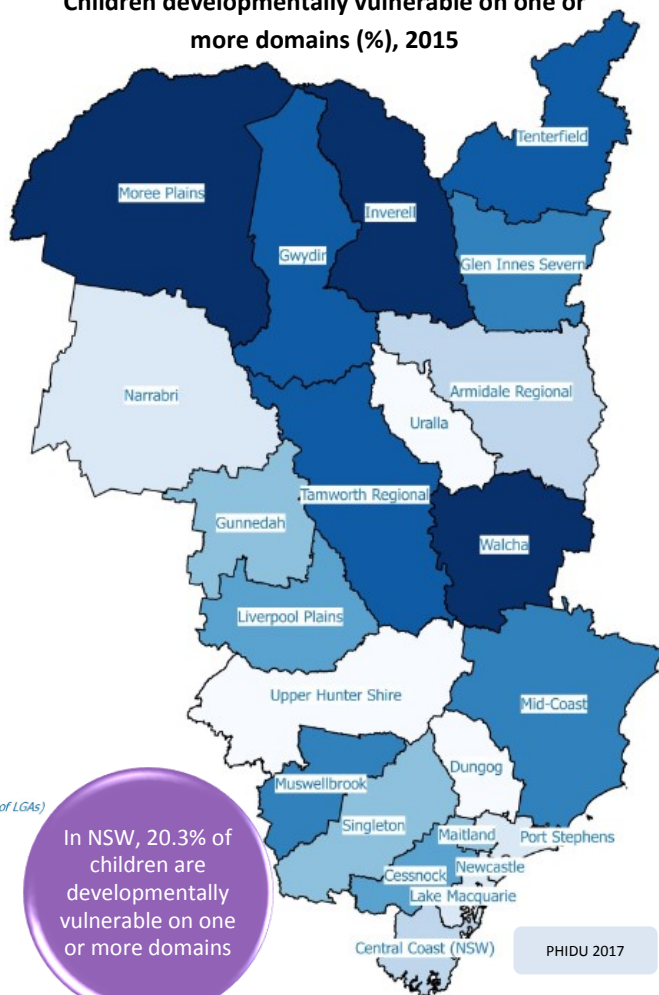
LGA	%
Armidale Regional	17.9
Central Coast (NSW)	19.8
Cessnock	23.1
Dungog	9.7
Glen Innes Severn	24.3
Gunnedah	20.7
Gwydir	27.9
Inverell	28.4
Lake Macquarie	15.4
Liverpool Plains	22.1
Maitland	21.9
Mid-Coast	23.8
Moree Plains	33.9
Muswellbrook	23.8
Narrabri	16.8
Newcastle	16.8
Port Stephens	15.6
Singleton	20.9
Tamworth Regional	25.4
Tenterfield	25.3
Upper Hunter Shire	14.5
Uralla	13.6
Walcha	33.3

Percent (%) of population

* Quantile data grouping (equal counts of LGAs)

- 9.7 - 15.2
- 15.3 - 16.8
- 16.9 - 20.0
- 20.1 - 21.9
- 22.0 - 23.6
- 23.7 - 24.8
- 24.9 - 28.0
- 28.1 - 33.9

In NSW, 20.3% of children are developmentally vulnerable on one or more domains



PHIDU 2017

Immunisation Rates

Data on rates of childhood immunisation across the HNECC region in 2016-17 are presented in the map and table to the right. On the whole, immunisation rates in the HNECC region are above the national rates.

As shown to the right, by Statistical Area Level 3 (SA3) those areas which have lower proportions of 5 year old children who are fully immunised include:

- Armidale
- Gosford
- Lake Macquarie– West

The SA3s with higher participation rates include:

- Port Stephens
- Maitland
- Lake Macquarie– East

Rates of HPV immunisation amongst teenaged boys and girls for the HNECC region as a whole are higher than the Australian averages however there are lower rates in some SA4s.

The National Immunisation Program Schedule is included below.

Child and Maternal Health

Children Fully Immunised at 5 years (%), 2016-17

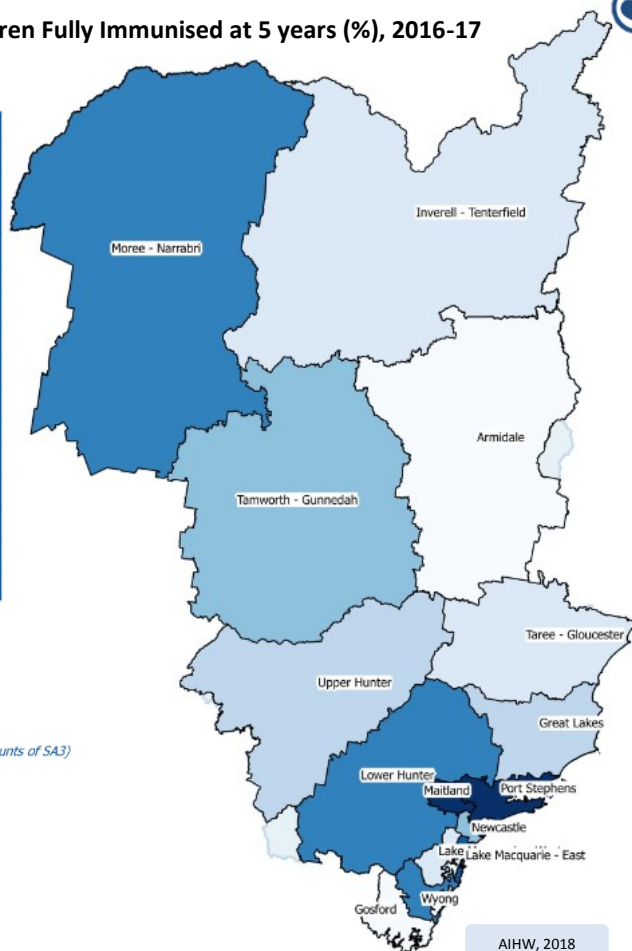


SA3	%
Armidale	94.1
Gosford	94.2
Great Lakes	95.6
Inverell - Tenterfield	94.9
Lake Macquarie - East	96.8
Lake Macquarie - West	94.3
Lower Hunter	96.4
Maitland	96.9
Moree - Narrabri	96.4
Newcastle	95.7
Port Stephens	97.4
Tamworth - Gunnedah	95.7
Taree - Gloucester	94.9
Upper Hunter	95.6
Wyong	96.3

Percentage of children

* Quantile data grouping (equal counts of SA3)

94.10 - 94.27
94.28 - 94.90
94.91 - 95.60
95.61 - 95.70
95.71 - 96.15
96.16 - 96.40
96.41 - 96.82
96.83 - 97.40



AIHW, 2018

Age Due	Vaccinations	Fully Immunised Status
2 mths	Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) Haemophilus influenzae type b (Hib) Polio (IPV) Pneumococcal conjugate	
4 mths	Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) Haemophilus influenzae type b (Hib) Polio (IPV) Pneumococcal conjugate	
6 mths	Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) Haemophilus influenzae type b (Hib) Polio (IPV) Pneumococcal conjugate	1 year
12 mths	Haemophilus influenzae type b (Hib) Meningococcal C Measles, mumps and rubella (MMR)	2 years
18 mths	Measles, mumps, rubella and varicella (chickenpox) (MMRV) Diphtheria, tetanus and whooping cough (DTPa)	
4 yrs	Diphtheria, tetanus and whooping cough (DTPa) Polio (IPV)	5 years



Fully Immunised Status 2016-17	HNECC Region	Highest Rates	Lowest Rates	Aus.
All 1yr Olds Fully Immunised (SA3)	95.5%	Tamworth-Gunnedah 97.3% Lake Macquarie-East 96.9%	Inverell-Tenterfield 93.5% Lake Macquarie-West 93.6%	93.8%
All 2yr Olds Fully Immunised (SA3)	93.2%	Lake Macquarie-East 95.0% Maitland 94.9%	Moree-Narrabri 91.8% Lake Macquarie-West 92.0%	90.9%
All 5yr Olds Fully Immunised (SA3)	95.7%	Port Stephens 97.4% Maitland 96.9%	Armidale 94.1% Gosford 94.2%	93.5%
Aboriginal and Torres Strait Islander 1yr Olds Fully Immunised (SA4)	95.3%	Newcastle & Lake Macquarie 96.8%	Hunter Valley excl. Newcastle 94.4%	92.2%
Aboriginal and Torres Strait Islander 2yr Olds Fully Immunised (SA4)	92.1%	Central Coast 93.8%	New England & North West 89.0%	88.6%
Aboriginal and Torres Strait Islander 5yr Olds Fully Immunised (SA4)	96.7%	Newcastle & Lake Macquarie 98.4%	New England & North West 95.0%	95.7%
Girls Fully Immunised against HPV (SA4)	84.7%	Central Coast 88.2%	Mid North Coast 77.8%	80.1%
Boys Fully Immunised against HPV (SA4)	78.1%	Central Coast 84.3%	New England & North West 73.6%	74.1%

AIHW 2018



Child and Maternal Health

Measure (2013-15)	HNECC Region	Highest Rates	Lowest Rates	Aus.
Infant and young child mortality rate, deaths per 1000 live births (SA3)	5.1	Great Lakes 9.6 Taree-Gloucester 9.1	Gosford 2.9 Lake Macquarie-West 3.4	4.1
% Smoking during pregnancy, all women (SA3)	15.4%	Gosford 10.8% Newcastle 10.8%	Moree-Narrabri 26.3% Taree-Gloucester 24.4%	11.0%
% Low birth weight babies, all women (SA3)	5.1%	Armidale 6.7% Moree-Narrabri 6.3%	Upper Hunter 4.2% Gosford & Wyong 4.6%	4.9%
% at least one antenatal visit in the first trimester, all women (SA3)	64.6%	Inverell-Tenterfield 84.5% Taree-Gloucester	Wyong 38.4% Gosford 50.7%	62.7%
% Smoking during pregnancy, Aboriginal and Torres Strait Islander women (SA4)	44.0%	Mid North Coast 49.2%	Central Coast 37.3%	46.5%
% Low birth weight babies, Aboriginal and Torres Strait Islander women (SA4)	9.0%	Central Coast 9.6%	Newcastle & Lake Macquarie 8.1%	10.6%
% at least one antenatal visit in the first trimester, Aboriginal and Torres Strait Islander women (SA4)	56.7%	Mid North Coast 72.5%	Central Coast 28.5%	54.2%

Aboriginal and Torres Strait Islander Mothers and Babies

In Australia, there has been a notable increase in the proportion of Aboriginal and Torres Strait Islander women attending an antenatal visit in the first trimester of pregnancy. In the HNECC region, the proportion of Aboriginal and Torres Strait Islander women attending their first antenatal visit before 14 weeks gestation was higher than the state average.

The rate of Aboriginal and Torres Strait Islander mothers smoking during pregnancy has also decreased in Australia, as has the proportion of low birthweight babies. In the HNECC region these rates are also lower than the state averages.

However despite these improvements, a gap still remains between these measures for Aboriginal and Torres Strait Islander and non-Indigenous mothers.

AIHW 2018

There is a strong relationship between antenatal care that commences within the first 14 weeks (first trimester) of pregnancy and positive child health outcomes.

AIHW 2018

Healthy Mums and Bubs

The health of mothers and children is extremely significant when assessing the health status of a community. Healthy mothers deliver healthy babies who in turn become healthy children and healthy adults. There are a number of risks or lifestyle factors that may affect the health outcomes for the mother and child. These include risky behaviours during pregnancy such as smoking or delaying health checks. For children, poor nutrition, inadequate shelter or a failure to immunise may increase the chances of a child developing diseases that can result in premature mortality.

Data on these measures is presented in the table to the left and examined in more detail below.

Child and Infant Mortality

The infant and young child mortality rate within the HNECC region (5.1 per 1,000) is higher than the national rate (4.1 per 1,000). SA3s with the highest rates are Great Lakes and Taree-Gloucester, whilst those with the lowest are Gosford and Lake Macquarie-West.

Smoking During Pregnancy

The proportion of all women who smoke while pregnant across the HNECC region (15.4%) is higher than the national average (11.0%). For Aboriginal and Torres Strait Islander women, the proportion who are smoking while pregnant is also alarming at 44% (Australia, 46.5%).

Low Birthweight Babies

Between 2001 to 2015 the HNECC region has maintained consistently higher proportions of low birth weight babies compared to NSW. As shown above left, these proportions are higher among babies born to Aboriginal and Torres Strait Islander women compared to all women in our region.

Antenatal Visits

The percentages of women participating in antenatal visits within the first trimester, for all women, and Aboriginal and Torres Strait Islander women across the entire HNECC area is higher than the national averages. This is a fantastic result with positive outcomes for the health of the mother and child.



Lifestyle Risk Factors

Smoking, high risk alcohol consumption and excess weight are major risk factors for death and disease in Australia.

Smoking is linked to numerous health problems, including: coronary heart disease; stroke; peripheral vascular disease; and cancer.

Smoking rates are high across the HNECC region, with all LGAs above the NSW average, and Moree Plains as much as 1.5 times the NSW rate.

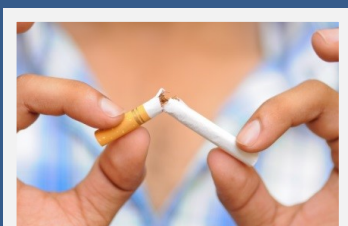
High risk alcohol consumption is considered to be an average daily consumption of seven or more standard drinks for males and five or more standard drinks for females; and more than 43 standard drinks per week for males, and more than 29 standard drinks per week for females. This has been linked to: cirrhosis of the liver; cancer; stroke; inflammatory heart disease; hypertension; road accidents; memory lapse; falls; suicide; and drowning.

All LGAs across our region are above the NSW average for risky alcohol consumption.

A person who is considered to be overweight has a BMI (body mass index) of 25 to less than 30, and a person who is classified as obese has a BMI of 30 or greater. Excess weight increases the risk of developing diseases such as: cardiovascular disease; Type 2 diabetes; musculoskeletal conditions; and cancer; the risk of which increases with weight gain.

The Central Coast and Walcha are the two LGAs in our region that have levels of overweight greater than the NSW average of 35.1%. All LGAs in our region have rates of obesity that are well above that of NSW (28.2%). Liverpool Plains and Narrabri, LGAs have the highest proportions of people with obesity.

