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An Australian Government Initiative

Nepean Blue Mountains Primary Health Network

Needs Assessment

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Section 1 – Narrative

Introduction

The 2019 needs assessment encompasses the health and service needs of the Nepean Blue Mountains region covering the **general population; primary mental health and suicide prevention; national psychosocial support; indigenous health (including indigenous chronic disease) and; alcohol and other drugs.**

The needs assessment consists of two key components – a systematic **analysis** of the health and service needs of our local population, and an **assessment** of the gaps and relative priorities that will support planning opportunities within primary health to address unmet needs in the Nepean Blue Mountains region.

The needs assessment has been underpinned by observing the need to meet the PHN objectives of efficiency and effectiveness of health services for patients, particularly those at risk of poor health outcomes, and considering opportunities to improve coordination of care. The PHN key priority areas of mental health, Aboriginal and Torres Strait Islander health, population health, health workforce, digital health and the needs of older persons have been encompassed within all components of this needs assessment within key outcome themes.

The 2019 iteration of the needs assessment has been informed by previous needs assessments and the outcomes of the monitoring and evaluation of previous activities and investments by NBMPHN, captured within our annual activity plans and reports. As time is required to effect change, the priority themes identified within this current 2019 needs assessment have largely remained unchanged over the last three years.

Summary of the process

The health and service needs **analysis** component of this needs assessment involved two key processes:

Data collection and analysis

- The comprehensive needs assessment undertaken in 2015 by the then NBM Medicare Local provided a baseline of local data about the region, which has been built upon over the last four years through successive refreshments.
- A wide range of demographic and epidemiological data, along with the social and economic determinants of health, have been consulted to form the basis of our data collection and analysis. These have included National, State and local data reports and other sources of information including recent demographic and epidemiological information identified in the ABS 2016 Census Community Profiles; 2016 Census of Population and Housing: Socio-economic Indexes for Areas, ABS 2016-17 Patient Experience Survey, ABS 2016 Coordination of Health Care Study, AIWH Healthy communities report - specifically, Out-of-pocket spending on Medicare Services 2016-17, MBS GP and Specialist attendances and expenditure in 2017-18, Incidence of selected cancers in 2009-2013 and Immunisation rates for children 2018-19, HPV immunisation rates 2015-16. Additionally MBS, PBS, MBS PIP, Health Statistics NSW and Cancer Institute NSW Reporting Better Cancer Outcomes Performance Report 2019.
- Chronic and preventable disease de-identified data extracted from general practices in our local region has been aggregated and used to identify key population health gaps in primary care that may benefit from improvement. Key data sets include diabetes, CVD, COPD, asthma, and cancer screening, as well as aligned MBS and PIP service utilisation.
- The National Mental Health Services Planning Framework – Planning Support Tool was utilised for the first time to identify population needs and service demand in our region for individually

tailored mental health service responses, by severity level according to the mental health stepped care framework. MBS primary care data aligned to the tool by AIHW, was also used to identify potential areas of unmet need for NBM primary mental healthcare services delivered by primary healthcare providers, GPs, specialists and for specific population groups such as Youth.

- Data on publicly funded specialist drug and alcohol treatment services in the NBM region was accessed for the second time at a regional level via the AIHW AOD Treatment Services National Minimum Data Set (AODTS-NMDS) for 2017-18. Key data was utilised to identify regional utilisation of AOD treatment services, client principal drugs of concern for seeking treatment, and trends in main types of AOD treatment received, treatment delivery setting and source of referral.
- MBS data for use with the Indigenous Health Check item (715), Indigenous follow-up service items (MBS item 10987 and items 81300-81360) and de-identified and aggregated data extracted from general practice, has been used to identify service gaps in primary care relating to the use of preventive health assessments for chronic disease and absolute cardiovascular risk for Aboriginal populations.
- Service and workforce mapping has considered the primary health workforce type and linkages across health services within the region. Services considered include general practice, after-hours GP services, specialists, allied health, mental health, and alcohol and other drug services.
- Workforce considerations targeted local primary healthcare professionals (with a focus on general practitioners, general practice nurses and allied health professionals), Aboriginal and Torres Strait Islander Health Workers and specialists. Additionally access, equity, quality and appropriateness of services have been encompassed within the scoping of need.
- Current access to integrated care in the region has been assessed to identify the need for care coordination and linkages between health and social services on discharge from hospital. This specifically impacts readmission rates to hospital and affects people with chronic conditions including diabetes, CVD, obesity, COPD, dementia; mental illness (for those who are at high risk of suicide); older persons and those approaching end of life.
- The parallel development of localised NBM Health Pathways facilitates connectivity and service integration between primary and secondary care specialist services with increased patient safety and quality of care and continues to identify gaps in the coordination of services across sectors most recently addressing obesity, eating disorders, mental health access, COPD, gastroenterology, falls prevention, cancer screening, antenatal shared care and end of life care.
- A local electronic storage solution was developed to manage the plethora of growing data sets which resulted in a local NBMPHN Data wiki. This innovative and secure storage solution has enabled the needs assessment to become a living, dynamic platform of iterative information, readily updated and accessible by PHN staff involved in planning and commissioning activities.

Consultations with key stakeholders

- The PHN has a strong commitment to engagement and consultation with consumers. Local communities have continued to be consulted to provide essential qualitative insights on the health needs of the region and how they affect the quality of life of consumers. Four regional Community health forum reports, conducted by the NBMML in 2013, remain relevant baseline references. More recent consultations have encompassed representative stakeholders of the six key priority areas of PHNs and included vulnerable/disadvantaged communities including Aboriginal and Torres Strait Islander persons, persons from a CALD community and young people. The joint NBMLHD and NBMPHN Community Advisory Committee identified a range of key concerns including access to GPs and other health services; transport to health services; a lack of hospital inpatient services for mental health patients; gaps in consumer health literacy; consumer assistance needed in developing advanced care directives and uploading and viewing in My Health Record; improved support post discharge including quality of communication and navigating of services. These consultations have provided consumers with an essential voice in the planning of primary health services within the NBM region.
- Consultations with targeted populations at risk of poorer health outcomes, and the organisations that currently provide services in these areas, have been a large part of the mental health, NPS

and AOD components of the needs assessment. The qualitative feedback has compensated for a lack of current and available quantitative data in these areas.

- Consultations with health professionals, including GPs, Allied Health and practice nurses in the NBM region have provided the clinicians perspective of health service gaps. These have included consultations with the PHN Integrating Care Clinical Council, the PHN GP Clinical Council and the PHN Allied Health Clinical Council. Leading concerns relate to: long-term case management for vulnerable patients with a mental illness; clinical governance across sectors relating to the safe transfer of care between hospital and primary health systems; digital health communication between tertiary services and primary health, including the quality of discharge summaries and advance care directives; high rates of opioid use and substitution therapies; coordinated approaches between services for patients with complex needs, comorbid mental health and drug and alcohol conditions and psychogeriatric issues; generic communication templates to support end of life wishes of consumers across health sectors i.e. Advanced Care Plans.
- Consultation with the NBM Local Health District Planning Directorate and Integration sponsor has enabled alignments with regional health needs and joint priorities and provided an understanding of how each entity may develop complementary services and avoid duplication to support continuity of care across sectors.
- Consultation with the NBM Local health district mental health directorate has similarly enabled joint identification of regional mental health and suicide prevention needs, and provided a foundation plan articulating agreed principles for integrating and improving coordination of care across sectors.
- Consultation with other government bodies, such as the Cancer Institute NSW, local Councils and local schools, and key non-government organisations including the Lung Foundation, Improvement Foundation, local health interagency groups and current commissioned service providers has enabled specific feedback on population health and or service gaps affecting the local region.

The **Assessment** component of the needs assessment has synthesised the main themes, identified consistently throughout the analysis process, and triangulated these with available evidence to identify key opportunities, priorities and options for the 2019-20 annual plan for the region.

Summary of Key Issues

1. General Population

The broader wellbeing of the general population within the Nepean Blue Mountains (NBM) region is impacted by the geography, demographics, social determinants and cultural aspects, economy, population health and access and availability of local health services.

NBM is a geographically diverse region with isolation, poor access to public transport and health services in some parts of the region. The current population of 377,189 people living in the region is expected to increase by 24%, to 466,650 people, by 2036. Of this population, 3.7% are Aboriginal and Torres Strait Islander which is higher than the NSW state average of 2.9%. People aged 65 years and older comprise 14.1% and this is expected to rise to 20.7% by 2036.

The NBM region also demonstrates significant cultural diversity, in particular the Penrith LGA. In 2016, 24% of the NBM population were born overseas and 11.9% spoke a language other than English at home. Major issues impacting NBM CALD communities include low and poor health literacy levels; problem gambling and misuse of alcohol and other drugs; increasing levels of obesity and chronic disease; and poor access to interpreter services.

Wide disparities in levels of socio-economic advantage and disadvantage are experienced within NBM LGAs with **Lithgow LGA** having high levels of disadvantage and some areas of extreme disadvantage. Populations with special needs include persons who are a victim of domestic violence, in particular in Penrith which had the highest number in the NBM region and higher incidence of domestic violence

assaults compared to NSW. Persons from the Samoan community demonstrate high prevalence of overweight, obesity, type 2 diabetes and hypertension, with associated high rates of hospital admissions related to diabetes and renal dialysis. Syrian refugees demonstrate high cultural diversity and complex mental and physical health needs.

Under the Australian Humanitarian and Refugee Program, approximately 219 humanitarian refugees settled in the NBM region from January 2016 – March 2019, with almost 9 out of 10 humanitarian entrants settling in the Penrith LGA over this period. With 85.2% of NSW refugees reporting having nil or poor English language proficiency skills, it is expected this will negatively impact the ability of refugees settling in the NBM region to access local health and social welfare services.

The development of the new Badgerys Creek Aerotropolis over the next 10 years is expected to have a bearing on the health and service needs of the greater Western Sydney region. Major infrastructure development will have an impact on the environment, economy and the health and social needs of the local population which are yet to be fully determined. The Western Sydney City Deals Health Alliance has recently been formed and is planning to address prioritised areas of health needs across eight councils, two PHNs (inclusive of NBM) and two LHDs that encompass the Western Sydney Parklands city region.