AIHW 2007; 2015



Lifestyle Risk Factors

Estimated Population with Lifestyle Risk Factors (ASR/100)

LGA	2014-15					
	Smoking	Overweight (not obese)	Obese	High Risk Alcohol	Physical Inactivity	Adequate Fruit Intake
Armidale Regional	15.7	33.1	33.5	18.3	69.9	49.2
Central Coast	20.1	36.4	31.7	19.5	68.1	48.1
Cessnock	22.2	33.3	40.2	20.4	73.5	45.6
Dungog	19.8	34.1	38.3	23.2	73.7	48.0
Glen Innes Severn	22.9	32.3	40.5	27.2	74.1	47.6
Gunnedah	24.4	32.9	39.4	20.1	74.3	45.4
Gwydir	21.5	34.2	40.4	21.8	79.9	46.1
Inverell	24.6	33.0	38.5	19.5	74.4	46.5
Lake Macquarie	19.8	33.7	30.7	19.5	64.7	48.6
Liverpool Plains	23.8	33.6	41.5	24.2	78.3	44.6
Maitland	17.9	33.4	37.0	19.7	70.7	48.4
Mid-Coast	21.5	32.9	37.1	20.2	71.1	46.5
Moree Plains	27.4	32.2	40.8	22.3	75.0	44.6
Muswellbrook	24.6	33.9	38.8	23.8	73.7	46.3
Narrabri	23.8	34.2	41.1	21.6	78.7	46.1
Newcastle	19.2	33.7	28.8	19.9	61.7	48.8
Port Stephens	20.0	33.3	34.3	19.0	69.3	48.2
Singleton	19.1	32.8	36.6	23.9	71.1	46.6
Tamworth Regional	19.9	32.9	39.3	20.8	71.7	46.7
Tenterfield	22.9	32.3	40.5	27.2	74.1	47.6
Upper Hunter Shire	21.4	33.9	38.6	22.2	76.4	46.7
Uralla	18.3	34.2	37.5	21.5	74.8	48.9
Walcha	18.6	35.8	37.0	23.5	81.7	47.8
HNECC	20.2	34.2	33.7	20.1	68.4	47.8
NSW	16.0	35.1	28.2	16.7	67.1	49.2

PHIDU 2017

Children aged 2-17 yrs who are overweight:

HNECC: 15.7/100

NSW: 16.4/100

There are higher rates of childhood obesity within our region (8.0/100) compared to the state (7.8/100)

Gwydir LGA had the lowest rate of children with adequate fruit intake in our region (61.9/100) (NSW: 67.8/100)

PHIDU 2017

In 2014-15, the majority of Australian adults (95%) and children aged 5-14 (98%) did not eat the recommended daily serve of fruit and vegetables

Physical inactivity, poor nutrition, smoking, risky alcohol consumption and overweight and obesity increase the risk of developing chronic disease

In 2014-15, 64% of people living in major cities, 70% of those in inner regional areas and 72% in outer regional/remote areas had no or low levels of exercise

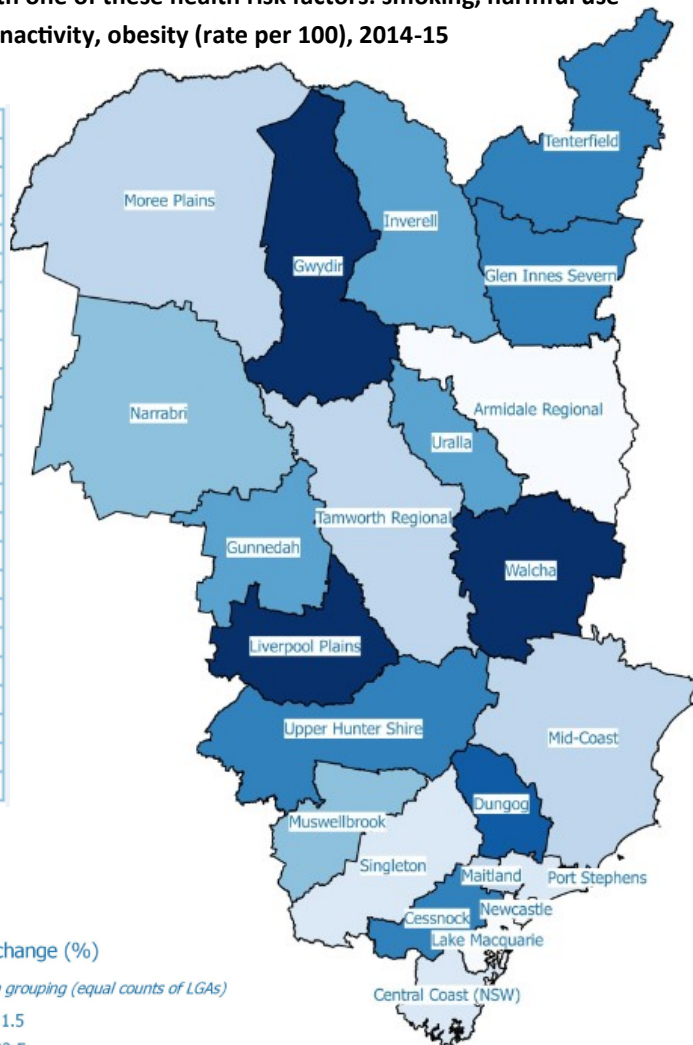
AIHW 2016



Lifestyle Risk Factors

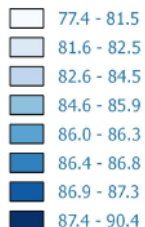
People 18 years+ with one of these health risk factors: smoking, harmful use of alcohol, physical inactivity, obesity (rate per 100), 2014-15

LGA	ASR per 100
Armidale Regional	78.3
Central Coast (NSW)	81.5
Cessnock	86.8
Dungog	87.3
Glen Innes Severn	86.8
Gunnedah	86
Gwydir	87.5
Inverell	86.3
Lake Macquarie	81.4
Liverpool Plains	90.4
Maitland	82.8
Mid-Coast	84.3
Moree Plains	84.5
Muswellbrook	85.9
Narrabri	85.8
Newcastle	77.4
Port Stephens	82.1
Singleton	82.3
Tamworth Regional	84.5
Tenterfield	86.8
Upper Hunter Shire	86.5
Uralla	86.3
Walcha	87.4



Population change (%)

* Quantile data grouping (equal counts of LGAs)



PHIDU 2017

Between 1995 and 2012, the proportion of adults who were overweight or obese rose from 56% to 63%

AIHW 2016

Regular activity and a healthy diet is important for maintaining healthy weight

In 2014-15, 26% of Australian children (5-7 years) and 37% of youth (15-24 years) were overweight or obese

In 2014-15, 63% of Australian adults were overweight or obese and only one-third (35%) were in the normal weight range

In 2016, 59.5% of adults in our region were overweight or obese

In 2014-15, 56% of Australians aged 18-64 years engaged in sufficient physical activity per week

Lifestyle Risk Factors

The map to the left indicates that across the HNECC region there are high proportions of adults participating in unhealthy behaviours. As noted previously these lifestyle risk factors are associated with poorer health outcomes and the development of diseases which can lead to premature death.

Using this measure, the highest rates are noted in the LGAs of:

- Liverpool Plains
- Gwydir
- Walcha
- Dungog

The lowest rates are noted in the LGAs of:

- Newcastle
- Armidale Regional
- Lake Macquarie
- Central Coast

Chronic Disease

Diabetes

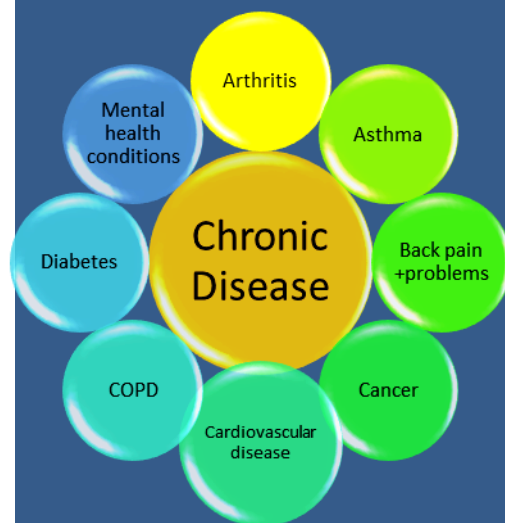
Diabetes is a chronic disease characterised by high levels of blood glucose. This is due to either an inability to produce insulin or to use insulin effectively.

Type 1 Diabetes is a lifelong autoimmune disease affecting approximately 15% of diabetes sufferers.

Type 2 Diabetes accounts for an estimated 85% of diabetes cases and can generally be prevented by maintaining a healthy lifestyle. Risk factors that can lead to type 2 diabetes include high saturated fat intake, obesity, insufficient physical activity and tobacco smoking.

Diabetes can result in health complications such as kidney disease, lower limb amputation, blindness and heart disease.

As shown in the map to the right, in 2016, with the HNECC region, the LGAs with the highest proportions of people with Type 2 diabetes were Gwydir, Liverpool Plains, and Mid-Coast. Those with the lowest proportions were Armidale Regional, Singleton and Newcastle LGAs.



AIHW 2016

PHIDU 2018

Chronic Disease

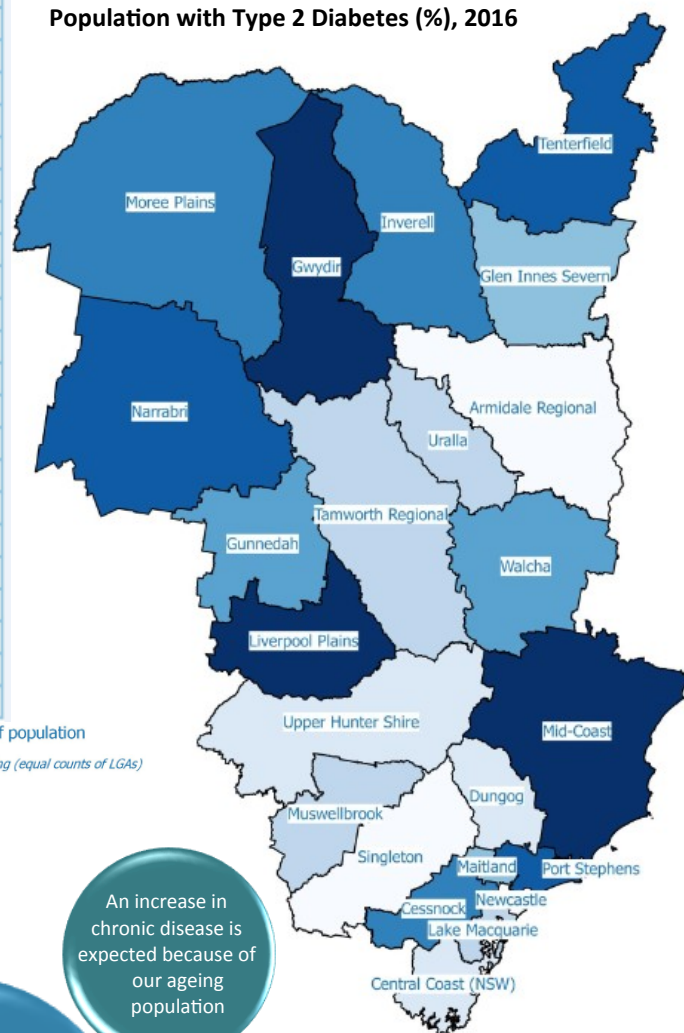
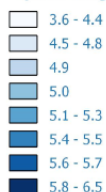


Population with Type 2 Diabetes (%), 2016

LGA	%
Armidale Regional	3.6
Central Coast (NSW)	4.6
Cessnock	5.4
Dungog	4.5
Glen Innes Severn	5
Gunnedah	5.2
Gwydir	6.5
Inverell	5.4
Lake Macquarie	4.9
Liverpool Plains	6
Maitland	5
Mid-Coast	5.9
Moree Plains	5.3
Muswellbrook	4.9
Narrabri	5.5
Newcastle	4.1
Port Stephens	5.6
Singleton	4
Tamworth Regional	4.8
Tenterfield	5.5
Upper Hunter Shire	4.7
Uralla	4.8
Walcha	5.2

Percentage (%) of population

* Quantile data grouping (equal counts of LGAs)



An increase in chronic disease is expected because of our ageing population

Chronic diseases are the leading cause of illness, disability and death in Australia

AIHW 2016

National Diabetes Service Scheme (NDSS) 2017

Chronic Disease Estimates 2011-2012	HNECC	Highest Incidence	Lowest Incidence	NSW
Population, aged 18 years and over, with diabetes mellitus (ASR/100)	4.9	Gwydir 5.5 Inverell 5.4 Maitland 5.4	Walcha 4.1 Dungog 4.3 Uralla 4.3	5.8
Population, aged 18 years and over, with high blood cholesterol (ASR/100)	32.5	Muswellbrook 35.2 Moree Plains 34.6 Uralla 34.6	Gloucester 31.0 Gwydir 31.1 Inverell 31.3	32.4
Population, aged 2 years and over, with circulatory system diseases (ASR/100)	18.5	Moree Plains 20.4 Narrabri 19.9 Armidale Dumaresq 19.3	Muswellbrook 17.8 Upper Hunter Shire 17.9 Dungog 18.0	17.8
Population with hypertensive disease (ASR/100)	10.5	Inverell 11.3 Armidale Dumaresq 11.1 Muswellbrook 11.1	Great Lakes 10.0 Dungog 10.3 Gloucester 10.3	10.5
Population with asthma (ASR/100)	11.5	Maitland 12.7 Great Lakes 12.7 Armidale 12.6	Walcha 10.3 Newcastle 10.5 Gosford 10.6	9.6
Population with chronic obstructive pulmonary disease (COPD) (ASR/100)	3.0	Cessnock 3.2 Greater Taree 3.2 Wyong 3.2	Walcha 2.6 Uralla 2.7 Guyra 2.7	2.6
Population with arthritis (ASR/100)	17.0	Greater Taree 18.9 Cessnock 18.9 Inverell 18.6	Uralla 15.5 Singleton 15.5 Walcha 15.8	15.3



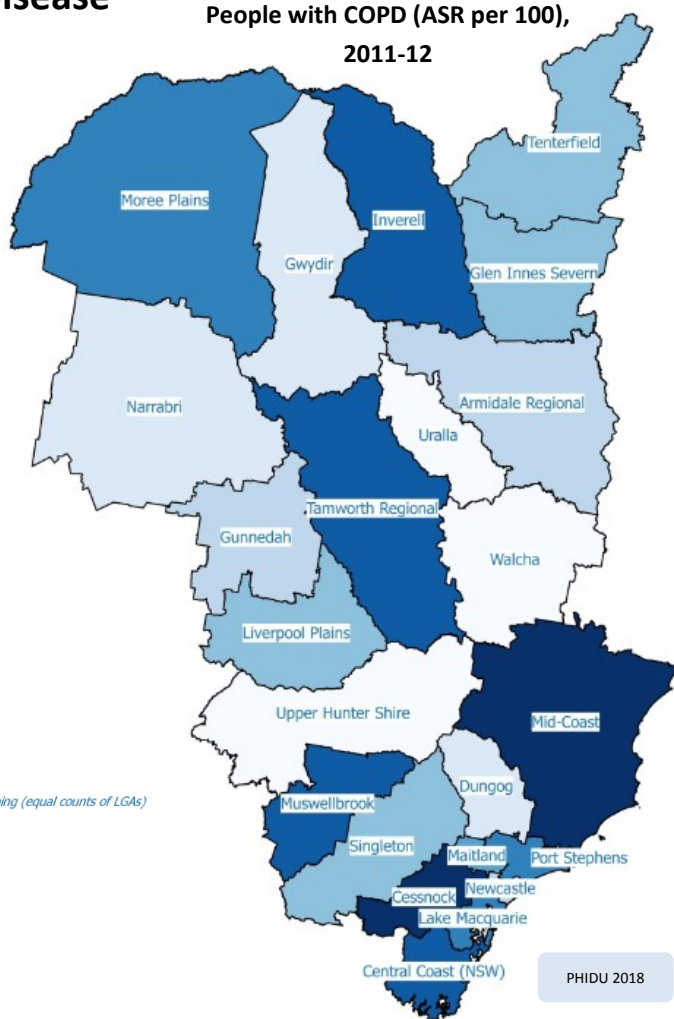
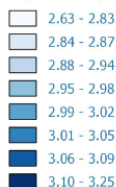
Chronic Disease

People with COPD (ASR per 100),
2011-12

LGA	ASR per 100
Armidale Regional	2.91
Central Coast (NSW)	3.09
Cessnock	3.25
Dungog	2.83
Glen Innes Severn	2.98
Gunnedah	2.93
Gwydir	2.84
Inverell	3.06
Lake Macquarie	3.03
Liverpool Plains	2.95
Maitland	3.01
Mid-Coast	3.14
Moree Plains	3.03
Muswellbrook	3.09
Narrabri	2.84
Newcastle	2.9
Port Stephens	3.04
Singleton	2.97
Tamworth Regional	3.07
Tenterfield	2.98
Upper Hunter Shire	2.81
Uralla	2.73
Walcha	2.63

ASR per 100

* Quantile data grouping (equal counts of LGAs)

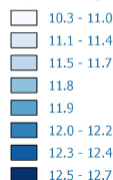


PHIDU 2018

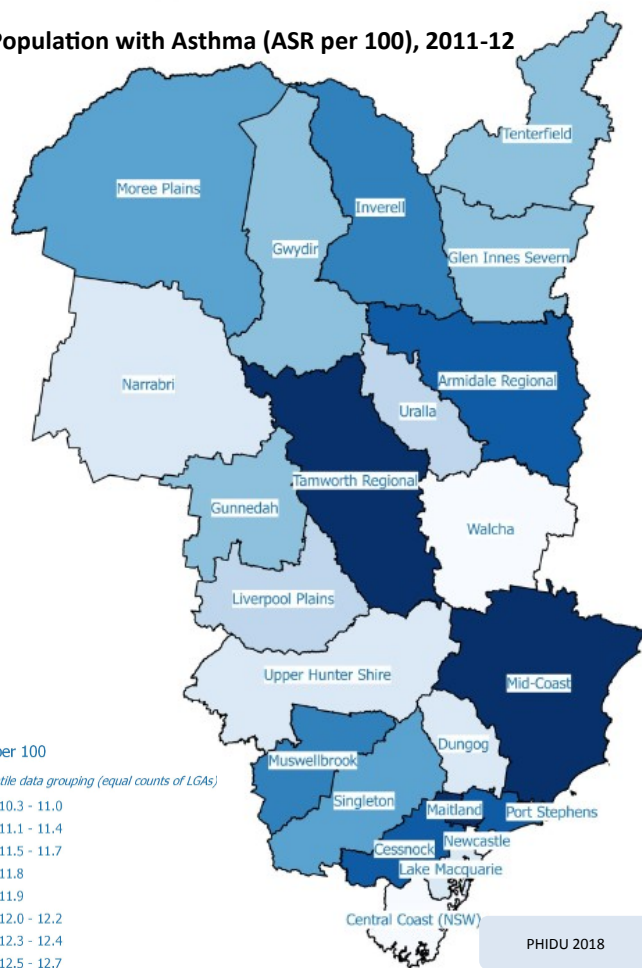
LGA	ASR per 100
Armidale Regional	12.3
Central Coast (NSW)	10.8
Cessnock	12.4
Dungog	11.4
Glen Innes Severn	11.8
Gunnedah	11.8
Gwydir	11.8
Inverell	12.1
Lake Macquarie	11.2
Liverpool Plains	11.7
Maitland	12.7
Mid-Coast	12.5
Moree Plains	11.9
Muswellbrook	12
Narrabri	11.4
Newcastle	10.5
Port Stephens	12.4
Singleton	11.9
Tamworth Regional	12.6
Tenterfield	11.8
Upper Hunter Shire	11.1
Uralla	11.5
Walcha	10.3

ASR per 100

* Quantile data grouping (equal counts of LGAs)



Population with Asthma (ASR per 100), 2011-12



PHIDU 2018

Chronic Disease

COPD

Chronic Obstructive Pulmonary Disease (COPD) is a debilitating condition characterised by severe shortness of breath and coughing due to reduced airflow in the lungs. The primary cause of COPD is smoking. In 2011-13 the prevalence of COPD in NSW 2.6%.

Between 2011-12, within the HNECC region the rate of COPD (3.0 per 100) was higher than the state (2.6 per 100) and national (2.4 per 100) averages. As shown in the map and table to the left, LGAs with the highest rates were Cessnock, Mid-Coast, Central Coast and Muswellbrook and the LGAs with the lowest rates were Walcha, Uralla and Upper Hunter Shire.

Asthma

Asthma is a long-term lung condition affecting the airways causing difficulty to breathe. Asthma affects 479,000 children aged 0-14 years (11%) in Australia. Asthma is the main cause of disease burden for boys aged 5-14 years and was one of the most common chronic diseases for people aged under 45 years (11%). Asthma increases the risk of developing COPD later in life.

Between 2011-12, within the HNECC region, the rate of people with asthma (11.5 per 100) was higher than the state (9.6 per 100) and national (10.2 per 100) averages. As shown in the map and table to the left, LGAs with the highest rates were Maitland, Tamworth Regional and Mid-Coast and those with the lowest were Walcha, Newcastle and Central Coast.



Cancer

Cancer Type	Highest Incidence (ASR / 100,000)	Lowest Incidence (ASR / 100,000)	HNECC Incidence (ASR / 100,000)	NSW Incidence (ASR / 100,000)	Highest Mortality rate (ASR / 100,000)	Lowest Mortality rate (ASR / 100,000)	HNECC Mortality (ASR / 100,000)	NSW Mortality (ASR / 100,000)
Prostate	Walcha (146.9)	Wyong (70.0)	86.2	85.3	Guyra (32.3)	Moree Plains (5.3)	13.9	11.6
Cervical	Uralla (10.6)	Inverell (1.6) Singleton (1.6)	4.2	3.6	Glen Innes Severn (3.5)	Inverell (0.8)	1.2	1.0
Ovarian	Dungog (10.9)	Glen Innes Severn (3.0)	5.8	5.9	Moree Plains (9.5)	Inverell (0.8)	3.7	3.4
Breast	Gosford (70.0)	Gunnedah (49.4) Moree Plains (49.4)	61.4	62.4	Muswellbrook (17.7) Upper Hunter Shire (17.7)	Uralla (4.8)	11.2	11.4
Melanoma	Guyra (86.5)	Liverpool Plains (38.8)	64.7	50.5	Glen Innes Severn (13.8)	Armidale Dumaresq (2.7)	7.2	6.2
Lung	Walcha (78.7)	Gloucester (20.2)	46.7	44.2	Walcha (72.0)	Gloucester (12.6)	36.8	33.2
Colon	Moree Plains (57.2)	Tenterfield (29.8)	43.4	39.6	Walcha (24.1)	Guyra (3.6)	14.9	12.7
Rectal	Walcha (34.9)	Uralla (10.4)	23.5	21.9	Muswellbrook (22.4)	Guyra (3.5)	8.0	7.6
Non-Hodgkins Lymphoma	Armidale Dumaresq (30.9)	Walcha (4.1)	19.1	19.6	Narrabri (9.0)	Gwydir (2.3)	6.1	5.5
Kidney	Muswellbrook (22.5)	Dungog (5.9)	15.0	13.9	Uralla (10.1)	Armidale Dumaresq (2.4)	4.6	3.8

*Old LGAs + not including rates of 0.0

Cancer is a leading cause of mortality in the HNECC region. As shown in the table above, cancer types with the highest mortality rates in our region are Lung and Prostate cancer. The lung cancer mortality rate was highest in Walcha LGA and lowest in Gloucester LGA. The prostate cancer mortality rate was highest in Guyra LGA and lowest in Moree Plains LGA.

Prostate and Melanoma are the leading cancer types in our region. Prostate cancer incidence was highest in Walcha LGA and lowest in Wyong LGA. Melanoma incidence was highest in Guyra LGA and lowest in Liverpool Plains LGA as indicated in the table above.

Cervical Cancer mortality is highest in the Glen Innes Severn LGA at 3.5/100,000 (NSW: 1.0/100,000)

Chance of Surviving 5 years after cancer diagnosis, NSW (2005-2009)	
Prostate	92.9%
Cervical	65.4%
Ovarian	40.4%
Breast	87.6%
Melanoma	91.3%
Lung	16.8%
Colon	67.9%
Rectal	66.2%
Non-Hodgkins Lymphoma	68.7%
Kidney	68.7%

Cancer Institute NSW 2018: 2009-2013 incidence and mortality data

Cervical Cancer incidence is highest in Uralla at 10.6/100,000 and lowest in Inverell and Singleton at 1.6/100,000 (NSW: 3.6/100,000)

Between 2005 and 2009, the chance of surviving 5 years after cancer diagnosis was highest for Prostate Cancer

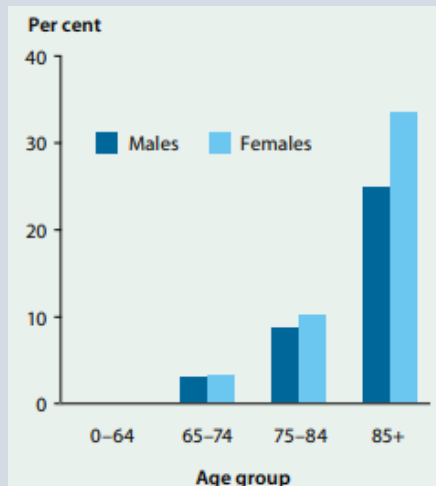


Chronic Disease

Dementia in Australia

In 2016, 354,000 Australians were estimated to have dementia. Based on projections of population ageing and growth, the number of people with dementia will reach almost 400,000 by 2020, and around 900,000 by 2050.

Estimated proportion of people with dementia, by age group and sex, 2016



AIHW 2016

Dementia

Dementia is a syndrome that is characterised by a gradual impairment of brain function. Most commonly dementia impacts on a person's memory, cognition and personality. More than 100 diseases are associated with Dementia, with the most common being Alzheimer's disease (80% of cases).

Dementia is a leading health concern in Australia. Although dementia is not caused by age, it affects a great proportion of older people. In 2015, dementia affected over half of people in permanent residential aged care facilities (52%).

Dementia predictions for our region are available by State Electoral Division. As shown below, in 2016, Gosford, Terrigal and The Entrance had the highest estimated dementia prevalence, whilst Maitland, Cessnock and Upper Hunter had the lowest. These estimates will continue to increase between 2016-2050.

Dementia in our Region

Communities with the **HIGHEST** estimated dementia prevalence and in the NSW Top 10:

	2016 (number)	2050 (number)
Gosford	1,603	3,381
Terrigal	1,582	3,319
The Entrance	1,544	3,555

Communities with the **LOWEST** estimated dementia prevalence:

	2016 (number)	2050 (number)
Maitland	1,026	3,119
Cessnock	1,150	2,785
Upper Hunter	1,151	2,625

Alzheimer's Australia NSW & Deloitte Access Economics 2014

Almost 1 in 10 (8.8%) people aged 65 years and over have dementia

43% of people with dementia are aged 85 years and over

In 2014-15, the rate of dementia hospitalisations in our region was 527.1 per 100,000

There is no known cure for dementia, treatment aims to manage the symptoms rather than address the underlying causes, which are largely unknown



Mental Health and Behavioural Disorders

In 2011-13 it was estimated that 13.6% or 3 million Australians had mental and behavioural problems.

The map to the right presents data related to those experiencing chronic mental and behavioural problems within the HNECC region. HNECC region has a higher rate of people experiencing mental health and behavioural problems (14.4 per 100) than the NSW average (13.1 per 100).

The highest rates are noted for the LGAs of:

- Mid-Coast
- Glen Innes Severn
- Tenterfield

Lower rates of those experiencing chronic mental or behavioural problems are within the LGAs of:

- Walcha
- Singleton
- Upper Hunter Shire

An estimated 20% of Australian adults (3.8 million) experienced a mental health disorder in the previous 12 months.

AIHW 2016

As shown in the graph to the right, in 2015-16, rates of hospitalisation for intentional self-harm for our region were well above that of NSW. Rates for young females aged 15-24 years have remained consistently higher than those for young males and for people of all ages.

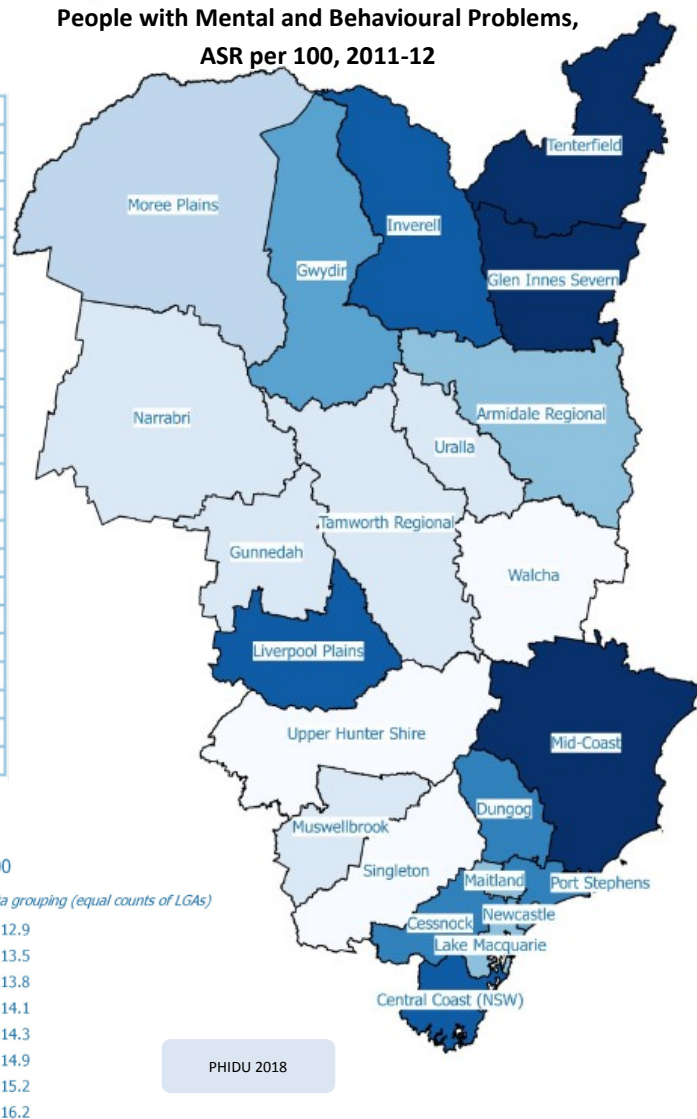
Mental health is a National Health Priority Area for Australian Governments and a Key Performance Indicator for PHNs.