Cost appears to be a barrier to accessing specialist, psychiatry and allied healthcare services for NBM residents, in particular within NBM locations with the greatest socio-economic disadvantage. The lowest proportion of NBM residents who visited a specialist or psychiatrist, or who accessed allied healthcare services outside of hospital in 2017-18 tended to be those residing in the Lithgow-Mudgee, St Marys and Penrith smaller area SA3 locations. Region-wide, eight percent (8%) of NBM residents delayed or did not see a medical specialist, GP, get an imaging test or pathology test due to cost in the 12-months prior to 2016-17 (Australia 6.5%).

Low health literacy is a risk factor for poor health and an estimated 59% of adult Australians have an inadequate level of health literacy to meet the complex demands of everyday life. Local consumer feedback confirms health literacy as a gap in the NBM region.

Health and Service needs

Service Integration and coordination of care between primary and secondary services is a significant need within the NBM region, impacted by the rising prevalence of chronic conditions and people presenting to hospital with chronic conditions. Chronic conditions contribute significantly to premature mortality and morbidity in Australia. Rates of chronic conditions and their associated risk factors are increasing locally and nationally, impacting on health care systems, as well as individuals who often have complex health needs, die prematurely and have poorer overall quality of life.

The top three health conditions in the NBM region relate to Circulatory diseases – with **Cardiovascular disease** (CVD) as the leading cause of death (636 total deaths in 2017) in females and second leading cause of death in males, and accounting for the second highest rate of death among 10 PHN regions in NSW; **Overweight and obesity** with 61.16% of adults being overweight (32.3%) or obese (29.3%) and the region ranking as the third highest amongst the 10 PHNs in NSW (NSW 54.2%). Increasing rates of obesity are escalating at a faster rate than NSW rates, with eight out of 10 adults having one or more risk factor for obesity. The projected future rate increases in obesity and severe obesity are most alarmingly amongst children as well as adults. Lithgow and Penrith LGAs have the highest rates of obesity; and **Diabetes**, with the prevalence amongst adults rising rapidly, from 7.6% in 2012 to 10.9% in 2017, which is higher than the NSW average (8.4% to 10.1%). Lithgow and Penrith LGAs also have highest hospitalisation rates for diabetes, which are higher compared to the NSW state average. Diabetes prevalence for Aboriginal and Torres Strait Islander people is 3.5 times higher with rates of potentially preventable hospitalisations for diabetes complications being 4.1 times higher.

Potentially preventable hospitalisations (PPHs) within NBM region are above the NSW state average for –
1) *Chronic conditions*: COPD, Congestive heart failure and Asthma; 2) *Acute conditions*: dental conditions,

urinary tract infections including pyelonephritis and cellulitis; 3) *Vaccine-preventable conditions*: pneumonia and influenza. Highest PPH rates in the NBM region in are now for **acute dental conditions**, followed by **COPD** and **urinary tract infections** including pyelonephritis. Other respiratory diseases including influenza and pneumonia and asthma also account for high death and hospitalisation rates in our region compared to the NSW average. Influenza and pneumonia occurrence in the NBM region triggered the highest hospitalisation rates for children aged 0-4 year among 10 PHNs in NSW. Asthma accounts for the highest prevalence in the NBM region amongst NSW metropolitan PHN regions and has higher rates than the NSW average for children and adults. Dialysis was the leading cause of hospitalisations (13,753 hospitalisations in 2016-17) overall.

Cancer as a group (all cancers combined) is the **leading cause of death in males and second leading cause in females** in the NBM region with the incidence rate for all cancers steadily increasing. Cancer incidence rates for specific cancer types including **breast, colorectal, skin melanoma, prostate and lung cancer**, are higher than the national average in some smaller areas in the NBM region.

In keeping with NSW trends, participation in **breast and bowel cancer screening** amongst age-eligible persons in the NBM region has continued to increase, however **cervical screening** has continued to decline up until the commencement of the new National Cervical Screening Program (CSP) on 1 December 2017. Screening participation data for the new CSP is not yet available. NBM screening participation rates for breast (49.0%) and bowel cancer (38.8%) remain lower than NSW state averages (52.8% and 39.5% respectively), with NBMPHN ranked 8/10 and 6/10 among NSW PHNs. Lowest participation rates within NBM LGAs observed for breast screening are in Lithgow (45.7%) and Penrith (48.2%), and for bowel screening in Penrith (36.4%) and Hawkesbury (38.5%) LGAs. NBM breast screening participation for CALD women has recently declined, from 42.2% in 2015-16 to 40.6% in 2017-18, and remains below the state average at 44.1%. Common barriers to engaging patients in cancer screening in general practice include: poor standardisation and integration of systems for reporting breast, cervical and bowel cancer screening results electronically within patient reminder systems in general practice clinical software; and a disconnect between the National Bowel Cancer Screening Program and general practice.

Tobacco smoking is known to be the greatest preventable cause of cancer. While similar rates of smoking are seen among NBM adults and in NSW (15% each), a higher proportion of NBM women (12%) smoked during pregnancy compared to NSW (8.3%). This difference however is attributed to a higher proportion of non-Aboriginal women who smoked during pregnancy (NBM 11.0% vs. NSW 6.9%). Despite having the lowest rates in NSW (NBM 34.5% vs. NSW 45%), a significant proportion of NBM Aboriginal women smoked during pregnancy.

Childhood immunisation rates are in general similar to or above average compared to state rates for all children and Aboriginal and Torres Strait Islander children at 1 and 5 years of age, however coverage for children 24-<27 months is lower than for other NSW PHN regions, and is the lowest in NSW for NBM Aboriginal children 24-<27 months. Lowest immunisation rates in the NBM region continue to be observed in the Blue Mountains LGA, possibly due to conscientious objection.

High rates of **prescribing all antimicrobial medicines, amoxicillin and amoxicillin-clavulanate** have been recently identified within most NBM smaller area SA3 locations compared to NSW state averages. There are also indications of suboptimal management of non-specific low back pain within general practices in Western Sydney, including NBM, compared to clinical guidelines. These include overuse of imaging as part of the diagnostic approach, over-prescription of opioids as a first line treatment and management recommendations including bed rest (none are indicated by guidelines).

Dementia is the third leading cause of death in the NBM region and its prevalence is projected to increase from 1.0% in 2011 to 1.9% by 2031, with the highest prevalence in Lithgow (3.0%) and; Blue Mountains LGAs (2.3%). Dedicated services for people with dementia are limited outside of the Penrith LGA and impacted by geographical distance and transport to Penrith. Aboriginal and LGBTI persons with dementia also have poorer access to services, both in general and those that are culturally appropriate.

The growing needs of the ageing population are also increasing existing pressure on primary care services, particularly the need for coordinated care and services to keep people at home longer. Residential Aged Care Facility (RACF) places are limited to around **2,550** places, which will need to increase to meet the predicted growth in the ageing population. Social isolation and loneliness are increasing problems for older people, with impacts including poorer physical health, mental health and use of health services. There is a high prevalence of chronic conditions and multi-morbidity among older persons and **falls** are the leading cause of injury and hospitalisations amongst older persons in the NBM region. Influenza A outbreaks have been reported for residential aged care facilities in NSW, however no regional data is readily accessible.

More than half (53.2%) of people using residential aged care services in NBM have a diagnosis of dementia. The most rapid increases in high care needs among Australians living in permanent residential care are for complex health care procedures and activities.

Interim findings from the **Commonwealth's Royal Commission into Aged Care** Quality and Safety highlights confronting issues regarding home and residential care for older people. Broad issues relate to: 1) Accessing home care, e.g. not being able to access a home care package in a timely way; 2) Navigating the aged care system, e.g. difficulty finding information about what local service options are available and working out how to coordinate services delivered by different providers; 3) Quality and safety issues, e.g. inappropriate prescribing of antipsychotic medications and medication use in general. Further advice on the Royal Commission outcomes will be released over the next 12 months.

There is increasing need for **end of life care (EoLC)** and the services that will allow people to die in their place of choice. Regional opportunities exist with increasing consumers and carers death literacy and connectivity to EoLC services, and primary care initiating end of life discussions and developing advance care plans with patients. Access to Advance Care Plans through the My Health Record by patients, GPs, RACFs and hospitals is universally needed.

Access to comprehensive primary healthcare services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and promoting health equity for all Australians. Major access barriers reported by consumers include poor knowledge of local health services, difficulties in obtaining information, and difficulties travelling for health care due to inadequate transport options. Transport for NSW, a NSW government branch conducted place-based transport strategy planning forums for the Penrith LGA in 2019 and are now in the process of developing a greater Penrith collaboration area place-based future transport strategy.

Access to **general practice services** for NBM residents also remains a challenge in some areas. 3.6% NBM general practice patients don't have a usual GP or a usual place of care (Australia 2.5%). Accessing a GP and maintaining continuity of care with the same GP is increasingly difficult in the Blue Mountains, where extended waits times to access a GP exist.

Historically, a large proportion of the NBM region was classified as being a District of Workforce Shortage (DWS). This allowed for overseas trained doctors and those on a medical bonded placement scheme to work in this region. Under the Commonwealth's Stronger Rural Health Strategy, the DWS system was replaced on 1 July 2019, with the new Distribution Priority Area (DPA) scheme. Introduction of the new DPA scheme will significantly impact GP recruitment efforts, particularly in the Blue Mountains LGA, most of Penrith and most of Hawkesbury LGAs which were previously classified as being a District of Workforce Shortage.

The **GP to population ratio** in the region (130 GP per 100,000 people) is relatively lower compared to the national (145) and NSW average (139). Only 53% of NBM general practices employ at least one nurse (Australia 63%). Predicted future shortages in the General Practice nursing workforce in Australia is likely to impact the quality and costs of patient care. Inadequate data, such as FTE or FSE (rather than headcount) to estimate capacity of the NBM General Practice workforce, Nurses working in general practice and other

primary healthcare professionals limits the effectiveness of current regional planning for the primary care workforce.

There is a significant demand for health advice and access to a doctor in the **after-hours** period. 73% of the 19,065 calls to the HealthDirect helpline telephone triage and advice service by NBM residents in 2017-18 occurred in the after-hours period. 35%, or 6,653 callers to the service, were advised to see an after-hours GP or to see a doctor within the next 2-12 hours. High demand for after-hours primary care is also seen for RACF residents. Workforce shortage of GPs and National policy changes in March 2018, regarding the use of urgent after hours MBS items, have impacted local after-hours and Medical Deputising Services in the NBM region.

2. Primary Mental Health Care

The geography, demography and economy of the NBM region, as described within the general population section, applies to all components of the primary mental health care needs section.

Suicide prevention

Health Needs Analysis

Individuals and populations most at risk of poor health outcomes in relation to suicidality have been determined across broad categories. People living with mental illness, suffering socio-economic disadvantage and /or those who are unemployed (particularly male cohorts), persons with a personal history of self-harm, persons aged 65 years and older with limitation of activities due to disability or other chronic health conditions, people with two or more physical chronic health conditions, and people who have a personal or family history of suicide attempts have been highlighted as most at risk. Further conflagrating factors include separation from partner/family, addiction issues and sexuality (particularly younger adults). Men are 3.1 times more likely to commit suicide than women. More generally people aged 25-34 yrs. and those who live in more remote areas are at greater risk. Once an attempt has been made, further increased risk has been highlighted to those recently discharged from hospital.

In terms of geography, suicide rates have most recently been reported to be highest among young men and women in the Lithgow LGA. The highest rates of intentional self-harm hospitalisations most recently occurred in Blue Mountains, Penrith and Lithgow LGAs (most notably among females).

Social determinants of health

The cumulative burden of negative situational life events are significant contributors to heightened risk of suicide are among men. 80% of suicide deaths are associated with mental health and substance use disorder comorbidities. In the NBM region death rates by intentional self-harm (suicide) remained the third highest in 2017 (NSW) compared to the previous 10-year period. There were 3.1 times higher rates of suicide among men as opposed to women.

The region displays significantly higher rates of hospitalisation due to self-harm compared to the NSW state average. Findings describe increasing rates of suicide ideation and behaviour, and self-harm among young people, particularly amongst young women. Interventions to address community awareness of suicide, suicide risks and opportunities to support people who are at risk are perceived to be inadequate.

Populations with special needs

It is of significant concern that;

- Suicide rates for Aboriginal and Torres Strait Islander people are more than double than that for non-Indigenous people. In 2017, suicide was the second leading cause of death for Aboriginal and Torres Strait Islander males, and the seventh leading cause of death for Aboriginal and Torres Strait Islander females. Deaths due to suicide also accounted for a higher proportion of all deaths among Aboriginal and Torres Strait Islander people (5.5%) compared to non-Indigenous Australians (2.0%).
- Approximately 6.4% of the NBMPHN population identify as a LGBTI person. Young people identifying as LGBTI are five times more likely to have attempted suicide than other young people. To date, there is no local data available to correlate this research

- There has been a recent surge in suicides and self-harm reported among young people in the Pacific Islander community in Western Sydney, including Penrith LGA.
- The largest difference between Indigenous and non-Indigenous suicide rates occurred at younger ages, at a rate more than 3 times higher for 15-24 and 25-34 year olds

Service Needs Analysis

Our findings highlight the need for a focus on people who have attempted, or are at risk of suicide, their families and friends. Evidence shows us that they experience difficulties navigating referral and care pathways, including accessing appropriate services and timely referral to a full range of supports. Concerns remain around the continuity and transfer of care for people who have made an attempt on their life after discharge from hospital; including support available for family members. There is a higher risk of suicide following hospital discharge and or a reduction in treatment post discharge within the first day and week heightening the need for care coordination.

Mental health

Health Needs Analysis

Prevalence of mental illness and estimated service demand

The population prevalence of persons in the NBM region with mental health needs including early intervention and relapse prevention needs; and mild, moderate and severe levels of severity is 39.9%. Of these, 16.7% of the total population would be likely to have a mental illness in a 12 month period, and 23.2% of the total population are expected to be at risk of mental illness or may require a level of early intervention to prevent progression within a 12-month period. Estimated demand for NBM regional mental health services by age group and severity level illustrates that overall, there are similar numbers of people in the NBM population who require early intervention, mild, moderate and severe services within a 12-month period.

Individuals and populations at risk of poor health outcomes

There is a high prevalence of mental health needs and service demand among young people. Recent data indicates almost 1 in 4 (24.2%) of young people 15-19 years in Australia report experiencing psychological distress – this has persistently increased over the past seven years. Females are more than twice as likely as males to experience psychological distress. Aboriginal and Torres Strait Islander young people are also more likely to experience psychological distress than non-Indigenous young people.

Social determinants of health

The impact of homelessness remains significant, particularly in relation to people's physical and mental health; affecting their ability to adequately access suitable service provision, further compounding issues experienced.

Health status and behaviours

As experienced elsewhere there is a significant gap in life expectancy, reduced functional status and reduced quality of life among people with mental health conditions. This is due in part to a higher prevalence of co-existing chronic physical health conditions (in particular cardiovascular disease, cancer, diabetes, asthma, COPD, back problems and arthritis). The resultant higher prevalence of chronic disease risk factors (smoking, alcohol, physical activity, obesity and high cholesterol) among persons with mental health conditions further impacts the quality of life of people living with mental illness in the region.

The NBM region is currently experiencing the highest rates of mental health-related hospitalisations in New South Wales.

Populations with special needs

As is the experience across our needs assessment activity, the mental health needs of Aboriginal and Torres Strait Islander people are of particular concern. This population continues to experience a high proportion

of psychological distress, attributable to greater physical morbidity and disability. There is an increased prevalence of long-term mental health conditions among Aboriginal people with disproportionately high incidence of hospitalisation due to mental ill health.

There is similarly significant and disproportionate prevalence of people living with mental health issues across CALD and LGBTI populations.

Service Needs Analysis

Due to the challenging geography of the region, relative to the ability to fund adequate service provision across its breadth, some communities experience inadequate access to psychiatric services. In spite of the clear need within the community, psychological and psychiatric services are accessed by a relatively low proportion of Aboriginal people.

Coordination and integration

Service coordination, continuity and transfer of care are reoccurring themes. People moving to primary care and/or community service providers after discharge from acute mental health services are of particular concern. Challenges exist around effective care coordination, referral pathway coordination, case management and follow up between acute and primary mental health services, and between clinical and non-clinical services. For example, GPs report the need to consistently receive discharge information and follow-up referral for their patients following acute mental health inpatient stays. This impacts on the safe transfer of care and the follow on support for consumer-centred care and the seamless stepping up or down in the levels/type of care received.

The community describes a need for better connections for young people in and out of Home Care, Juvenile Justice, FACS, Health and NGOs, through sharing data, information and communication feedback loops so as to support integrated care with clinical in-reach.

Opportunities for improvement

Service providers need to ensure as a priority, that all people with severe, persistent and complex mental illness are connected to a regular GP.

There appears to be relatively high rates of antipsychotic medicines dispensing compared to NSW state averages across almost all NBM smaller areas SA3 locations across all age-groups.

Collaboration, communication and an agreed functional framework for responsible providers / commissioners is required enable consumers and carers to have a clear understanding of pathways and related service information. This will enable greater understanding and visibility of service provision across the treatment 'system', and help to reduce barriers to access.

A significant volume of work needs to be done to increase the provision of, and active participation in, culturally safe mental health services for Aboriginal people. This must be done collectively, and in collaboration with the community it intends to service. Developing the cultural competence of mainstream mental health services is recommended as a good starting point from which to improve and promoting positive mental health among Aboriginal people.

Psychosocial support for people with severe mental illness

Many of the trends described in the mental health and suicide prevention analysis were confirmed on conducting the needs assessment in relation to the National Psychosocial Support Measure (NPS).

National Psychosocial Support (NPS) measure

Health Needs Analysis

Individuals and populations at risk of poor health outcomes

The social and/or geographic isolation of particular groups remains a major factor in the exclusion of NBM consumers from community participation and results in poorer outcomes for people with regard to their mental health. Groups of specific concern include:

- *Aboriginal and Torres Strait Islander Communities:* There remains a lack of dedicated Aboriginal mental health clinicians and targeted psychosocial programs for Aboriginal and Torres Strait Islander Communities. This impacts negatively on engagement with regional mental health services and positive outcomes for the communities involved.
- *CALD Communities:* There is an identified need for different avenues from which to promote access to mental health services, psychosocial groups and appropriate referral pathways in the NBM region across CALD community groups.
- *Homeless Populations:* People with housing instability experience difficulties with NDIS applications, making this group likely to be eligible for the National Psychosocial Support Measure. The High prevalence of mental illness and comorbid physical health conditions among homeless people, alongside poor engagement with mainstream services are compounded by a lack of coordination between homelessness and mental health services in the NBM region. As a result this cohort has been found to have increasingly poor outcomes. There is also a limited capacity amongst the homeless sector services to respond to client mental health needs due to lack of mental health first aid training.

Health status and behaviours

Communities describe poor mental health literacy, poor knowledge of local psychosocial services available, and a lack of education on how to navigate mental health service systems across NBMPHN. There is a high prevalence of co-morbid mental health, AOD and physical health conditions amongst this NPS eligible cohort.

Service Needs Analysis

The current National Psychosocial Support (NPS) service model is impacted significantly by limited funding available. Current service capacity is limited to 46 participants for the entire NBM region and there are currently 19 persons on a waiting list to access NPS. A further 9,721 individuals in the NBM region are estimated to have **severe/not complex** disorders, and are the intended target population for the National Psychosocial Support Measure. The current 6 month program time is identified as insufficient, with NPS providers and participants reporting 'up to two years' as the suitable timeframe for support.

Coordination and integration

There are significant opportunities for system reform to assist health professionals and consumers to identify appropriate psychosocial referral options. For example the simplification of referral criteria and the creation of a central triage point with system expertise and reach could dramatically reduce barriers to access. There is a clear and identified need to create consumer-oriented pathways to accessing services, such as a soft entry hub model / drop in centre.

Opportunities for improvement

The Identified need for mental health awareness training among local employers and volunteer organisations in the NBM region is an initiative that can have a wide impact with relatively little resource. This activity could be supported by the adequate resourcing of peer support initiatives. Historically there has been a lack of strategic investment in peer work from statutory organisations and community managed organisations in the region. The benefits of investment in this model are exponential in terms of service user outcomes and community education/stigma and capacity building.

Further opportunities for improvement include:

- Sustained investment in Aboriginal staff in both clinical settings and psychosocial services is needed to improve outcomes.
- Mental health support services - Improve resourcing of and/or development of strategies to improve demand management for psychosocial programs.

- Access to GP care - identified need to improve consumer access to GP clinical care, in particular for those who may be in mental health crisis, such as bulk-billing, flexibility for walk-in appointments, and/or increased options for after-hours services.
- Mental health capacity building and education - Identified need for basic mental health training for mainstream services, including Centrelink, Housing, Police, employers and community organisations.
- Creating volunteering opportunities in the NBM region would significantly benefit people with a lived experience of mental health to increase social and economic benefits, life skills and connection to community.