Mental Health

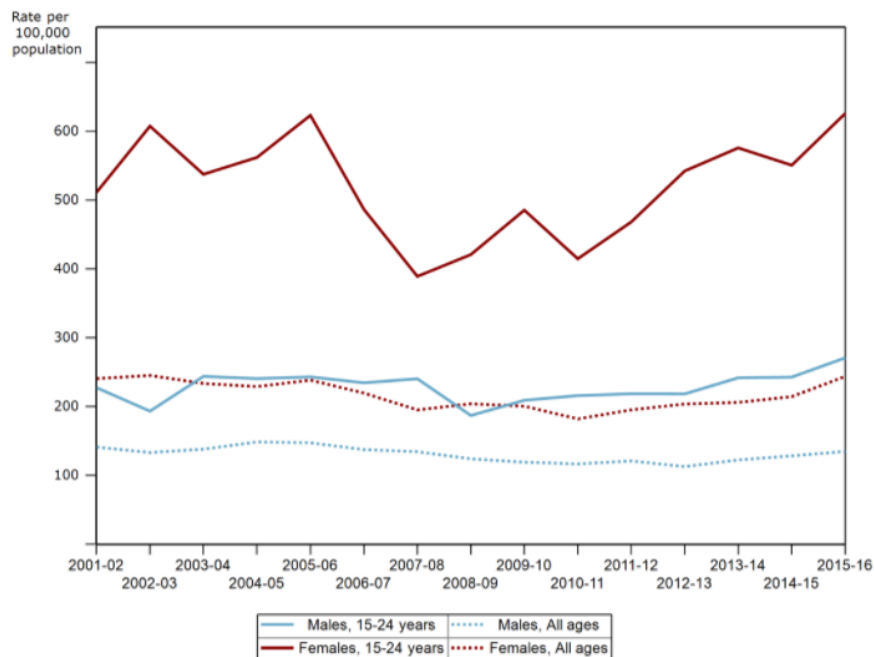


People with Mental and Behavioural Problems, ASR per 100, 2011-12

LGA	ASR per 100
Armidale Regional	14
Central Coast (NSW)	14.9
Cessnock	14.8
Dungog	14.3
Glen Innes Severn	15.4
Gunnedah	13.5
Gwydir	14.2
Inverell	15.2
Lake Macquarie	13.9
Liverpool Plains	15.1
Maitland	14.1
Mid-Coast	16.2
Moree Plains	13.8
Muswellbrook	13.2
Narrabri	12.9
Newcastle	14.2
Port Stephens	14.4
Singleton	12.3
Tamworth Regional	13.5
Tenterfield	15.4
Upper Hunter Shire	12.8
Uralla	13.5
Walcha	12.1



Intentional self-harm hospitalisations, persons of all ages and 15-24 years, Hunter New England and Central Coast PHN, NSW 2001-02 to 2015-16



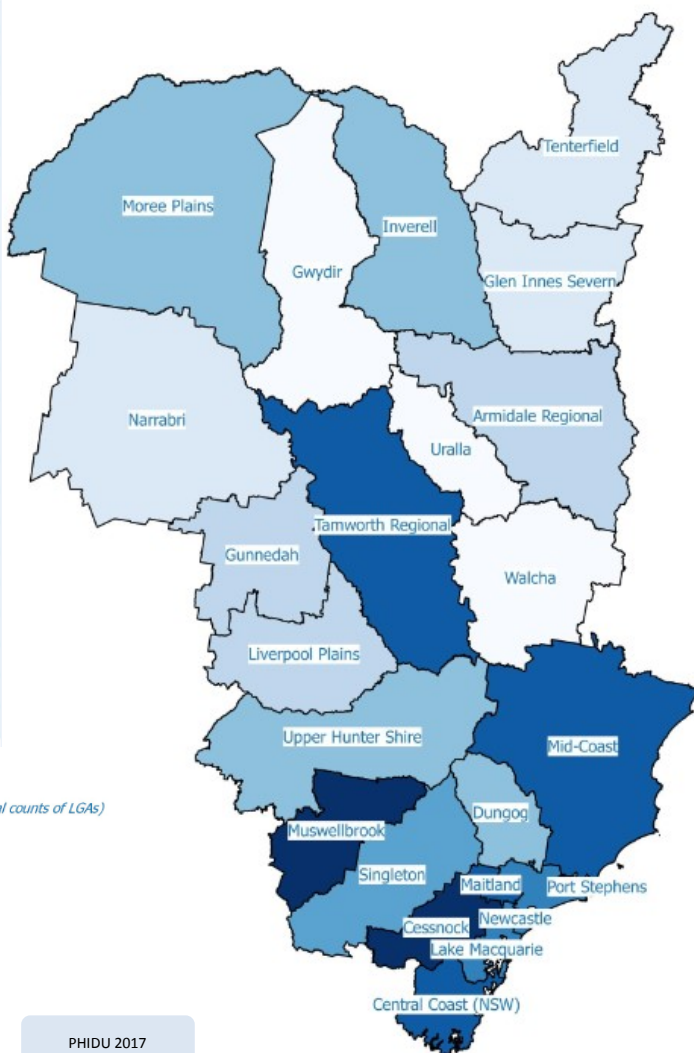
Centre for Epidemiology and Evidence 2017



Mental Health

People aged 18 years and over with high or very high psychological distress, ASR per 100, 2014-15

LGA	ASR/100
Armidale Regional	10.4
Central Coast (NSW)	12.4
Cessnock	15.2
Dungog	10.8
Glen Innes Severn	10
Gunnedah	10.3
Gwydir	9.5
Inverell	10.9
Lake Macquarie	12
Liverpool Plains	10.4
Maitland	12.6
Mid-Coast	12.6
Moree Plains	10.9
Muswellbrook	13.7
Narrabri	9.8
Newcastle	12.2
Port Stephens	12.2
Singleton	11
Tamworth Regional	12.3
Tenterfield	10
Upper Hunter Shire	10.6
Uralla	8.4
Walcha	7.1



Suicide, Hunter New England and Central Coast PHN, NSW 2001 to 2015



Centre for Epidemiology and Evidence 2017

Mental Health and Behavioural Disorders

In 2014-15, in the HNECC region the rate of adults experiencing high or very high psychological distress (12.2/100) was higher than the state average (11.0/100).

As shown in the map and table to the left, rates of high or very high psychological distress varied by LGA across the region, with highest rates reported in Cessnock, Muswellbrook, Maitland and Mid-Coast LGAs, and lowest rates found in Walcha, Uralla and Gwydir LGAs.

In 2015-16,
\$9 billion was spent
on mental health
services in Australia.

AIHW 2016, 2018

Around 45% of
Australians aged 16-85
years will experience a
mental disorder
sometime in their life.

As shown in the graph to the left, between 2001 and 2015, rates of suicide in the HNECC region have generally remained higher than those of the state.

In 2015, the rate of suicide in the HNECC region was 14.2 per 100,000 population, which was significantly higher than that of NSW (9.9 per 100,000).

Health Status

When assessing the health status of an individual or community, factors such as life expectancy and self-reported health are considered. Self-assessed rates of health are linked to actual health status, with people experiencing chronic physical or mental illness reporting 'fair' or 'poor' health at higher rates than the rest of the population.

As shown to the right, in 2015-16, there was a smaller proportion of adults reporting their health as excellent, very good or good in the HNECC region (85.3%) than in Australia (87.0%). There was also a higher proportion of adults reporting having a long-term health condition in the HNECC region (56.0%) compared to Australia (50.2%).

In 2012-13, in our region there was a higher proportion of Aboriginal and Torres Strait Islander people aged 15 years and over that rated their health as excellent/very good (42.3%) and good (36.8%) than the Australian averages (39.3%; 36.5%) and a lower proportion that rated their health as fair/good (21%) than Australia (24.2%).

Life Expectancy

The average life expectancy at birth for NSW region is 82.9 years. This is 85.0 years for women and 80.9 years for men. As described to the right, life expectancy in the HNECC region is lower than that of NSW.

Premature Mortality

Premature mortality refers to deaths that have occurred before their due time, which is currently considered to be before 75 years of age.

As presented in the table to the right, ischaemic heart disease which includes both heart attack (acute myocardial infarction) and angina, accounts for the highest rate of premature mortality across our region, and is well above the national average.

Lung cancer is our next highest cause of premature mortality, with particularly high rates in Walcha and Narrabri LGAs.

Health Status



Region	Adults Reporting Excellent / Very Good / Good Health (2015-16)	Adults Reporting Having a Long-Term Health Condition (2015-16)
HNECC	85.3%	56.0%
Australia	87.0%	50.2%

AIHW 2018

Aboriginal and Torres Strait Islander people (15+ years)	Rated their health as excellent/very good (2012-13)	Rated their health as good (2012-13)	Rated their health as fair/good (2012-13)
HNECC	42.3%	36.8%	21%
Australia	39.3%	36.5%	24.2%

ABS 2015



Life Expectancy

Life expectancy for Aboriginal people is lower than non-Indigenous people, 74.6 years for women and 70.5 years for men.

The average life expectancy for the HNECC region is 81.4 years. For males this is 79.2 years and for females 83.6 years.

Life expectancy in Australia has increased significantly this past century due to decreased mortality from infectious diseases and cardiovascular disease. The average number of years lived in ill-health has increased simultaneously however. In the future, higher life expectancy may be countered by a greater burden of disease and disability.

AIHW 2015; Centre for Epidemiology and Evidence 2017



Premature Mortality

Causes of Premature Mortality 2010-2014	Average Annual ASR / 100,000			
	HNECC	Highest Rates*	Lowest Rates*	Aus.
Ischaemic Heart Disease	27.8	Moree Plains (58.7) Narrabri (47.3)	Muswellbrook (20.9) Upper Hunter Shire (21.6)	24.1
Lung Cancer	24.7	Walcha (52.1) Narrabri (36.2)	Dungog (10.8) Tenterfield (19.3)	21.1
Breast Cancer	17.5	Moree Plains (25.7) Upper Hunter Shire (23.0)	Armidale Regional (8.3) Singleton (13.8)	16.3
Suicide and Self-Inflicted Injuries	11.3	Tenterfield (35.2) Narrabri (15.8)	Armidale Regional (4.0) Inverell (7.8)	11.2
Cerebrovascular Diseases	9.7	Glen Innes Severn (17.1) Tenterfield (15.9)	Muswellbrook (7.5) Armidale Regional (7.7)	8.3
Chronic Obstructive Pulmonary Disease	11.2	Moree Plains (28.7) Upper Hunter Shire (17.0)	Glen Innes Severn (8.0) Lake Macquarie (8.3)	8.5
Colorectal Cancer	9.5	Muswellbrook (14.9) Gunnedah (14.2)	Armidale Regional (5.8) Inverell (6.6)	9.0
Road Traffic Injuries	5.7	Tenterfield (23.2) Dungog (17.8)	Mid-Coast (4.2) Central Coast (4.4)	5.1
Diabetes	5.8	Moree Plains (20.9) Cessnock (10.3)	Dungog (0.0) Port Stephens (4.1)	5.9

*Data not available for all LGA's.

PHIDU 2018



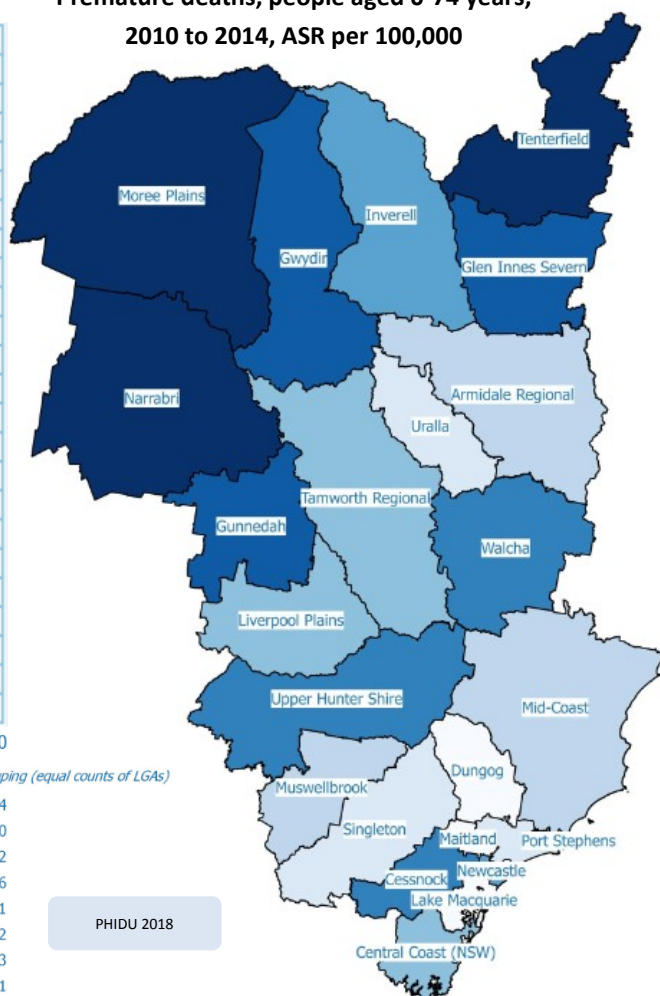
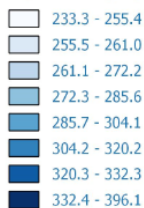
Premature Mortality

Premature deaths, people aged 0-74 years,
2010 to 2014, ASR per 100,000

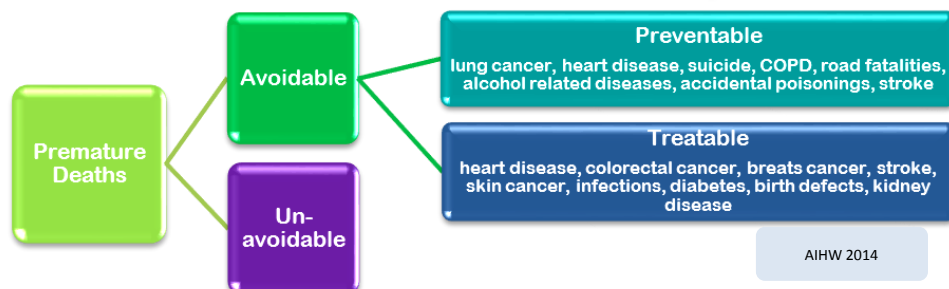
LGA	ASR per 100,000
Armidale Regional	266
Central Coast (NSW)	276.7
Cessnock	319.6
Dungog	233.3
Glen Innes Severn	332.3
Gunnedah	320.9
Gwydir	320.8
Inverell	287.5
Lake Macquarie	252.6
Liverpool Plains	285.6
Maitland	249.1
Mid-Coast	271.7
Moree Plains	396.1
Muswellbrook	262.8
Narrabri	344.4
Newcastle	286.1
Port Stephens	256.3
Singleton	258.7
Tamworth Regional	273.8
Tenterfield	332.4
Upper Hunter Shire	319.6
Uralla	259.1
Walcha	309.6

ASR per 100,000

* Quantile data grouping (equal counts of LGAs)

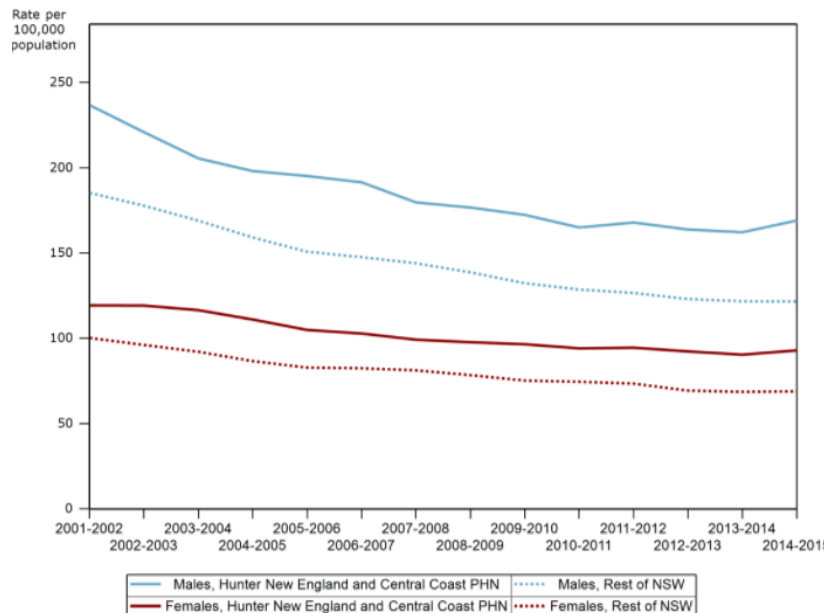


PHIDU 2018



AIHW 2014

Potentially avoidable deaths, persons aged under 75 years: Hunter New England and Central Coast PHN, NSW 2001-2002 to 2014-2015



Premature Mortality

During the 2010-2014 period, as presented in the map to the left, the rate of premature mortality was highest in the LGAs of;

- Moree Plains
- Narrabri
- Tenterfield
- Glen Innes Severn

Lower rates were experienced in the LGAs of;

- Dungog
- Maitland
- Lake Macquarie
- Port Stephens

As shown in the graphic presented below left, premature deaths are categorised as avoidable or unavoidable. Deaths considered avoidable are then classified into two categories depending on whether these deaths were potentially 'preventable' through screening or healthy lifestyle choices for example, or 'treatable' through medical intervention or therapy.