Continuity of Support

Health Needs Analysis

Continuity of Support (CoS) participants have similar if not identical needs as the National Psychosocial Support measure (NPS) cohort. The only separation of this collective group of individuals with similar needs, is the stipulated program entry and service model requirements. CoS participants and support workers report the need for more individualised support. Current service delivery model guidelines aim to include socially-based, capacity building group activities, with additional targeted support at times of increased need. This compares to participants reporting one-on-one support as their primary need for service delivery. Provision of flexible funding for ad hoc support integral to stabilizing a client during periods of exacerbation is also identified.

Between July 2016 and June 2019, 54 CoS participants with severe and complex mental health issues submitted a NDIS Access Requests and were found to be ineligible. Later changes with the application process and changes due to personal circumstance mean that the current CoS participants are encouraged to reapply. However, the majority do not wish to reapply due to fear of the application process, the need to deal with more urgent priorities and mistrust in the system. There are therefore likely to be existing CoS participants with severe and complex mental illness that require higher levels of support which are currently unmet.

Other challenges include limitations in the CoS service model to assist with the preparation of NDIS Access Requests, long and unpredictable NDIS Access Request wait times and delays in the review process for NDIS applications.

Service Needs Analysis

While providers of CoS in the NBM region have successfully established rapport with the CoS participants, a number of operational challenges exist due to service model requirements of CoS. The program provides less funding per head than the previous PIR, D2DL and PHaMs programs and has a fluctuating caseload due to the nature of entry into the program. The reporting requirements via the MDS portal has created an administrative burden to the provider organisations.

3. Alcohol and Other Drugs

The geography, demography and economy of the NBM region, as described within the general population section, applies to all components of the Alcohol and Other Drugs treatment needs section.

AOD needs assessment has been supported over the last four years by a significant number of stakeholder consultations with individual consumers, groups and service providers in combination with available national data, limited local data and commissioned service provider data.

Alcohol use was the highest reason for seeking treatment among persons attending NBM NGOs providing publicly funded treatment services for substance use in 2017-18 (35.7% of NBM clients who received treatment for their own drug use - compared to 33.8% nationally). **Amphetamines** represented the second

highest reason for seeking treatment among persons attending NBM NGOs providing publicly funded treatment services in 2017-18 (25.2% of NBM clients who received treatment for their own drug use). This is in contrast to local commissioned service providers continue to report increasing use and frequency of use of crystalline methamphetamine (ice) among their NBM clients. In some data collection periods for complex clients with dual diagnosis, **ice** use has been reported as the primary drug of concern for most clients.

Pharmaceuticals were the second most frequently misused illicit drugs in 2016, with 28% using daily or weekly with pain-killers/analgesics and opioids (3.6%) the class of pharmaceuticals most commonly misused.

The needs of men in the Lithgow LGA, where social disadvantage is high to publicly funded rehabilitation services are limited. NBMPHNs commissioned services have recently improved access for men to an existing outreach day rehabilitation which now supports a mixed gender service.

A high prevalence of problem substance use is reported among **young people** in the NBM region who are also consistently reported to be under-served, have high needs in relation to AOD services and are increasingly presenting with greater complexity to local AOD services. Recently commissioned services together with NBMLHD Drug and Alcohol expansion of existing youth services, continues to reveal substantial unmet need.

Integration and service planning amongst services across sectors is an area that will need to be further strengthened. Previous co-design has demonstrated enhanced service models for early intervention, rehabilitation and aftercare access for people at risk and dependent on substances overall in the NBM region.

Culturally safe services for Aboriginal people continues to be a high priority in the NBM population. Significant steps towards improved services for Aboriginal people have been made with commissioning of programs and new service initiatives however unmet need remains high.

Supporting general practice to increase **primary care involvement** in AOD treatment remains a priority. An in-depth consultation process conducted with NBM GPs and pharmacists identified barriers to providing AOD treatment including: challenges with patient engagement, availability of local support services for patients, awareness of and access to pathways in and out of specialised treatment, and limited access to specialist support or guidance for GPs. The need for improved access to information, resources and training, and timely specialist and peer support was also identified. Supporting GPs to access AOD education strategies funded by federal and state governments is also a priority.

4. Indigenous Health (including Indigenous chronic disease)

Approximately 13,955 people in the NBM population identified as Aboriginal and Torres Strait Islander in the 2016 Census, comprising 3.7% of the total population. This was an increase of 43% in the estimated indigenous population in the NBM region compared to the 2011 Census.

Health and Service needs

Factors impacting health and health service utilisation by Aboriginal people include **greater socio-economic disadvantage** compared to the total population, and **higher rates of chronic and preventable disease** in particular respiratory diseases, circulatory diseases, diabetes, chronic kidney disease and cancer. Aboriginal persons in NSW continue to have a higher prevalence of behavioural risk-factors for chronic conditions compared to non-Indigenous persons, including smoking, inadequate fruit intake, alcohol consumption at risky levels, insufficient physical activity, and overweight and obesity. NBM Aboriginal people experience double the rate of PPHs due to chronic conditions compared to non-Aboriginal people. Leading PPHs among Aboriginal people in NSW include COPD, diabetes complications and congestive heart failure.

Recent immunisation data to March 2019 indicates that while immunisation rates for Aboriginal children aged 1 and 5 years in the NBM region are increasing and at higher than NSW state average rates, coverage for NBM Aboriginal children aged 2 years have fluctuated over the previous 5-years and are the lowest in NSW.

Recent data on the use of the **Indigenous health check** performed by a general practitioner (MBS item 715) indicates relatively poor uptake of this item amongst primary care providers in the NBM region compared to Australian and NSW state averages. This results in a higher proportion of NBM Aboriginal and Torres Strait Islander people missing out on regular health assessments and treatment for chronic conditions. This may be an indication of relatively lower capacity among NBM general practices to deliver and improve access to culturally appropriate primary healthcare services &/or to improve access for Aboriginal people to mainstream primary healthcare services.

New data covering the proportion (12.0%) of NBM Aboriginal people who received an Indigenous-specific **follow-up services** provided by a practice nurse, registered Aboriginal Health Worker or allied health professionals within 12 months of a health check highlights NBM being the lowest among PHN regions in NSW, and the second lowest among PHNs in Australia. This may be an indicator of practitioners' lack of awareness of the available item numbers, resourcing issues, ineffective use of clinical information systems (for patient recall and reminders) and utilisation of correct Indigenous-specific MBS items, communication and transport challenges for patients, and cultural barriers.

NBM Aboriginal people broadly reported **social and cultural determinants of health**, and lack of culturally appropriate access to health care. The segmentation of mainstream health services does not align with traditional concepts of Aboriginal wellbeing being which inextricably link mind, body and spirit as one. Geographical boundaries dividing health services often do not align with 'Aboriginal Country' boundaries, impacting the ability of service providers to support families and communities across boundaries. The important role of culture, and value of relational approaches as a foundation to healing is not often recognised or integrated into mainstream systems of care.

Additional Data Needs and Gaps

There are a range of data sources and analysis tools that have recently become available to the NBMPHN that require further investigation/utilisation. Future analysis as part of ongoing needs assessment will consider the following:

- Potentially Preventable Hospitalisations including a review of current local hospital discharge data to better understand both the impact and opportunities for primary care support in the community.
- ED data from private hospitals in our region is not yet available but consultations continue to progress access to these data sets.
- Current after-hours granular data relating to emergency department presentations will support more detailed investigation around gaps in after-hours primary care service provision across the region.
- MBS item utilisation data analysis will further consider the correlation with general practice chronic conditions management and PIP QI services.
- Further detailed service mapping will assist in directing regional planning for Mental Health, Drug and Alcohol and Aboriginal health services. This could include regional geo-spatial illustration of key indicators relevant to demand for services and socioeconomic and behavioural factors.
- General practice, de-identified, aggregated clinical data e.g. diabetes, asthma, cervical screening, COPD, is currently incorporated into some aspects of the needs assessment. Further analysis, integrated with local population health data, will more fully support assessment of local needs with primary care service provision, both individually at a practice level, and collectively across the region's population. This may also include linked de-identified data through joint activity between the NSW Ministry of Health and the participating NBMPHN general practices as the system matures.

- Utilisation of data visualisation tools such as Qlik Sense will support greater visual interpretation of the needs.

Service data

The service component of the needs assessment identifies the absence of certain services or inappropriate service models of care. Typically this arises when the region does not have sufficient capacity (workforce, funding, points of service) or capability (appropriate skills) to deliver these services. The response to identify such needs is generally through further investigations of options and contextual statistics that may either modify existing models of care, or identify new service providers to fill in gaps for services. Both directions demand substantial capacity building efforts from PHNs, and are difficult to measure outcomes rather than outputs, in the short to medium term.

Similarly, NBMPHN regularly surveys general practices and pharmacies to collect workforce data however these surveys are limited to organisations, not individuals, and do not thoroughly indicate FTEs for any workforce category. National sources of data such as APHRA have limited application for regional planning purposes. Apart from General Practitioners and Practice Nurses working in General Practice, it is not currently possible to establish health workforce levels for primary healthcare professionals per LGA or for the region. This prevents the analysis of trends and development of strategies for support in all areas including: Aboriginal Health, Mental Health and Suicide Prevention, Drug and Alcohol Services, chronic conditions, older adults, care coordination, workforce needs applying to general practice, nurse practitioners, and allied health professionals.

Primary care workforce data for NSW and the NBM region, which is currently not maintained by a central authority. Although the National Health Services Directory (NHSD) maintains a repository of health organisations (not individuals) across all four NBM LGAs, it is not comprehensive enough to support a gap analysis and is reliant on NBMPHN and self-reporting to maintain currency.

Obtaining up-to-date regional workforce data through the Department of Health's online data tabulation tool is problematic. Data is currently only available for the NBM region for 2013-2017. Headcount of GPs is also not an effective measure because a significant number of GPs work part time. Full Time Equivalency or Full Service Equivalency is a better measure, however PHNs don't have access to this data. It is envisaged that access to the new Health Demand and Supply Utilisation Patterns Planning (HeaDS UPP) Tool in 2020 will provide an integrated source of health workforce and services data to help inform local workforce planning and analysis.

AOD data continues to be a significant ongoing concern, particularly the inability to analyse local service data other than high level AODTS-NMDS. As a consequence NBMPHN continues to rely heavily on qualitative feedback from stakeholder consultations to inform needs analysis. Similar problems exist with mental health data.

Additional comments or feedback

Six separate components that make up the needs assessment i.e. General population, Mental Health and Suicide prevention, National Psychosocial Services (NPS), Continuity of Support (CoS), Alcohol and other Drugs (AOD) and Indigenous Health (including Indigenous chronic disease), were amalgamated and updated into one document for the 2019 needs assessment.

The availability of additional resources on the Department of Health PHN website will support future needs assessment and may include more current data sets that can be drilled down to regional and postcode level. For example, analysis of Australian refined diagnosis-related groups (AR-DRG) at the regional level would facilitate targeting of primary care services in relation to headline indicators such as potentially preventable hospitalisations.

The now extended interval between the submissions of needs assessments of greater than 12 months will be most useful to support an assessment of the outcomes of the subsequent commissioning activities that arise from the planning priorities. This will also allow for more timely consultation with key stakeholders and capture of lag data.

Future needs assessments will be easier to develop using an independent, localised format. Difficulties encountered in the use of the current template for reporting of this needs assessment relate primarily to formatting; tables are difficult to populate with graphical representations of data, there is no summary tool, contents index, table of descriptions, abbreviation or reference sections. Additionally the readability and ready access to information within the lengthy report can be difficult.

Section Four, *Opportunities linked to service planning* may also be premature to include as these require extensive consultation and collaborative service planning.

We note that this report is placed on the Department of Health PHN website for general public access and suggest that publication of the needs assessment in this format is not conducive to easy reading and communicating outcomes. The document as it stands, continues to require transcribing into a more user-friendly format for improved communication to the community and health professionals about our region's needs.

Section 2 – Outcomes of the health needs analysis

This section summarises the findings of the health needs analysis in the table below.

General Population Health

General population health needs analysis is encompassed within six key theme areas of:

- Theme 1 - ACCESS TO HEALTH SERVICES is addressed fully within Section 3 – Outcomes of service needs analysis
- Theme 2 - CANCER SCREENING AND PREVENTION
- Theme 3 - CHRONIC AND PREVENTABLE CONDITIONS
- Theme 4 - CULTURAL AND DEMOGRAPHIC FACTORS INFLUENCING HEALTH STATUS
- Theme 5 - END of LIFE CAE
- Theme 6 - OLDER PERSONS

CANCER SCREENING AND PREVENTION

Outcomes of the health needs analysis – General Population Health		
Identified Need	Key Issue	Description of Evidence
Cancer screening and prevention	Tobacco smoking – indicators of poorer performance in NBM compared to NSW	<p>Tobacco use was the leading risk factor which contributed to 9.3% of the total burden of disease and injury in 2015 [1]. This includes the risks associated with exposure to tobacco use and to second-hand smoke. Tobacco is the leading cause of cancer in Australia (contributing 22% of the cancer burden). Further it is estimated that tobacco was responsible for 41% of the burden of respiratory diseases, 11.5% of cardiovascular diseases, and 6.8% of infections.</p> <p>The NSW Cancer Institute 2018 performance snapshot for the NBM region lists the following indicators [2]:</p> <ul style="list-style-type: none"> • 15.2% smoking prevalence in adults, 2017 (equal to NSW state average) • 12.1% proportion of women who smoked during pregnancy, 2016 (higher than NSW state average, 8.3%) • 11.0% prevalence of smoking in pregnancy for non-Aboriginal women, 2016 (higher than NSW state average, 6.9%) • 0.52% proportion of smokers who called NSW Quitline, 2017 (lower than NSW state average, 0.77%) • 0.1% proportion of smokers who were referred to NSW Qutline, 2017 (lower than NSW state average, 0.31%) <p>Smoking attributable hospitalisations:</p>

Outcomes of the health needs analysis – General Population Health

		<p>In NBM, 2,381 hospitalisations were attributed to smoking, at a rate of 572.2 per 100,000 persons just below the NSW average (653.9 per 100,000 persons) [3].</p> <p>Table 1: Smoking attributable hospitalisations, number and age standardised rate per 100,000 population, 2017-18</p> <table border="1"> <thead> <tr> <th></th> <th>Gender</th> <th>Number</th> <th>Rate per 100,000</th> </tr> </thead> <tbody> <tr> <td rowspan="3">NBMPHN</td> <td>Male</td> <td>1,323</td> <td>668.4</td> </tr> <tr> <td>Female</td> <td>1,058</td> <td>489.0</td> </tr> <tr> <td>Total</td> <td>2,381</td> <td>572.2</td> </tr> <tr> <td rowspan="3">NSW</td> <td>Male</td> <td>34,458</td> <td>785.9</td> </tr> <tr> <td>Female</td> <td>25,791</td> <td>536.3</td> </tr> <tr> <td>Total</td> <td>60,249</td> <td>653.9</td> </tr> </tbody> </table> <p>Smoking attributable deaths: The smoking attributable death rate was overall slightly higher in NBM than in NSW in 2016 (77.4 and 71.4 per 100,000 population respectively). In NBM, Lithgow and Penrith LGAs had significantly higher smoking attributable death rates than the NSW rate (79.8 and 83.2 per 100,000 population compared to 71.1 respectively) [4].</p> <p>Regional priorities for tobacco control are:</p> <ul style="list-style-type: none"> • Engaging primary healthcare professionals to provide brief, simple advice about quitting smoking and encourage referrals to NSW Quitline. • Accessing opportunities for brief interventions to support smoking cessation • Identifying teachable ‘moments’ for pregnant women or women planning to get pregnant who smoke with a priority on interventions involving Aboriginal women. 		Gender	Number	Rate per 100,000	NBMPHN	Male	1,323	668.4	Female	1,058	489.0	Total	2,381	572.2	NSW	Male	34,458	785.9	Female	25,791	536.3	Total	60,249	653.9
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<p>Cancer Screening Participation</p>	<p>Lower cancer screening participation in NBM compared to NSW for bowel, breast and cervical cancer.</p> <p>NBM bowel screening participation rate (38.8%) lower than the NSW state average (39.5%).</p>	<p>Bowel Cancer Despite increasing from 36.6% to 38.8% from 2016 to 2018, bowel cancer screening participation in NBM remained lower than for NSW, which was 39.5% in 2018 [2]. Within the NBM region, Penrith and Hawkesbury LGAs continue to have the lowest bowel screening participation rates. In 2018, bowel screening rates were 36.4% for Penrith LGA and 38.5% for Hawkesbury LGA. Among smaller NBM geographical areas, St Marys (30.8%) then Richmond-Windsor (33.3%) SA3 areas had the lowest bowel screening participation rates in 2015-16 [5].</p> <p>Breast Cancer Breast screening participation rates among age-eligible women 50-74 years has been increasing steadily over the past few years in line with NSW rates [2]. NBMPHN region’s latest results show an increase in breast screening rates from 48.9% in</p>																								

Outcomes of the health needs analysis – General Population Health

	<p>NBM breast screening participation rate (49.0%) lower than the NSW state average (52.8%).</p> <p>Declining NBM cervical screening participation rate (52.1%), lower than the NSW average (55.9%).</p>	<p>2015-16 to 49.0% in 2017-18, however these remained lower than for NSW (52.8% in 2017-18). Lithgow and Penrith LGAs continue to have the lowest breast screening participation rates in the NBM region. In 2017-18, breast screening rates were 45.7% for Lithgow and 48.2% for Penrith. Among smaller NBM geographical areas, St Marys (46.6%) then Penrith SA3 (48.8%) areas had the lowest breast screening participation rates in 2015-16 [5].</p> <p>The breast screening participation rate for Aboriginal women in the NBM region has progressively increased from 31.0% in 2015-16 to 32.5% in 2017-18, however remains well below the state average at 44.1% in 2017-18 [2]. The rates across LGAs varies with Hawkesbury reporting the lowest at 26.1%, followed by Lithgow LGA at 30.9%.</p> <p>Breast screening participation rate for CALD women in the NBM region has recently declined, from 42.2% in 2015-16 to 40.6% in 2017-18. Breast screening rates for NBM CALD women remain below the state average at 40.6% in 2016-17. Breast screening rates for NBM CALD women across LGAs varies with Blue Mountains reporting the lowest at 32.4%, followed by Penrith at 40.8%</p> <p>The proportion of age-eligible women in the NBM region who have never attended a Breast Screen remains higher than the NSW state average (22.7% vs. 19.9% in 2018).</p> <p>Cervical Cancer</p> <p>Cervical screening rates declined among NBM among age-eligible women 20-69 years from 53.4% in 2013-15 FY to 52.1% in 2015-17 FY, with rates below the NSW state average (55.9% in 2015-17) [2]. Cervical screening participation declined in all NBM LGAs from 2013-15 FY to 2015-17 FY.</p> <p>Penrith and Lithgow LGAs continue to have the lowest cervical screening participation rates in the NBM region. In 2015-17 FY, cervical screening rates were 48.1% for Penrith LGA and 50.8% for Lithgow LGA. Among smaller NBM geographical areas, St Marys (44.5%) then Penrith (49.7%) SA3 areas had the lowest cervical screening participation rates in 2015-16 [5].</p> <p>No data is currently available to indicate participation rates in the new National Cervical Screening Program (CSP), which tests for the presence of the HPV virus, or to show variations in cervical screening participation among CALD or Aboriginal women.</p>
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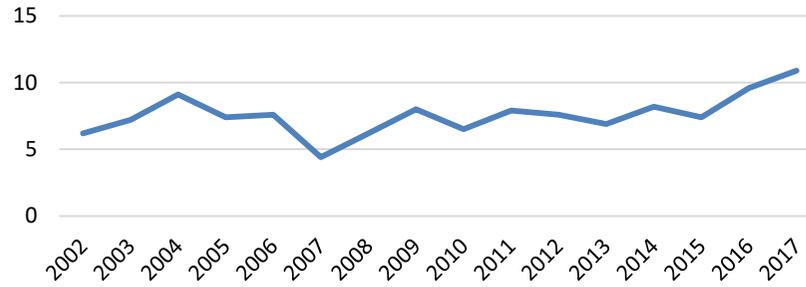
CHRONIC AND PREVENTABLE CONDITIONS