Potentially avoidable deaths are those occurring before the age of 75 years which may have been avoided through more effective prevention or healthcare or both.

AIHW 2014

The graph to the left indicates that between 2001-2002 and 2014-2015, there has been a decrease in the rate of potentially avoidable death from 176.8 per 100,000 to 130.5 per 100,000 for the HNECC region. However, the rate in our region has remained consistently higher than that of the state and is much higher for males than females.

Centre for Epidemiology and Evidence 2017

Cancer Screening

Australia has three national cancer screening programs, all of which aim to reduce illness and mortality from cancer through a systematic approach to screening. In order to achieve the greatest benefit to our population from these programs, high participation rates are needed.

National Cervical Screening Program (NCSP)

With early detection, cervical cancer is highly preventable and curable. Cervical screening participation rates in the HNECC region are shown in the graph to the right. Whilst many LGAs have participation rates equal to or above the state rate (56.3%), some areas including Tenterfield, Narrabri, Liverpool Plains, Muswellbrook, Moree Plains and Cessnock LGAs have much lower rates.

In 2017, a number of changes to the NCSP were introduced. The cervical screening test replaced the Pap test as a method of screening for changes that can lead to cervical cancer. This is an essential test for all women aged between 25 and 74 who have been sexually active including those who have had the HPV vaccination. The first Cervical Screening Test is due two years after a woman's last Pap test. This program aims to reduce the incidence of cervical cancer by 20%.

NSW Cancer Institute 2018

National Bowel Cancer Screening Program

This program aims for early detection of polyps or cancer when treatment is easier and the likelihood of cure is greater.

In 2015-2016, the HNECC region had a similar proportion of people participating in the National Bowel Screening Program (41.4%) as Australia (40.9%). As shown right, our areas with particularly low screening participation included Moree-Narrabri, Upper Hunter, Wyong, Inverell-Tenterfield, Gosford and Lower Hunter.

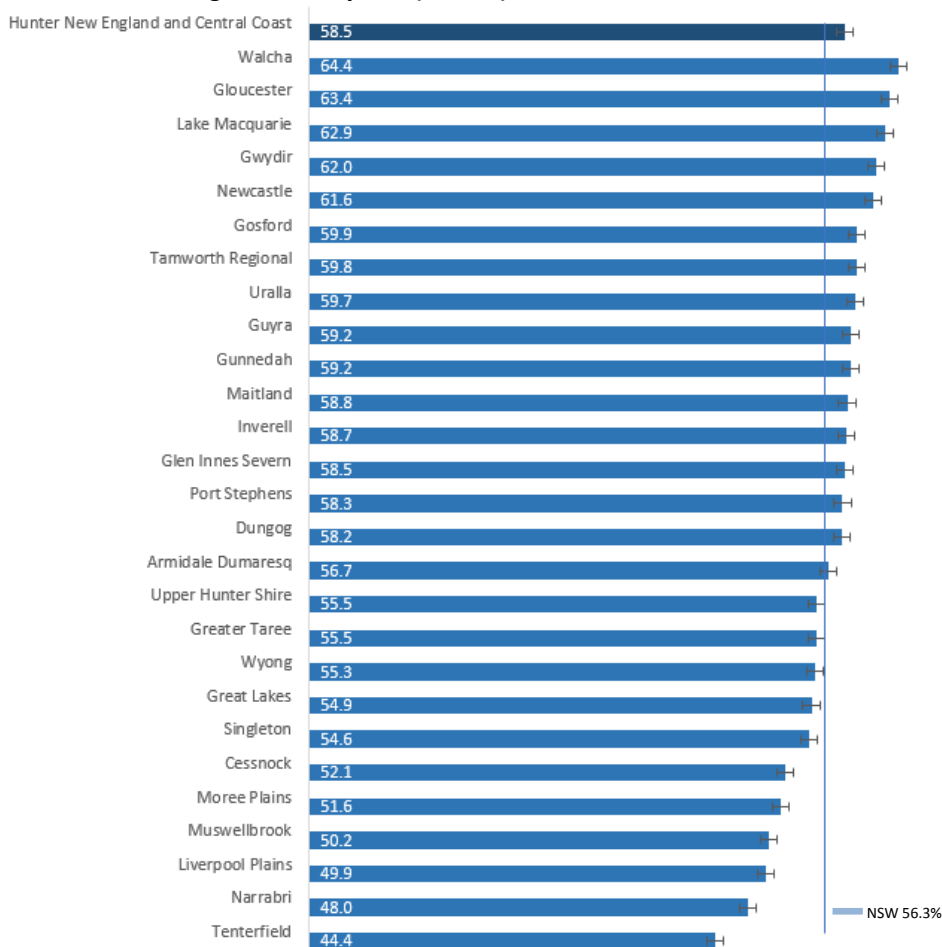
Australia has one of the highest incidences of bowel cancer in the world. If participation in the National Bowel Screening Program increased to 60%, up to 90,000 lives would be saved over the next 40 years.

Cancer Institute 2018

Prevention and Screening



Biennial cervical screening participation rate for NSW women aged 20-69, by LGA (ranked), HNECC PHN 2015-16



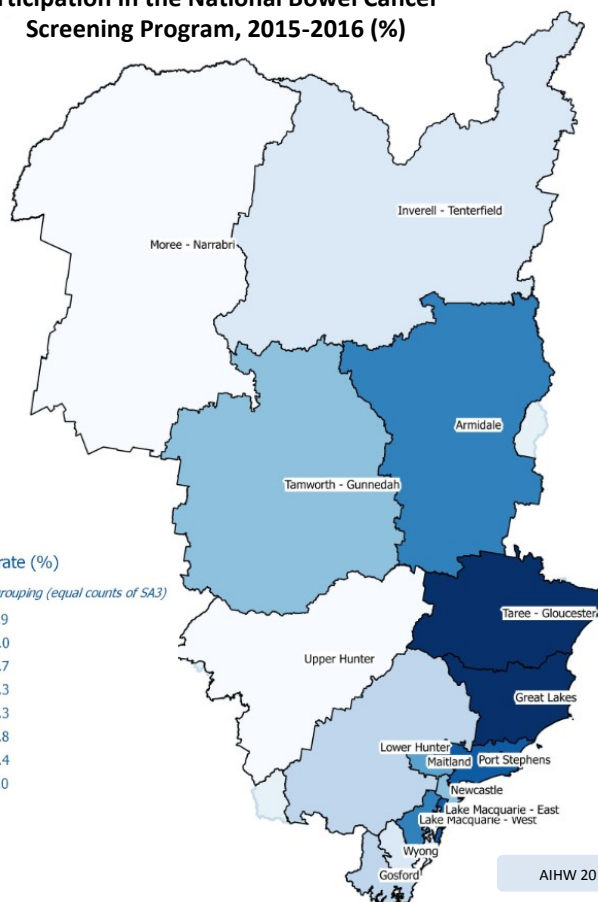
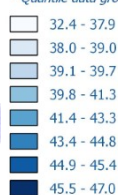
NSW Cancer Institute 2017

Participation in the National Bowel Cancer Screening Program, 2015-2016 (%)

SA3	%
Armidale	44.6
Gosford	39.1
Great Lakes	47
Inverell - Tenterfield	38.8
Lake Macquarie - East	44.9
Lake Macquarie - West	43.9
Lower Hunter	39.3
Maitland	41.4
Moree - Narrabri	32.4
Newcastle	41.3
Port Stephens	45.3
Tamworth - Gunnedah	40.8
Taree - Gloucester	45.9
Upper Hunter	37.5
Wyang	38

Participation rate (%)

* Quantile data grouping (equal counts of SA3)

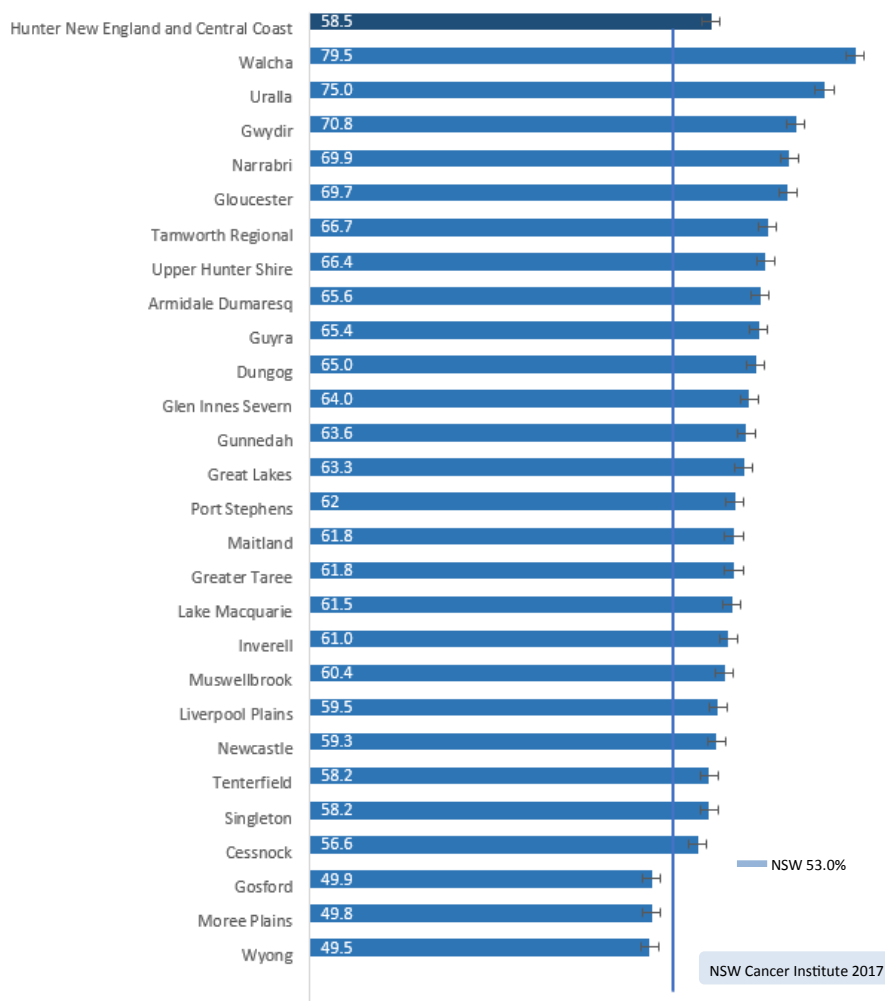


AIHW 2018



Prevention and Screening

Biennial breast screening participation rate for NSW women aged 50-69, by LGA (ranked), HNECC PHN 2015-16



BreastScreen Australia

Breast cancer is a serious health concern for women in Australia. As shown in the graph to the left, HNECC has a higher rate of participation in the BreastScreen program (58.5%) than the NSW average (53%), with particularly high rates in Walcha, Uralla, Gwydir and Narrabri LGAs. Rates are much lower however in Wyong (49.5%), Moree Plains (49.8%) and Gosford (49.9%) LGAs.

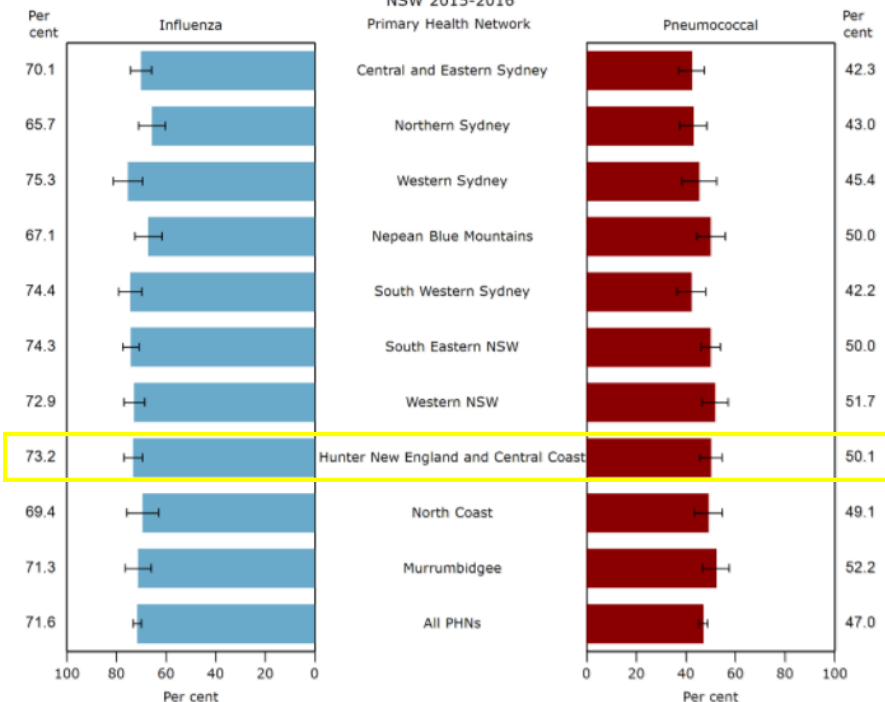
Compared to the average for all women in our region (58.5%), there are much lower breast screening participation rates amongst CALD women (47.3%) and Aboriginal and Torres Strait Islander women (49.3%).
(NSW: CALD 48.3%; Aboriginal and Torres Strait Islander 53.0%)

NSW Cancer Institute 2017

Breast Screening

Mammographic screening is seen as the best population-based method to reduce mortality and morbidity attributable to breast cancer, by detecting early-stage breast cancer. The NSW Cancer Plan includes a target to increase participation amongst women aged 50-69 years so that over 70% have 2 yearly mammograms.

Influenza and pneumococcal disease immunisation by Primary Health Network, persons aged 65 years and over NSW 2015-2016



Influenza and Pneumococcal Disease Immunisations

Influenza and pneumonia are a group of acute respiratory infections that can become very severe and lead to death for persons at high risk, such as the very young, elderly or those with chronic heart or lung conditions.

The graph to the left indicates that in 2015-2016, in the HNECC region, 73.2% of people aged 65 years and over were immunised against influenza and 50.1% were immunised against pneumococcal disease. These proportions are among the highest across NSW PHNs.

Centre for Epidemiology and Evidence 2017

Potentially Preventable Hospitalisations

Potentially preventable hospitalisations (PPHs) are admissions to hospital which could have been prevented through appropriate preventative health care and early disease management delivered through primary care or community-based care.