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: <i>Chronic and Preventable Conditions</i>		
Identified Need	Key Issue	Description of Evidence
Cancer incidence	<p>The long-term incidence rate for all cancers for males and females in the NBM region is steadily increasing.</p> <p>Prostate cancer, breast cancer and melanoma of the skin were the top three types of new cancer cases in the NBM population (2010-2014).</p>	<p>The long-term incidence rate for all cancers in NBM for males and females however is steadily increasing [6]. The most common cancer types for new cancer cases (incidence) in the NBM region from 2010-2014, in order and by cancer type/site were: prostate (1,520 new cases), breast (1,166 new cases), melanoma of the skin (851 new cases), lung (781 new cases), and colon (692 new cases).</p> <p>Between 2009-2013, smaller areas in the NBM region which had a higher incidence rate compared to the national average for specific cancers were [7]:</p> <ul style="list-style-type: none"> • Blue Mountains SA3 – breast cancer (1.1 times higher than national average) • Richmond-Windsor SA3 – breast cancer (1.1 times higher), colorectal cancer (1.07 times higher), melanoma (1.21 times higher), prostate cancer (1.03 times higher) • Hawkesbury SA3 – colorectal cancer (1.1 times higher), melanoma (1.19 times higher), prostate cancer (1.17 times higher) • Lithgow-Mudgee SA3 – colorectal cancer (1.18 times higher), lung cancer (1.19 times higher), prostate cancer (1.05 times higher) • St Marys SA3 – colorectal cancer (1.12 times higher), lung cancer (1.45 times higher) • Penrith SA3 – colorectal cancer (1.07 times higher), lung cancer (1.16 times higher).
Cardiovascular Disease (CVD)		
CVD disease burden	<p>Circulatory disease was the leading cause of death in NBM females and the second leading cause of death in NBM males in 2016.</p> <p>Higher rate of deaths attributable to circulatory</p>	<p>In 2015, cardiovascular diseases accounted for 14% of the total disease burden in Australia. This was second only to the disease burden for cancer [2].</p> <p>In 2017, circulatory disease was the leading cause of death in females (130.8 per 100,000) in the NBM region and was the second leading cause of death in males (191.1 per 100,00) [8]. In 2017, there were 636 deaths due to circulatory disease at a rate of 158.9 per 100,000 persons. This was significantly higher than for NSW (134.4 deaths per 100,000 persons). Hospitalisations due to circulatory disease are lower in the NBM region compared to NSW. There were 6,416 hospitalisations due to circulatory disease in the NBM region in 2016-17, at a rate of 1,540 per 100,000 persons [9]. This was lower than the NSW state average at 1,766 per 100,000 persons.</p>

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

	disease in NBM compared to NSW in 2016	<p>Behavioural risk factors for CVD including tobacco smoking, physical inactivity, poor diet, and risky alcohol consumption – lead to the physiological risk factors in cardiovascular disease. These are high blood pressure, elevated blood lipids, diabetes mellitus, and overweight or obesity.</p> <p>Psychological and social risk factors additionally contribute to the risk of developing coronary heart disease as well as the worsening of clinical course and prognosis. These factors include: low socio-economic status; lack of social support; stress at work and family life; depression or anxiety; and hostility. These factors may act as barriers to treatment adherence and efforts to improve lifestyle in patients and populations.</p>
Chronic Kidney Disease (CKD)		
Chronic kidney disease (CKD) prevalence	Lowest prevalence of CKD in the NBM region among 10 NSW PHN regions.	PHN-level data indicates the prevalence of CKD among NBM adults was 9.2% in 2011-12, with prevalence rising dramatically with age (NBM CKD prevalence was 12.7% among adults 55-74 years and 42.1% among persons 75+ years). This was the lowest population prevalence among 10 PHN regions in NSW. The NSW CKD prevalence rate was 10.6% [10].
CKD Disease Burden	Lower rate of hospitalisations and deaths due to or associated with CKD in NBM compared with Australia and NSW.	There were 3,254 hospitalisations in the NBM region in 2014-15 that had a principal or associated diagnosis of CKD, at an age-standardised rate 0.72 and 0.80 lower than for CKD hospitalisations in Australia and NSW respectively [10]. Hospitalisations in the NBM region that had a principal diagnosis of dialysis were 0.66 and 0.78 times lower than for Australia and NSW respectively. There were 183 deaths in the NBM region in 2011-15, where CKD was the underlying or an associated cause, at an age-standardised rate 0.92 times lower than in Australia for the same time period.
Diabetes		
Diabetes prevalence	Trend of increasing prevalence of diabetes in the NBM region with higher rates compared to the NSW average.	<p>The estimated prevalence of diabetes among persons aged 16 years and over increased in the NBM region from 7.6% in 2012 to 10.9% in 2017, and was higher than the NSW average (10.1% in 2017) [11]. The estimated prevalence of diabetes in NSW also increased during this timeframe from 8.4% in 2012 to 10.1% in 2017.</p> <p>Figure 1: Diabetes or high blood glucose prevalence (%), Nepean Blue Mountains PHN, NSW 2002 to 2017</p>

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*



It is likely the true population prevalence of diabetes in the NBM region is higher than the above estimates obtained via self-reported data from the NSW population health survey. The reason is that self-reported data is likely to underestimate diabetes prevalence. Analysis of measured diabetes data from 2011-12 has shown that for every 4 adults with diagnosed diabetes, there is 1 with undiagnosed diabetes.

The prevalence of diabetes in Lithgow and Penrith local government areas (LGAs) is higher than the state average.

National Diabetes Services Scheme (NDSS) is a voluntary scheme that people with medical practitioner or nurse diagnosed diabetes can enroll in. In 2019, 5.7% of NBMPHN population (5.3% for NSW) were registered with the NDSS, with the great majority diagnosed with Type 2 Diabetes (87.1%). Lithgow and Penrith LGA's have the largest proportion of people registered with NDSS (6.6% and 6.4% respectively compared with 5.3% for NSW).

Table 2: Proportion of NDSS registrations for the NBM and NSW population by type of diabetes, 2019 [12]

Diabetes Type	NBM (%)	NSW (%)
Type 1	10.4	9.7
Type 2	86.3	86.3
Gestational	2.6	3.3
Other	0.7	0.7

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

<p>Hospitalisations for diabetes</p>	<p>Hospitalisation rates for diabetes as a principal diagnosis higher than NSW average for Penrith and Lithgow LGAs.</p> <p>Highest rate of PPH for diabetes complications in NBM region in St Marys, with higher rates compared to the state average.</p>	<p>In 2016-18, hospitalisation rates for diabetes recorded as a principal diagnosis were significantly higher in Lithgow and Penrith LGAs compared with NSW.</p> <p>Table 3: Diabetes as a principal diagnosis: hospitalisations (rate) for NBM residents by LGA vs. NSW, 2016-18 [13]</p> <table border="1" data-bbox="790 391 1357 630"> <thead> <tr> <th>LGA (and NSW)</th> <th>Rate per 100,000 population</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>104.9</td> </tr> <tr> <td>Hawkesbury</td> <td>134.1</td> </tr> <tr> <td>Lithgow</td> <td>167.0</td> </tr> <tr> <td>Penrith</td> <td>174.8</td> </tr> <tr> <td>NSW</td> <td>143.1</td> </tr> </tbody> </table> <p>In 2016-17, the age-standardised rate of potentially preventable hospitalisations (PPH) for diabetes complications within NBM was highest in the St Marys SA3 and the only SA3 area higher than the national rate (216 vs. 180 per 100,000 persons) [14].</p>	LGA (and NSW)	Rate per 100,000 population	Blue Mountains	104.9	Hawkesbury	134.1	Lithgow	167.0	Penrith	174.8	NSW	143.1
LGA (and NSW)	Rate per 100,000 population													
Blue Mountains	104.9													
Hawkesbury	134.1													
Lithgow	167.0													
Penrith	174.8													
NSW	143.1													
<p>General practice systems</p>	<p>Primary care reporting of diabetes for the NBM region is likely to be significantly underreported due to data quality issues.</p>	<p>Assessment of diabetes registers for 66 general practices within the region that are participating in data quality improvement activities indicate that approximately 1.86% of patients with diabetes are not accounted for in participating practice diabetes registers [15]. Analysis of PEN Clinical Audit Tool de-identified data extracted from General Practices participating in data quality improvement (N=66 or 47% of all computerised general practices) indicates that the diabetes registers included 6.5% of all patients identified in the practice populations as diagnosed with diabetes. An additional 1.86% of patients within practice clinical software were indicated as having diabetes, due to the types of medications those patients were receiving but not appropriately coded and therefore not captured on their diabetes register. Of the 1.86% of patients, 61.3% were likely to have diabetes while a further 38.7% were possibly diabetic.</p>												
<p>Disability</p>														
<p>People living with a disability</p>	<p>High proportion of people living with a disability in the Lithgow LGA compared to NSW.</p>	<p>People living with a disability report higher levels of poor or fair health, mental health problems and long-term physical health conditions such as back problems, arthritis, cardiovascular diseases and asthma. They are also more likely to have thought about suicide. People with an intellectual disability are more likely than general population to be under-diagnosed or under treated. They also face significant financial and physical barriers to accessing health services as well as discrimination [17].</p> <p>In 2016, 18,813 persons or 5.2% of the NBM population reported needing help in their day-to-day activities due to a severe or profound disability [18]. This was similar to the NSW average of 5.4%, and was an increase of 4,080 persons compared with</p>												

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

2011. Almost half of the people living with disability in NBM were aged 65 years and over. Within NBM, Lithgow (6.6%) and Blue Mountains (5.5%) had the highest proportion of people with disability.

Figure 2: Number of NBM residents with severe or profound disability by age group, 2016 [18]

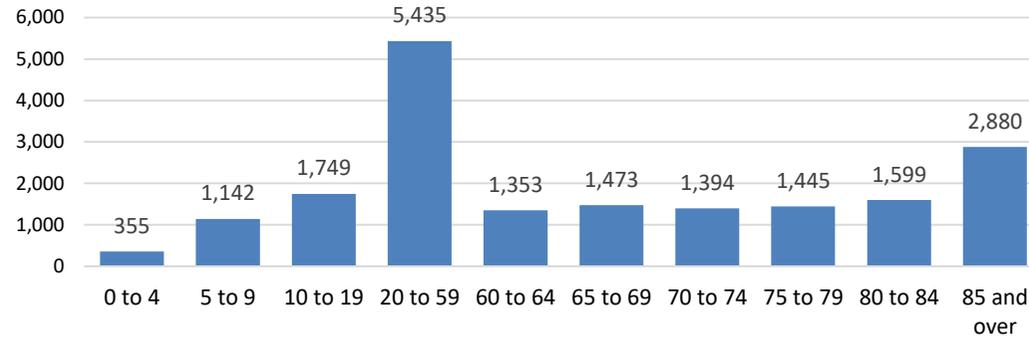
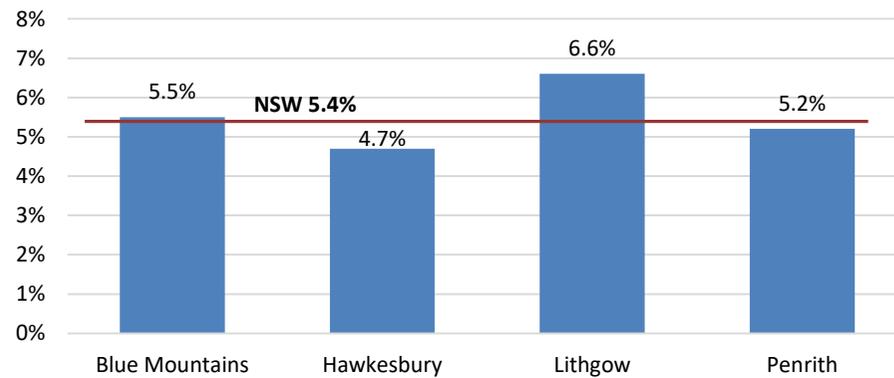


Figure 3: Proportion of Nepean Blue Mountains residents with severe or profound disability by LGA and NSW, 2016 [18]



Immunisation

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

Childhood immunisation

Low immunisation coverage for children aged two years in NBM, in particular for Aboriginal children

Childhood immunisation rates for the NBM region in 2018-19 are in general similar to or above the average for other NSW PHN regions for all children and for Aboriginal and Torres Strait Islander children at 1 and 5 years of age [19]. However, the coverage for children 24-<27 months is lower than for other NSW PHN regions, in particular for Aboriginal children.

Table 4: Childhood immunisation coverage (%) in NBM and rank among NSW PHNs, March 2019 annualised data – all children and Aboriginal and Torres Strait Islander children

		12->15 months	24-<27 months	60-<63 months
All children	NBM PHN	94.9%	90.7%	96.1%
	Rank among NSW PHNs	5/10	6/10	4/10
Aboriginal and Torres Strait Islander children	NBM PHN	95.4%	88.8%	98.7%
	Rank among NSW PHNs	1/10	10/10	1/10

Lowest immunisation rates in the NBM region observed in the Blue Mountains LGA.

Blue Mountains LGA has consistently under performed in childhood immunization rates compared to the other LGAs, across all age groups [19].

Table 5: Childhood immunisation coverage (%) within NBM by SA3, March 2019 annualised data – all children

	1 year	2 years	5 years
Blue Mountains	92.5%	89.7%	94.4%
Hawkesbury	93.3%	93.6%	96.3%
Richmond-Windsor	94.5%	91.0%	94.8%
Lithgow-Mudgee	95.6%	95.3%	97.3%
Penrith	94.8%	91.9%	97.2%
St Marys	95.1%	88.6%	96.4%

Influenza And Pneumonia

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

<p>Influenza And Pneumonia prevalence</p>	<p>Highest rate of hospitalisations due to influenza and pneumonia for 0-4 year olds among NSW PHN regions, and among NSW metropolitan PHN regions for persons of all ages.</p> <p>High rates of antimicrobial medicines dispensing within NBM compared to NSW state-averages, for most SA3 locations</p>	<p>In 2015-16, the rate of hospitalisations due to influenza and pneumonia in the NBM region for infants and children 0-4 years (741.8 per 100,000 persons) was the highest among 10 PHN regions in NSW [20]. For persons of all ages, hospitalisations due to influenza and pneumonia in the NBM region (366.2 per 100,000 persons) were the highest among metropolitan regions in NSW.</p> <p>Overall, Australia has very high overall rates of community antimicrobial use compared with some countries. It is suggested that many prescriptions for antimicrobials are unnecessary because antimicrobials are frequently used to treat infections for which they provide little or no benefit. High community use of antimicrobials increases the risk that bacteria will become resistant to these medicines and they will cease to be effective against serious life-threatening conditions.</p> <p>Analysis of repeat data in the Third Australian Atlas of Healthcare Variation (2019) identified high prescribing rates for many of SA3 locations within NBM for all antimicrobials, amoxicillin and amoxicillin-clavulanate [21].</p> <ul style="list-style-type: none"> • NBM locations with <i>higher rate</i> than NSW state-average for all antimicrobials per 100,000 persons (NSW, 118,787): St Marys (156,247), Penrith (146,645), Richmond-Windsor (145,501), and Hawkesbury (141,696). • NBM locations with <i>higher rate</i> than NSW state-average for Amoxicillin per 100,000 persons (NSW, 23,121): St Marys (33,564), Penrith (28,884), Richmond-Windsor (25,801), Rouse Hill – McGraths Hill (24,417), and Hawkesbury (24,008) • NBM locations with <i>higher rate</i> than NSW state-average for Amoxicillin-clavulanate per 100,000 persons (NSW, 20,362): St Marys (32,543), Penrith (28,885), Rouse Hill – McGraths Hill (27,078), Richmond-Windsor (26,422), Lithgow-Mudgee (25,454) and Hawkesbury (25,223)
<p>Overweight and obesity</p>		
<p>Overweight and obesity</p>	<p>High prevalence of overweight and obesity</p> <p>Higher levels of overweight and obesity (24.5%) among NBM secondary students compared NSW (20.6%).</p>	<p>Excess weight, especially obesity, is a risk factor for some cancers, circulatory disease, Type 2 diabetes, back pain, asthma, chronic kidney disease, dementia, gallbladder disease, gout and osteoarthritis. As the level of excess weight increases, so does the risk of developing these conditions [169]. In 2015, 8.4% of the total burden of disease and injury in Australia was due to overweight and obesity [1].</p> <p>In 2017, the prevalence of overweight and obesity among secondary school students aged 12-17 years in Western Sydney and Nepean Blue Mountains Local Health Districts (LHDs) was 24.5%. This was higher than the state average (20.6%) and the third highest in NSW [22].</p>

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

	<p>61.6% of adults in the NBM region were reported to be overweight (31.4%) or obese (32.6%) in 2018.</p> <p>Projected future increases in the prevalence of obesity and severe obesity in the NBM population</p> <p>8 out of 10 NBM adults have one or more risk factors for obesity</p>	<p>In 2018, 61.6 % of the NBM adult population were reported to be overweight or obese (32.3% overweight, 29.3% obese) [23]. This compares to a similar prevalence of overweight (32.9%) but a significantly higher rate of obesity (21.4%) compared with NSW. The rate of obesity in the NBM region in 2018 was the third highest among 10 NSW Primary Health Network regions. The prevalence of obesity and severe obesity in the NBM population is projected to increase [24]. If obesity rates remain steady, in the NBM population by 2036 will include:</p> <ul style="list-style-type: none"> • 8.4% of children aged 2-15 years are projected to be obese • 42.5% of persons aged 16 years and older are projected to be obese • 2.5% of boys and 3.7% of girls aged 2-15 years are projected to be severely obese • 17.5% of persons aged 16 years and older are projected to be severely obese <p>There is some regional variability obesity rates in NBM. In 2014-15, the rate of obesity was significantly higher in the Penrith (32.8), Hawkesbury (30.5) and Lithgow (38.2) compared to NSW (28.2). Males had higher proportions of overweight and obesity than females in every age group over 16 years for 2016.</p> <p>The prevalence of people with one or more risk factor for obesity is high in the NBM region [24]. In 2014-15, 8 out of 10 people aged 18 years and older had one or more risk factors for obesity. Both males (80.6 per 100 population) and females (82.8) had significantly higher rates compared with NSW. The highest rates of risk factors were in the Penrith and Lithgow LGAs. Of these, Penrith had a significantly higher proportion of the population who were physically inactive, and who had an increased waist circumference (females) compared to NSW.</p>
Potentially Preventable Hospitalisations (PPH)		
<p>Potentially Preventable Hospitalisations (PPH)</p>	<p>9,532 PPHs in NBM in 2018, with one quarter “same day” – admitted and discharged on the same day.</p> <p>Highest PPH rates in the NBM region in 2017-18 are due to acute dental conditions, COPD and</p>	<p>Potentially preventable hospitalisations (PPH) refer to admissions to hospital for a condition where the hospitalisation could have potentially been prevented through the provision of appropriate preventative health interventions and early disease management delivered in primary care and community-based care settings.</p> <p>In Australia, there are 22 conditions for which hospitalisation is considered potentially preventable across 3 broad categories: chronic, acute and vaccine-preventable conditions (grouped as pneumonia and influenza, and other vaccine-preventable conditions including: chicken pox (varicella), diphtheria, haemophilus meningitis, hepatitis B, German measles (rubella), measles, mumps, polio, rotavirus, tetanus, whooping cough (pertussis)).</p>

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

urinary tract infections including pyelonephritis.

Higher PPH rates in NBM compared to the NSW state average for the following -

Chronic conditions:

- COPD
- Congestive heart failure
- Asthma

Acute conditions:

- Dental conditions
- Urinary tract infections
- Cellulitis

Vaccine-preventable conditions:

- Pneumonia and influenza

Analysis of 2017-18 data indicates that overall, NBM region has relatively low rates of total PPHs (2,486 per 100,000 people) compared to other Australian PHNs (2,793 per 100,000 people) and similar rates compared to NSW (2,483 per 100,000 people) [15]. There were 9,532 PPHs in NBM in 2017-18, with almost one quarter (2,372 or 24.9%) “same-day” – admitted and discharged on the same day. The highest number of PPHs were due to acute dental conditions, COPD and urinary tract infections including pyelonephritis. PPH for chronic, acute and vaccine-preventable conditions in NBM which **exceeded** the NSW average rate are listed below.