As presented in the map and table to the right, the highest rates of PPHs in our region are recorded in the LGAs of:

- Muswellbrook
- Narrabri
- Tamworth Regional

Lower rates of PPHs are within the LGAs of:

- Port Stephens
- Lake Macquarie
- Maitland

Rates of PPHs in our region by condition are presented to the bottom right, these are similar to NSW rates. The most common causes of PPH in the HNECC region are provided below.

Most Common Causes of Potentially Preventable Hospitalisation HNECC region (ASR/100,000) (2016-17)

Cellulitis	287.9
Dental conditions	278.8
COPD	263.1
Urinary Tract Infections	208.0
Iron deficiency anaemia	168.9
Convulsions and epilepsy	166.2
Ear, nose and throat infections	161.1
Diabetes complications	155.7

In 2016-17, cellulitis accounted for 18,204 hospital bed days in our region.

In 2016-17, COPD accounted for 23,724 hospital bed days in our region.

In 2016-17, congestive cardiac failure accounted for 18,717 bed days in our region.

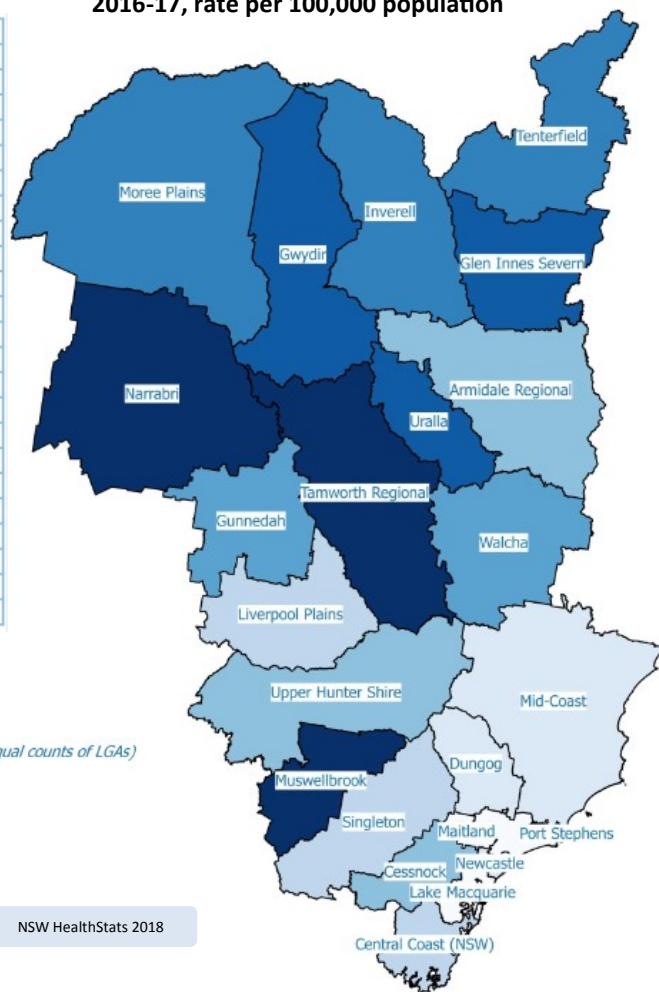
Centre for Epidemiology and Evidence, 2018

Potentially Preventable Hospitalisations

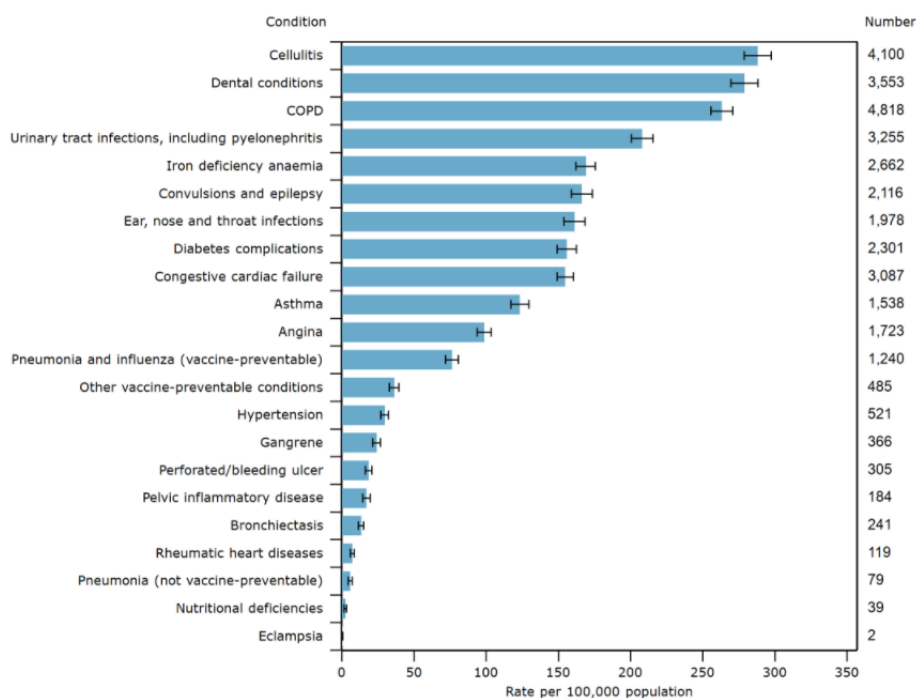


Potentially Preventable Hospitalisations, 2015-16 to 2016-17, rate per 100,000 population

LGA	Rate per 100,000
Armidale Regional	2446.7
Central Coast (NSW)	2286.1
Cessnock	2303.1
Dungog	2176.6
Glen Innes Severn	2992.4
Gunnedah	2502.2
Gwydir	3054.7
Inverell	2617
Lake Macquarie	1990.3
Liverpool Plains	2290.6
Maitland	2077.8
Mid-Coast	2103.2
Moree Plains	2686.4
Muswellbrook	3159.1
Narrabri	3088.4
Newcastle	2151.3
Port Stephens	1878.9
Singleton	2247.3
Tamworth Regional	3068.4
Tenterfield	2555
Upper Hunter Shire	2412
Uralla	2729.6
Walcha	2484.1



Potentially preventable hospitalisations by condition, Hunter New England and Central Coast PHN NSW 2016-17



Centre for Epidemiology and Evidence, 2018



Service Utilisation and Access

GP Services	HNECC	Australia
Adults Who Saw a GP in the Past 12 Months (2015-16)	82.4%	81.9%
Average Number of GP Attendances per Person (age-standardised) (2015-16)	5.7	5.9
GP Attendances Bulk-Billed (2015-16)	83.9%	85.1%
People who Waited Longer than they felt Acceptable for a GP Appointment (2013-14)	24.6%	22.6%

AIHW 2018

Access to Primary Care Services

Access to health services is a key factor impacting population health outcomes. There are a number of factors to consider when gauging access, including the timeliness and affordability of health services, workforce availability, access to services in the after-hours period, the geographic location of services, and the cultural safety of services.

Whilst information presented in the table to the left indicates that factors influencing GP usage and rates of GP usage in general in our region are similar to that of Australia, as explored below there is considerable variability across the HNECC region.

In 2015-16, the average number of GP attendances per person in our region (by SA3) ranged from 4.4 in Tamworth-Gunnedah to 6.7 in Wyong as can be seen in the figure on the left. More than half of the LGAs within our region had rates that were lower than those of Australia (5.9).

Number of GP attendances per person, age-standardised							
Local area (SA3)	2013-14	2014-15	2015-16	0.0	2.0	4.0	6.0
National	5.6	5.7	5.9				
Wyong (NSW)	6.1	6.4	6.7				
Lower Hunter (NSW)	5.7	5.8	6.2				
Great Lakes (NSW)	5.9	6.0	6.1				
Lake Macquarie-West (NSW)	5.7	5.9	6.1				
Port Stephens (NSW)	5.6	5.8	6.0				
Gosford (NSW)	5.6	5.7	5.9				
Upper Hunter (NSW)	5.4	5.8	5.8				
Maitland (NSW)	5.2	5.4	5.8				
Lake Macquarie-East (NSW)	5.3	5.4	5.7				
Taree-Gloucester (NSW)	5.6	5.7	5.6				
Newcastle (NSW)	5.0	5.2	5.4				
Inverell-Tenterfield (NSW)	4.8	4.9	5.1				
Moree-Narrabri (NSW)	4.7	4.9	4.8				
Armidale (NSW)	4.1	4.3	4.5				
Tamworth-Gunnedah (NSW)	4.0	4.2	4.4				

AIHW 2018

In 2015-16, 10.7% of adults saw a GP for urgent care in the preceding 12 months in our region (Australia: 10.4%).

In 2013-14, 30.1% of adults in our region could not access their preferred GP in the preceding 12 months (Australia: 28.5%).

In 2015-16, the percentage of GP attendances bulk-billed in our region (by SA3) ranged from 76.2% in Maitland to 90.2% in Great Lakes as can be seen in the figure on the left. More than half of the LGAs within our region had proportions that were lower than those of Australia (85.1%).

Percentage of GP attendances bulk billed							
Local area (SA3)	2013-14	2014-15	2015-16	20%	40%	60%	80%
National	83.4%	84.3%	85.1%				
Wyong (NSW)	86.9%	88.9%	90.2%				
Port Stephens (NSW)	85.0%	87.2%	88.5%				
Great Lakes (NSW)	90.1%	89.4%	88.2%				
Upper Hunter (NSW)	84.9%	86.9%	87.6%				
Lake Macquarie-West (NSW)	84.9%	86.5%	87.2%				
Gosford (NSW)	84.9%	85.4%	85.9%				
Taree-Gloucester (NSW)	83.4%	84.2%	84.5%				
Lower Hunter (NSW)	79.8%	82.0%	84.2%				
Lake Macquarie-East (NSW)	80.0%	81.6%	82.3%				
Inverell-Tenterfield (NSW)	77.0%	77.9%	79.3%				
Newcastle (NSW)	75.4%	76.9%	78.0%				
Armidale (NSW)	76.0%	76.1%	77.3%				
Tamworth-Gunnedah (NSW)	72.7%	74.5%	77.2%				
Moree-Narrabri (NSW)	73.7%	74.7%	77.2%				
Maitland (NSW)	70.2%	72.9%	76.2%				

AIHW 2018

In 2015-16, 5.4% of adults in our region did not see or delayed seeing their GP due to cost in the preceding 12 months (Australia: 4.1%).



Barriers to Health Service Access

In 2014, the rate of people who found the cost of a service to be a barrier to accessing healthcare when needed within our region (2.5 per 100) was higher than the rate for Australia (2.0 per 100).

In NSW in 2010, it was estimated that 11.1% of people delayed medical consultation due to cost. Substantially greater numbers of people across our region are predicted to experience financial barriers to health services.

Limited access to a GP outside normal operating hours has been reported as a barrier, particularly in our rural areas. Lack of transport is another substantial barrier to service access in our region.

PHIDU 2018

In 2012-13, 2.9 million (12.5%) Australians were very high and frequent GP attenders (12+ GP visits). People in this group were more likely to be older and live in disadvantaged areas, and had the lowest rates of private health insurance coverage.

NHPA 2015

Emergency Department Presentations

Semi-Urgent and Non-Urgent ED attendances are often considered best managed in general practice. Emergency Departments can be a preferred option for care for some people if a timely appointment is not available, and for those community members who are financially disadvantaged, with medications and diagnostic services provided at no cost in a single visit. A heavy reliance on emergency departments leads to higher health care costs.

Semi-urgent and non-urgent attendances comprise the majority of presentations at EDs within our region, as shown by hospital in the table to the right.



Service Utilisation and Access



Emergency Department Presentations, HNECC, 2016-17

Hospital	Triage 1 Resus.	Triage 2 Emergency	Triage 3 Urgent	Triage 4 Semi-Urgent	Triage 5 Non-Urgent	Total
Armidale Hospital	42	954	4,461	9,151	1,612	16,220
Barraba Multi Purpose Service	0	69	360	1,042	1,392	2,863
Belmont Hospital	47	2,002	5,153	12,675	4,503	24,380
Bingara Multi Purpose Service	<5	156	228	301	406	1,095
Boggabri Multi Purpose Service	<5	23	81	210	335	650
Bulahdelah Hospital	0	47	81	280	4,795	5,203
Calvary Mater Newcastle Hospital	204	5,209	9,411	17,612	4,525	36,961
Cessnock Hospital	22	1,081	4,287	8,729	3,232	17,389
Denman Multi Purpose Service	<5	27	73	110	352	563
Dungog Hospital	<5	34	246	1,048	912	2,241
Glen Innes Hospital	13	204	979	2,306	1,558	5,060
Gloucester Hospital	6	190	586	1,139	861	2,782
Gosford Hospital	846	8,435	26,563	28,082	2,076	66,010
Gunnedah Hospital	14	414	1,798	4,476	1,352	8,054
Guyra Multi Purpose Service	<5	90	583	987	419	2,081
Inverell Hospital	14	985	2,741	3,906	1,221	8,867
John Hunter Hospital	451	7,109	19,984	39,223	11,317	78,084
Kurri Kurri Hospital	6	325	1,026	1,844	638	3,840
Maitland Hospital	81	8,102	12,858	21,996	5,494	48,532
Manilla Hospital	<5	177	656	1,860	695	3,391
Manning Hospital	154	5,182	8,270	9,942	6,650	30,198
Merriwa Multi Purpose Service	<5	39	187	314	261	804
Moree Hospital	11	663	2,491	4,008	1,172	8,345
Muswellbrook Hospital	9	551	2,336	4,880	2,185	9,961
Narrabri Hospital	19	401	1,562	2,504	1,190	5,676
Quirindi Hospital	5	294	1,010	1,487	779	3,575
Scone Hospital	5	259	1,108	1,645	1,812	4,829
Singleton Hospital	17	689	2,899	6,779	1,091	11,475
Tamworth Hospital	188	3,865	11,678	21,825	8,247	45,803
Tenterfield	14	189	700	797	517	2,217
Tingha Multi Purpose Service	0	<5	7	20	439	469
Tomaree Hospital	19	733	2,386	6,099	1,210	10,490
Vegetable Creek Multi Purpose Service Emmaville	0	16	38	98	310	462
Walcha Multi Purpose Service	<5	59	177	798	384	1,419
Warialda Multi Purpose Service	<5	55	192	445	715	1,409
Wee Waa Hospital	<5	151	618	787	477	2,036
Werris Creek Hospital	0	0	<5	20	111	132
Wilson Memorial Community Hospital, Murrurundi	<5	41	210	568	2,018	2,838
Wyong Hospital	401	6,341	19,173	34,248	4,823	64,988

AIHW, 2017



Service Utilisation and Access

After-Hours Services

After-Hours Services	2015-16	
	HNECC	Australia
Average number of after-hours GP attendances per person, age-standardised	0.29	0.48
Expenditure on after-hours GP attendances per person, age standardised	\$19.98	\$31.87
Adults who saw a GP after-hours in the preceding 12 months	5.5%	8.0%
Average number of after-hours ED attendances per 1,000 people	140	-

AIHW 2018

After-Hours Services

There is a lack of, and limited access to, GPs outside normal operating hours, particularly in rural areas where there are no assigned after-hours services.

Lack of awareness of local after-hours services, limited information about the availability of after-hours GP services, and a lack of workforce coordination and collaboration to share after-hours availability is a barrier to accessing after hours care in rural and regional locations.

After-hours service information for our region between 2015-16 is presented in the table to the left, where the average number of after-hours GP attendances are lower than the Australian average.

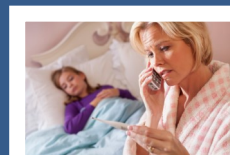
In 2016-17, the number of urgent after-hours services delivered by GPs and medical practitioners was significantly higher within the Hunter region compared to the Central Coast and New England, as can be seen in the table below.

Urgent After-Hours Services Delivered by GPs & Medical Practitioners July'16– Jun'17	
Central Coast	2,297
Hunter	37,279
New England	1,648

HNECC PHN 2018

The average number of after-hours GP attendances in 2015-16 was lower in our region (0.29) than the Australian average (0.48). As presented in the graph to the left, this ranged from 0.08 in Tamworth-Gunnedah SA3 to 0.48 in Gosford SA3.

PHNs work to ensure that after-hours primary care is coordinated and appropriate to the needs identified in the local community.



Number of after-hours GP attendances per person, age-standardised

Local area (SA3)	2013-14	2014-15	2015-16	0.00	0.25	0.50
National	0.39	0.43	0.48			
Gosford (NSW)	0.33	0.39	0.48			
Lake Macquarie-East (NSW)	0.33	0.38	0.42			
Lake Macquarie-West (NSW)	0.29	0.33	0.37			
Newcastle (NSW)	0.26	0.32	0.35			
Maitland (NSW)	0.17	0.25	0.33			
Wyong (NSW)	0.19	0.21	0.27			
Port Stephens (NSW)	0.15	0.21	0.23			
Lower Hunter (NSW)	0.11	0.15	0.20			
Inverell-Tenterfield (NSW)	0.12	0.13	0.18			
Taree-Gloucester (NSW)	0.15	0.17	0.18			
Great Lakes (NSW)	0.14	0.14	0.16			
Upper Hunter (NSW)	0.11	0.12	0.15			
Armidale (NSW)	0.06	0.08	0.12			
Moree-Narrabri (NSW)	0.08	0.08	0.10			
Tamworth-Gunnedah (NSW)	0.06	0.06	0.08			

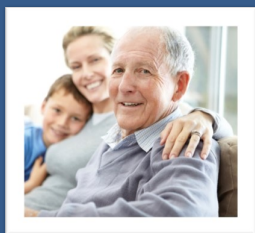
AIHW 2018

The after-hours period is defined as:

- ◇ Before 8:00am and after 6:00pm week days
- ◇ Before 8:00am and after 12:00pm Saturdays
- ◇ All day Sundays and public holidays

Aged Care Services

The availability of residential aged care places within the HNECC region varies considerably. The map presented right indicates that the areas with the lowest number of residential aged care places per 1,000 people aged 70 years and over are the LGAs of Muswellbrook, Dungog, Maitland and Port Stephens. The LGAs with the highest rates were Cessnock, Newcastle, Glen Innes Severn and Gwydir.



Home and Community Care Services (HACC)

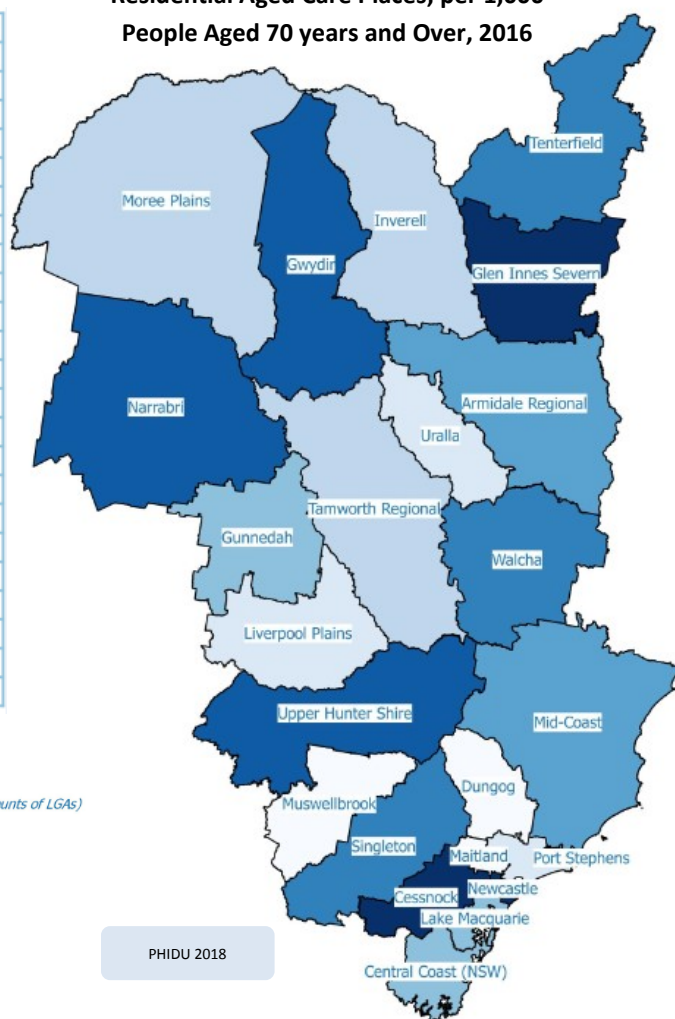
Data on total instances of assistance under the HACC program indicates that in NSW, 61.2 services were delivered per 1,000 residents during 2014-2015. Across our region, rates of HACC service delivery are above the state average, with only two LGAs with lower rates, Newcastle (55.0) and Lake Macquarie (56.1). Highest rates were in Gwydir (174.9) and Dungog (133.1) LGAs, which can be seen in the table to the right.

Service Utilisation and Access



Residential Aged Care Places, per 1,000 People Aged 70 years and Over, 2016

LGA	Places per 1,000
Armidale Regional	83.4
Central Coast (NSW)	78.9
Cessnock	108.4
Dungog	50.6
Glen Innes Severn	104.3
Gunnedah	75.8
Gwydir	101
Inverell	73.9
Lake Macquarie	75
Liverpool Plains	67.1
Maitland	51.9
Mid-Coast	80.1
Moree Plains	71.6
Muswellbrook	50
Narrabri	98.7
Newcastle	107.6
Port Stephens	52.5
Singleton	92.5
Tamworth Regional	72.5
Tenterfield	83.5
Upper Hunter Shire	92.6
Uralla	66
Walcha	86.1



Places per 1,000 people

* Quantile data grouping (equal counts of LGAs)

50.0 - 52.4
52.5 - 69.3
69.4 - 74.2
74.3 - 78.9
79.0 - 83.5
83.6 - 92.5
92.6 - 101.8
101.9 - 108.4

PHIDU 2018

Home and Community Care Program 2014-15	LGAs with Highest Proportions	LGAs with Lowest Proportions	HNECC	NSW
Total Clients (ASR/1,000)	Gwydir (83.0) Inverell (69.9)	Lake Macquarie (32.2) Newcastle (32.9)	39.5	36.7
Clients Living Alone (%)	Newcastle (47.2) Armidale Regional (46.8)	Liverpool Plains (37.8) Maitland (37.9)	40.9	38.6
Clients with a Carer (%)	Muswellbrook (27.3) Port Stephens (26.1)	Gunnedah (8.4) Walcha (9.4)	18.7	17.1
Indigenous Clients (%)	Moree Plains (24.7) Narrabri (18.5)	Upper Hunter Shire (1.3) Port Stephens (2.0)	4.9	4.3
Total Instances of Assistance (ASR/1,000)	Gwydir (174.9) Dungog (133.1)	Newcastle (55.0) Lake Macquarie (56.1)	68.5	61.2

PHIDU 2018



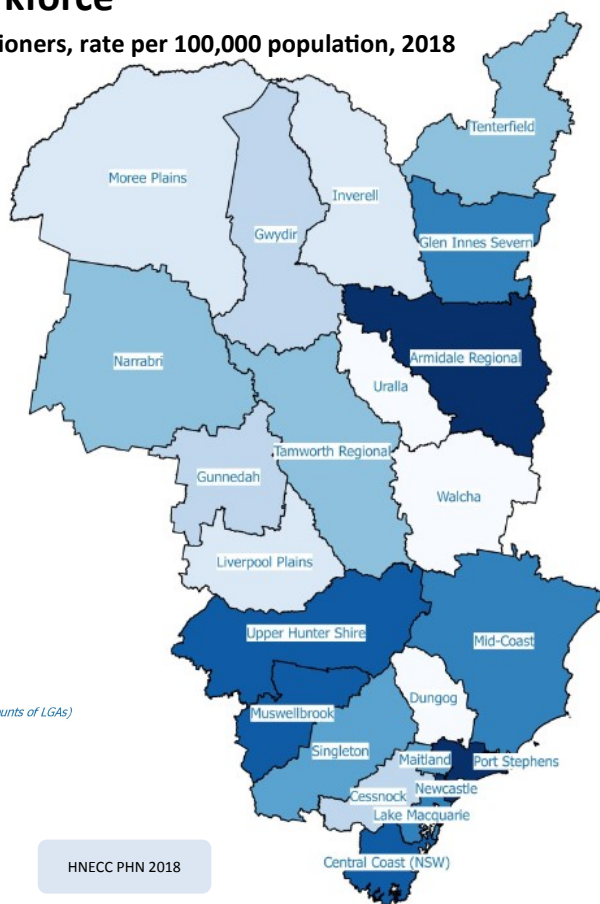
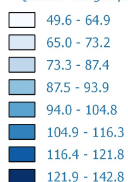
Health Workforce

General Practitioners, rate per 100,000 population, 2018

LGA	Rate per 100,000
Armidale Regional	125.6
Central Coast (NSW)	118.4
Cessnock	86.4
Dungog	55.7
Glen Innes Severn	113.2
Gunnedah	73.7
Gwydir	76.1
Inverell	72.8
Lake Macquarie	114.5
Liverpool Plains	65
Maitland	97
Mid-Coast	107.4
Moree Plains	68.4
Muswellbrook	118.1
Narrabri	91.7
Newcastle	142.8
Port Stephens	129.4
Singleton	95.7
Tamworth Regional	93.9
Tenterfield	90.5
Upper Hunter Shire	120.5
Uralla	49.6
Walcha	64.7

Rate per 100,000

* Quantile data grouping (equal counts of LGAs)



HNECC PHN 2018

Workforce

There is substantial variation in the primary health care workforce across the HNECC region, with generally lower numbers of clinicians in rural areas. As shown in the map to the left, there are particularly low rates of GPs in Uralla, Dungog, Walcha and Liverpool Plains LGAs. Some clinician groups are also poorly represented in our urban areas when compared to NSW as a whole.

Our primary care workforce will be challenged in coming years by the projected population growth, ageing population and increasing rates of chronic disease. Further challenges facing the workforce include:

- Ageing workforce
- Changing hours of work for younger GPs
- Reliance on international medical graduates in areas of shortage
- An expansion of corporate general practices often requiring additional support for non-vocationally recognised doctors

These challenges also impact small hospitals where GPs often provide VMO and procedural services.

Aboriginal Medical Services in Our Region

Ungooroo, Singleton
Tobwabba Aboriginal Medical Service, Forster
Armajun Aboriginal Health Service, Armidale, Tenterfield, Tingha, Inverell & Glen Innes
Pius X Aboriginal Corporation, (Moree, Mungindi outreach- Euraba, and Toomelah outreach)
Awabakal Newcastle Aboriginal Cooperative, Newcastle (Karuah, Toronto, Maitland, Raymond Terrace and Cardiff outreach services)
Walhallow Aboriginal Corporation, Quirindi
Tamworth Aboriginal Medical Service, Tamworth
Biripi Aboriginal Corporation, Taree (2 locations)
Yerin Aboriginal Health Services, Wyong

Workforce is a key component of health planning. It is impacted locally by the national and state economies, as well as by regional and local plans and developments. Our region's workforce numbers can be seen in the table to the left.

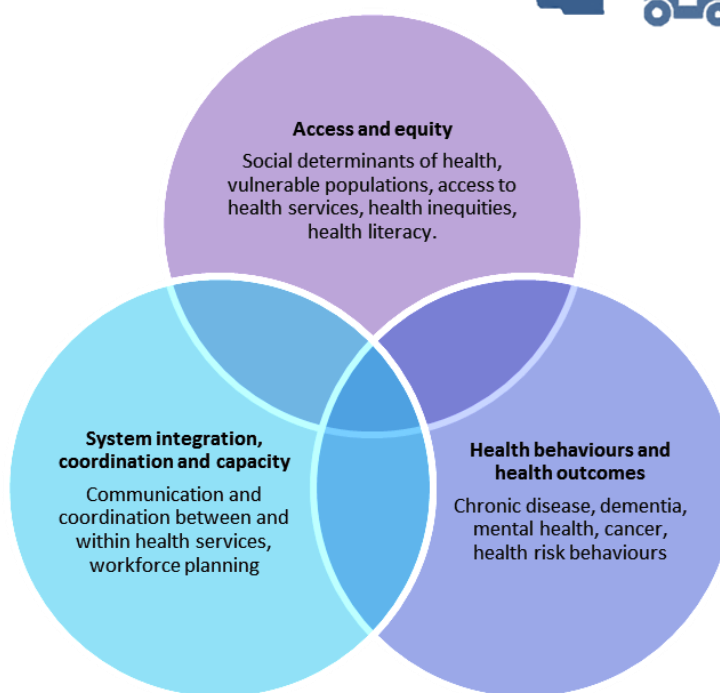
LGA	Number of General Practices	Number of GPs (including registrars)	Number of Nurses in General Practice	Number of Pharmacies
Armidale Regional	12	52	27	10
Central Coast	103	493	244	74
Cessnock	19	61	31	12
Dungog	3	9	5	3
Glen Innes Severn	5	11	9	2
Gunnedah	4	12	11	3
Gwydir	2	8	9	2
Inverell	6	20	16	4
Lake Macquarie	57	308	158	45
Liverpool Plains	7	16	15	2
Maitland	26	93	42	13
Mid-Coast	35	137	69	32
Moree Plains	5	18	16	4
Muswellbrook	5	25	21	4
Narrabri	6	15	3	3
Newcastle	62	285	127	43
Port Stephens	23	135	93	15
Singleton	9	31	14	4
Tamworth Regional	23	100	57	14
Tenterfield	5	7	3	2
Upper Hunter Shire	5	22	17	5
Uralla	2	4	2	1
Walcha	2	4	2	1

HNECC PHN 2018

What are the health needs and issues of the HNECC region?

We have combined information obtained from engagement activities with community members, health consumers, government services and primary health care providers, with the data presented in this compass to gain a better understanding of our region's health needs. The health needs and issues identified across our region can be broadly grouped into three categories presented in the diagram on the right.

Summary of Health Needs



Access and Equity

Health Literacy

Low levels of health literacy, particularly in vulnerable and disadvantaged populations, are experienced across the region. The ability to access and use health information is an important skill allowing people to make informed decisions about their health and helping them to maintain their basic health. Supporting data suggests that more than half of Australians may be unable to successfully access, understand, evaluate and communicate health information in a way that enables them to promote, maintain and improve health. Low levels of health literacy are more common in people aged over 65 years, and those from culturally and linguistically diverse populations and socioeconomically disadvantaged populations.

A range of community and service providers in the HNECC region recognised low levels of health literacy as a major challenge in working towards better health outcomes for clients, particularly those from vulnerable and disadvantaged communities, and those in rural locations. There was a general lack of knowledge about services and how to access them, along with issues in navigating health services, and a lack of computer literacy. People with low levels of health literacy have poorer levels of knowledge and understanding about their health condition, and are less likely to make and attend appointments; take their medication as required; and follow health behaviour advice. People with low health literacy are not able to effectively exercise their 'choice' or 'voice' when it comes to making health care decisions. Services insensitive to low levels of health literacy create barriers to access unintentionally. This is an issue across the health and social sector.

We have a high proportion of people aged 65 years and over (19.9%) compared to the state (16.3%) and this population is projected to increase. We have LGAs with particularly high proportions including: Mid-Coast (30.1%), Tenterfield (27.5%) and Gwydir (26.0%). It is projected that by 2036 more than a quarter (26%) of the HNECC population will be aged 65 years and over. Service provider consultation has revealed that older people in the community can experience difficulties accessing health and community care services. Barriers to accessing GPs for older people include cost, transport and time to wait for an appointment. Residents in aged care facilities also often struggle to access GP services, allied health and mental health services, which can result in poorer health outcomes and unnecessary visits to hospital emergency departments. Stakeholder engagement identified workforce capacity as a major gap and challenge in working towards better health outcomes, particularly for people who are disadvantaged or vulnerable. The need for multidisciplinary teams to ensure better health outcomes and greater ability to attract and retain skilled qualified people in aged care were highlighted. Particular workforce issues include, low wages, an ageing workforce, and a lack of understanding or expertise in the existing workforce. New models for providing primary care to residents of aged care facilities are required.

Care for an Aged and Ageing Population



Summary of Health Needs

More than 65,000 people (5.4% of the population) in the HNECC region are Aboriginal and Torres Strait Islander. Many of our rural LGAs such as Moree Plains (21.6%), Gunnedah (12.8%), Liverpool Plains (12.4%) and Narrabri (12.2%) have high Aboriginal and Torres Strait Islander populations. The Aboriginal and Torres Strait Islander population has a considerably younger age profile than the non-Indigenous population. Low socioeconomic status and disadvantage have an impact on local Aboriginal people, leading to vulnerability to poor lifestyle choices and illness. Aboriginal and Torres Strait Islander people have notably higher rates of mental illness and behavioural risk factors, such as rates of smoking during pregnancy, have lower rates of cancer screening participation, experience poorer antenatal and infant health, and have far worse health outcomes than non-Indigenous people with earlier onset of chronic disease, and higher rates of hospitalisations and mortality.

Aboriginal and Torres Strait Islander Health and Access to Services

It has been reported at a national level that Aboriginal and Torres Strait Islander people are not benefiting from mainstream health services as much as other Australians due to barriers accessing services or issues of cultural acceptability. We heard from Aboriginal and Torres Strait Islander health service providers and community organisations that the delivery of, and access to, culturally appropriate health initiatives and services were perceived as areas of need across the region. Other barriers identified included access to after hours GP services for Aboriginal and Torres Strait Islander people particularly where upfront fees are required, as well as access to GPs and outreach services in rural areas. Closed books and waiting times have been identified as barriers to booking timely appointments with GPs, both at Aboriginal Medical Services and General Practices for the Aboriginal and Torres Strait Islander population. Both the cost of appointments and the cost of medications were considered to be major barriers to accessing a GP, despite a number of programs in place to reduce the costs of health care for Aboriginal and Torres Strait Islander people. System complexity, particularly in the provision of health services to Aboriginal and Torres Strait Islander people with complex needs, was also identified as an area of need.

Maternal, Child, Youth and Family Health

Service providers report a significant gap in the region for affordable and timely services for children aged 5 to 12 years, particularly related to mental health services, dental services and family based therapies. Barriers include cost, waiting periods, transport and lack of suitable services. A large number of young people do not have adequate family and social support networks. Consequences of this can include presentation to services in crisis, homelessness, disengagement from family and failure to complete education, all of which can lead to future adverse health and social outcomes. Lack of available mental health services, suicide and risky drug and alcohol behaviours are a concern for communities across the region.

Community members and service providers also report a lack of understanding of the range, type and availability of health services in the region as well as having no central point for accessing this information. There is a need to increase integrated care for young people across the region. There is a younger maternal age (<19 years) for Aboriginal and Torres Strait Islander women compared to non-Indigenous women within the region. Concerns for this population also include geographical isolation and child care arrangements, rates of smoking during pregnancy and low birth weight babies, oral health for children, services and education. The region has a higher proportion of women who smoked during pregnancy, low birthweight babies and infant mortality compared to NSW. These rates are significantly higher in rural areas.

Over 75,000 (6.6%) people in the HNECC region have a severe or profound disability. This is a higher proportion compared to the state. There are also over 125,000 (12.6%) people aged 15 years and over providing unpaid assistance to persons with a disability, which is higher than the state proportion. This was highest in the rural LGAs of Uralla, Mid-Coast, Lake Macquarie and Dungog. Home and Community Care representatives identified a lack of carer recognition, a lack of respite services and a decrease in the number of volunteers in the sector as challenges. They also identified a need for additional programs for active individuals with mild cognitive impairment. There are capacity issues in smaller rural communities, limited residential facilities and an ageing workforce/carers. Service providers, consumers and carers reported concerns about the potential impact on accessibility of services for people living with a disability with the implementation of the National Disability Insurance Scheme (NDIS) including: need that is currently not visible (e.g. elderly parents that have always cared for their child without seeking help) placing demands on the system; lack of capacity and skilled workforce in the NGO sector to take on this type of work; change for service providers from a focus on service delivery to brokering and negotiating with clients and families; and loss of a skilled Allied Health workforce in the NDIS transition.

Disability

Summary of Health Needs



Rural Health and Access to Services

On average, people living in rural and remote locations experience poorer health outcomes such as a reduced life expectancy, higher rates of chronic disease and higher rates of suicide. They are more likely to smoke, be overweight or obese, be insufficiently active, engage in harmful drinking and have high blood pressure. Delivering primary health care to rural regions, where the population is dispersed and the health problems diverse, presents many challenges. GPs, practice nurses, dentists and private allied health providers are not spread evenly across the region, with fewer health professionals per head of population in some of our rural areas. Geographical location and isolation in rural areas limits access to face-to-face services and is seen as a major gap and challenge in working towards better health outcomes, particularly for people who are disadvantaged or vulnerable. Common barriers to accessing care in the rural areas include difficulty getting an appointment, transport and the time taken to travel to services. Developing our knowledge of the distribution of primary care services in our rural communities will help us coordinate our support to develop services where they don't currently exist and enhance service provision in areas of limited access. We cannot change the distance between our cities and towns, however we can work with our rural service providers to help develop and maintain integrated models of care to ensure the best systems are in place to maximise access to the existing providers.

Limited access to a GP outside normal operating hours was highlighted as a barrier in our region, particularly in those rural and remote areas not supported by the HNECC commissioned Small Towns After Hours (STAH) program. A Hunter based survey identified that over a quarter of people in rural areas reported that after hours services were not available in their area, and half believed that the current range of local after hours services did not meet their needs. These residents were far more likely to present to their local hospital emergency department in the after hours period for problems that did not require emergency treatment. There were also fewer rural residents that knew how to contact an after hours GP service compared to their urban counterparts. Nearly a quarter of respondents in the rural areas believe that a lack of awareness of local after hours services was a barrier to access. Interviews with service providers identified a lack of after hours GP services; limited information about the availability of after hours GP services; and a lack of workforce coordination and collaboration to share after hours availability, as barriers to providing after hours care in rural and regional locations.

After Hours Health Service Access

Transport and Cost of Health Services

Access to transport has a significant impact on the health and wellbeing of the population. Limited transport was consistently identified as a significant barrier to accessing health services in our region, particularly for Aboriginal communities, for older persons and those residing in rural areas. Transport was highlighted as a particular concern by the social and community services sector working with people experiencing disadvantage and by organisations supporting people with chronic illness. A specific challenge involves the coordination of transport services with timing of medical appointments. Cost of health services and medication is also a barrier to optimum health, leading to a delay in treatment and health service access.

Within our region, cost of service was the main barrier to accessing healthcare when needed. Issues identified in our region include: a lack of bulk billing by GPs; consumers not being able to afford gap payments charged by allied health providers and specialists; and increased demand for public services with long waiting times or strict eligibility criteria.

Health Behaviours and Health Outcomes

There are high rates of health risk behaviours, contributing to chronic disease and hospitalisations, in our region. Over one third of our population are overweight and three in every ten are obese. These rates are higher than the state rate. Only half of the population are consuming the recommended amount of fruit and only one in ten consuming the recommended amount of vegetables. Smoking, high risk alcohol intake and physical inactivity rates are also above the NSW average. A reduction in these risk factors will promote health and wellbeing and prevent hospitalisations and chronic disease. Community consultation indicates presence of a gap in knowledge about where and how to access healthy lifestyle programs and advice, and gaps in availability of drug and alcohol services.

Engagement with community members, NGOs and LHD professionals identified cost of healthy food, easy access to fast foods, advertisement of fast foods, limited options for healthy takeaway, awareness of where to shop, and knowledge of how to cook, as barriers to good nutrition. Limited areas designated to exercise, knowledge of gyms, feeling unsafe exercising, and working hours were identified barriers to physical activity in some communities in the region. Services that prevent illness or the formation of long term health conditions, or assist in the early detection of health problems within the region are limited for some population groups. There is reported restricted capacity for service providers to provide prevention or early intervention. Ongoing and targeted health promotion and prevention is required to maintain and improve health outcomes.

Health Risk Behaviours



Summary of Health Needs

Mental Health

Mental health is an area of concern in our community, with high rates of chronic mood and behavioural problems for both males and females, as well as high rates of reported psychological distress. Rates of hospitalisations for intentional self-harm for the HNECC region are also well above that of the state. Stakeholder engagement with multicultural community and refugee service providers, and Aboriginal community organisations identified mental health needs within Aboriginal communities, new arrivals and young people. We heard from the community that there were a number of barriers to accessing mental health services including: time, cost, distance and lack of transport. There also appears to be a lack of knowledge of available services and where to seek help. Limited access to mental health services reported, particularly in the rural areas, corresponds to the low numbers of mental health service providers in rural areas. There is limited services for people experiencing moderate to severe mental illness and clinical care for people experiencing severe mental illness is not available. It is also noted that there are gaps in services for youth mental health and suicide prevention services. There is a need for increased support for GPs in mental health care including through enhanced stability of the mental health support service system and associated pathways to care and 24hr psychiatry access. System complexity, poor coordination of services and the lack of availability of early intervention services have also been identified as barriers to accessing mental health services. Referral pathways are unclear and mental health services are administered in silos, with poor access to health records. There is also a need for enhanced capacity of services to recruit and retain allied health staff, particularly psychiatrists and psychologists, especially in rural areas. There is also a need for greater support for families and carers of people living with mental illness and a greater capacity for communities to implement evidence based post-vention strategies.

Drug and alcohol is an increasing concern in our region leading to ill health and mortality. Alcohol attributable deaths in our region were higher than the state average and the rate of mental health overnight hospitalisations for drug and alcohol use was higher than the national average. All LGAs across our region are above the NSW average for risky alcohol consumption. There are a number of key challenges in developing a comprehensive picture of the drug and alcohol treatment needs across the region. These relate to the nature of the issues being dealt with and the potential stigma for those seeking assistance; the movement of individuals across regions and borders to seek treatment; the availability of particular targeted services in specific areas; the organisational design of providers who do not necessarily conform to defined regions; and the confounding issues of co-morbidity, particular mental illness. Specific alcohol and other drug treatment service needs identified in our region are: there are limited opportunities for treatment for individuals who have co-existing health and addiction issues; a key risk point for relapse is the transition from one type of service to another, which often coincides with shifting from one provider to another; networks between service providers are varied and are often dependent on informal communication; there is a chronic undersupply of residential rehabilitation beds across all service provider types; and certain groups within the community have poorer access to, or an unwillingness to participate in, mainstream alcohol and other drug services. Stakeholders from across the region have highlighted a need for greater integration between Aboriginal and Torres Strait Islander mental health, and drug and alcohol services, and for more flexibility in treatment approaches. More promotion and support is required for services to treat substance misuse, including programs that target Aboriginal and Torres Strait Islander people, to achieve better outcomes for individuals and communities affected by alcohol and drug misuse.

Alcohol and Other Drugs

Chronic Disease

Lifestyle related chronic diseases such as diabetes, cardiovascular disease and airways disease are pressing issues for our communities and are leading to increased hospitalisations in the region. We have one of the highest rates of airways disease - chronic obstructive pulmonary disease (COPD) and circulatory system disease in Australia. High rates of chronic disease are placing a burden on the health of our community and on the health system, resulting in an increase in hospitalisations, and in particular hospitalisations which could have been prevented if the chronic disease had been treated and managed within the community or primary care setting. COPD was the third cause of potentially preventable hospitalisations in our region in 2016-17, and diabetes the 8th highest. Chronic disease is a substantial area of need for Aboriginal and Torres Strait islander people in our region, with 73% of Aboriginal people reporting at least one long-term health condition. Stakeholders have particularly highlighted diabetes, cancer and kidney disease as health needs for local Aboriginal and Torres Strait Islander communities. Service providers report in the area of chronic disease management, that patient compliance and motivation can be low, impacting on patient outcomes. There appears to be limited access to chronic disease management programs in rural areas, and there is limited health workforce available to fill this gap.

Summary of Health Needs



Cancer Screening and Incidence

As a whole there are low participation rates for cervical, breast and bowel cancer screening across our region. Whilst many LGAs in our region have screening rates which are equal to or above the state rate for cancer screening, there are LGAs that have much lower participation. There are high incidence and mortality rates for melanoma, prostate, lung and colon cancer across the HNECC region. There is a need for prevention in the community, and facilitation of early screening and detection within the primary health care setting.

The aged and ageing population in our region presents increased health needs particularly around dementia, with predicted dementia prevalence exceeding anticipated state and national increases. In 2016, Gosford, Terrigal and The Entrance had the highest dementia prevalence estimates, whilst Maitland, Cessnock and Upper Hunter had the lowest. In 2015-16, the rate of mental health overnight hospitalisations for dementia in the HNECC region was 5 per 10,000 compared to the national average of 6 per 10,000. The highest rate in our region (6) was reported in Maitland, Lake Macquarie-West, Tamworth-Gunnedah and Newcastle SA3s.

Dementia

System Integration, Coordination and Capacity

Health Workforce

Our primary care workforce will be challenged in coming years by the projected population growth; projected growth in numbers of people aged 65 years and older; and increasing rates of chronic disease. In addition to this, a number of workforce capacity issues have been identified in our region, including a limited number of health professionals and an ageing workforce. We have a workforce that is inequitably distributed across our region, in some areas we have fewer health professionals including GPs, practice nurses, dentists and allied health practitioners than other areas. Medical workforce shortage and geographical distribution are critical factors in accessing primary health care.

It is recognised that a lack of integration and coordination of services and information exchange in the health system is making the system difficult for patients to navigate and affecting continuity of care, particularly for those living in regional and rural areas. Patients, health professionals and other stakeholders highlighted the lack of collaboration occurring between services and individual providers across the region particularly multiple agencies working in 'silos', and poor communication between hospitals and primary care services. There is a need to improve the patient journey, enhance information management and information sharing, and increase service integration and coordination.

Service Integration and Coordination



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The background of the entire page is a vibrant Indigenous Australian artwork. It features a dark blue upper section, a green and blue wavy middle section, and a purple and blue lower section. The artwork includes various figures, including a large central figure with arms raised, and a winding river or path. The text is overlaid on this artwork.

phn

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