Table 6: Potentially preventable hospitalisation rates for chronic, acute and vaccine-preventable conditions in NBMPHN which exceeded the NSW average, 2017-18

	Rate per 100,000 population		Total PPH bed days	Average length of stay (days)
	NBMPHN	All PHNs in NSW	NBMPHN	NBMPHN
Chronic conditions				
COPD	280	255	6,689	5.9
Congestive heart failure	192	188	5,526	7.5
Asthma	129	120	1,283	2.7
Acute conditions				
Dental conditions	305	248	1,582	1.4
Urinary tract infections, including pyelonephritis	259	242	3,760	3.8
Cellulitis	247	233	4,071	4.3
Vaccine-preventable conditions				
Pneumonia and influenza	243	240	7,456	7.9

The highest number of PPH presentations for the NBM region in 2017-18 were for:

- **All conditions:** Dental conditions (1,137 hospitalisations), COPD (1,126), Urinary tract infections including pyelonephritis (984), Cellulitis (941), Pneumonia and influenza (942).
- **Acute conditions:** Dental conditions (1,137 hospitalisations), Urinary tract infections including pyelonephritis (984), Cellulitis (941), Ear nose and throat infections (745), convulsions and epilepsy (490)
- **Chronic conditions:** COPD (1,126 hospitalisations), Congestive cardiac failure (738), Iron deficient anaemia (580), Diabetes complications (573), Asthma (478).

Outcomes of the health needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

		<p>The <i>greatest number of bed days</i> among PPH conditions for the NBM region in 2017-18 were for:</p> <ul style="list-style-type: none"> • All conditions: Pneumonia and influenza (7,456 bed days), COPD (6,689), Congestive cardiac failure (5,526), Diabetes complications (4,183), Cellulitis (4,071). • Acute conditions: Cellulitis (4,071 bed days), Urinary tract infections including pyelonephritis (3,760), Gangrene (1,736), Dental conditions (1,582), Convulsions and epilepsy (1,304) • Chronic conditions: COPD (6,689 bed days), Congestive cardiac failure (5,526), Diabetes complications (4,183), Asthma (1,283), Iron deficiency anaemia (1,162) <p>The <i>greatest number of same day PPH</i> for the NBM region in 2017-18 were for:</p> <ul style="list-style-type: none"> • All conditions: Dental conditions (891 same day PPH), Iron deficiency anaemia (415), Ear nose and throat infections (342), Urinary tract infections including pyelonephritis (155), Convulsions and epilepsy (95). • Acute conditions: Dental conditions (891 same day PPH), Ear nose and throat infections (342), Urinary tract infections including pyelonephritis (155), Convulsions and epilepsy (95), Cellulitis (54). • Chronic conditions: Iron deficiency anaemia (415 same day PPH), Angina (86), Asthma (64), Diabetes complications (62), COPD (36).
Respiratory disease		
Asthma prevalence	Higher prevalence of asthma compared to the NSW state average and highest prevalence among metropolitan health regions for both children and adults.	Asthma is a common chronic inflammatory disease of the airways and thought to be caused by a combination of genetic and environmental factors. Asthma is a significant health problem in Australia with one of the highest rates of prevalence in the world. For the 2-15 year old group in 2015-16, prevalence of current asthma in the NBM region (12.8% of the population age group) was the highest among the NSW metropolitan PHN regions and higher than the NSW state average (12.2%) [25]. For people 16 years and over, the prevalence of current asthma was 12.5% in 2017 and similarly highest among the NSW metropolitan PHN regions and higher than the NSW state average (10.9%) [26].
COPD prevalence	Some people with COPD in the NBM region may not be diagnosed or adequately managed for their condition in primary care.	National data indicates the prevalence of COPD is approximately 5.2% among adults aged 45 years and older, with prevalence rising with age [27]. Local data from 13 NBM general practices participating in a NBMPHN led COPD 'Collaborative' indicates of the total population of 34,689 patients; approximately 4.5% of patients aged 35 years and older had a coded diagnosis of COPD within the patient's electronic medical record [28]. This compares to 3.3% of patients from 51 NBM general practices not participating in the local COPD 'Collaborative' with a coded diagnosis of COPD within their medical record. This suggests there may be some patients with COPD within these general practices who may not be receiving targeted care for their condition.

CULTURAL AND DEMOGRAPHIC FACTORS INFLUENCING HEALTH STATUS

Outcomes of the health needs analysis – General Population Health, Priority Theme 4: <i>Cultural and Demographic Factors Influencing Health Status</i>																																																																		
Identified Need	Key Issue	Description of Evidence																																																																
Socio-economic indicators and social determinants of health	High levels of socioeconomic disadvantage exist in the Lithgow LGA.	Socio-economic indicators are an important in understanding the health of a population. Social determinants of health are the economic and social conditions under which people live. There is strong evidence from Australia and other countries that socioeconomically disadvantaged groups experience more ill health, are more likely to engage in risky health behaviours and experience reduced access to health services.																																																																
	<p>Small pockets of disadvantage exist in the Blue Mountains, Hawkesbury and Penrith LGAs.</p> <p>Population groups most likely to be living in poverty include:</p> <ul style="list-style-type: none"> • Children • Aboriginal and Torres Strait Islander people • People with disability • People without a job • Single parents in regional areas • Households renting, particularly social housing tenants 	<p>The ABS SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) is a suite of four indexes that reflect disadvantage such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations [45]. Scores above 1,000 indicate a relative lack of disadvantage and those below 1,000 indicate relatively greater disadvantage.</p> <p>Census 2016 data overall shows that the majority of NBM residents living in the Blue Mountains, Hawkesbury, and Penrith LGAs reside in postcode areas with IRSD Index decile above 5 [18]. However, the majority of Lithgow LGA residents live in postcode areas with IRSD decile amongst the second lowest disadvantaged areas decile.</p> <p>Table 7: Local Government Area (LGA) Index of Relative Socio-economic Disadvantage, 2016</p> <table border="1"> <thead> <tr> <th rowspan="2">2016 Local Government Area (LGA) Name</th> <th colspan="2">Index of Relative Socio-economic Disadvantage</th> <th colspan="2">Index of Relative Socio-economic Advantage and Disadvantage</th> <th colspan="2">Index of Economic Resources</th> <th colspan="2">Index of Education and Occupation</th> <th rowspan="2">Usual Resident Population</th> </tr> <tr> <th>Score</th> <th>Decile</th> <th>Score</th> <th>Decile</th> <th>Score</th> <th>Decile</th> <th>Score</th> <th>Decile</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains (C)</td> <td>1045</td> <td>9</td> <td>1042</td> <td>9</td> <td>1039</td> <td>9</td> <td>1070</td> <td>9</td> <td>76,904</td> </tr> <tr> <td>Hawkesbury (C)</td> <td>1028</td> <td>9</td> <td>1014</td> <td>9</td> <td>1058</td> <td>10</td> <td>979</td> <td>7</td> <td>64,592</td> </tr> <tr> <td>Lithgow (C)</td> <td>923</td> <td>2</td> <td>908</td> <td>2</td> <td>953</td> <td>3</td> <td>893</td> <td>1</td> <td>21,090</td> </tr> <tr> <td>Penrith (C)</td> <td>999</td> <td>7</td> <td>988</td> <td>8</td> <td>1022</td> <td>9</td> <td>948</td> <td>5</td> <td>196,066</td> </tr> </tbody> </table> <p>Within NBM LGAs, significant variation exists in IRSD scores. All LGAs have postcode areas experiencing levels of high or extreme disadvantage.</p>								2016 Local Government Area (LGA) Name	Index of Relative Socio-economic Disadvantage		Index of Relative Socio-economic Advantage and Disadvantage		Index of Economic Resources		Index of Education and Occupation		Usual Resident Population	Score	Decile	Score	Decile	Score	Decile	Score	Decile	Blue Mountains (C)	1045	9	1042	9	1039	9	1070	9	76,904	Hawkesbury (C)	1028	9	1014	9	1058	10	979	7	64,592	Lithgow (C)	923	2	908	2	953	3	893	1	21,090	Penrith (C)	999	7	988	8	1022	9	948	5
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Outcomes of the health needs analysis – General Population Health, Priority Theme 4: Cultural and Demographic Factors Influencing Health Status

		<p>Penrith LGA: The most disadvantaged areas for Penrith in the 2nd decile were: Claremont Meadows, Colyton, North St Marys, Oxley Park, St Clair and St Marys. St Marys experienced the lowest SEIFA scores. Glenmore Park reported the highest SEIFA score.</p> <p>Blue Mountains LGA: Katoomba reported the lowest SEIFA score (957) showing disadvantage in the 5th decile. The highest SEIFA scores were in Glenbrook and Mount Review at 1,104.</p> <p>Hawkesbury LGA: The lowest SEIFA scores with pockets of population in the 1st decile was South Windsor (926). The highest SEIFA score of 1,103 was for Windsor Downs.</p> <p>Lithgow LGA: Suburbs with the lowest SEIFA score and populations within the 1st decile were Bowenfels, Morts Estate, Oaky Park, Hermitage Flat, Vale of Clwydd.</p> <p>Recent NSW data [46] indicates that population groups most likely to be living in poverty / experiencing significant economic disadvantage include:</p> <ul style="list-style-type: none"> • Children: more than 1 in 6 children in NSW live below the poverty line • Aboriginal and Torres Strait Islander people and people with disability: experience double the rates of significant economic disadvantage compared to the general NSW population • People without a job, including unemployed persons and others not in the labour force • Single parents in regional NSW areas • Households renting in the private market, in particular social housing tenants 							
Domestic Violence	Higher incidence rate of domestic violence in Penrith LGA compared to the NSW state average.	<p>Domestic violence related assaults per 100,000 population for each LGAs and rankings for the period July 2017 to June 2018 follow [47]. Note that higher ranking indicates comparatively lower numbers of assaults:</p> <ul style="list-style-type: none"> - Blue Mountains 284.6 assaults and NSW rank 75/140 - Hawkesbury 406.7 assaults and NSW rank 62/140 - Lithgow 394.9 assaults and NSW rank 46/140 - Penrith 581.4 assaults and NSW rank 28/140 							
Culturally and Linguistically Diverse (CALD) population	<p>Highest proportion of CALD population live in the Penrith LGA</p> <p>In 2016, 1.3% of the NBMPHN population rated their English-speaking proficiency as 'not well' or 'not at all', impacting on poorer access to services.</p>	<p>In 2016, 18.2% of NBMPHN residents were born overseas compared with 27.6% for NSW [18]. The eight top countries of origin for predominantly non-English speaking countries were: India, Philippines, Malta, Germany, China, Italy, Fiji and Netherlands. Within NBM, Penrith LGA had the highest proportion (21.6%) of its residents born overseas compared with other LGAs.</p> <p>English language proficiency varies across NBM, overall with Penrith LGA having the highest proportion of residents reporting they "speak English not well or not at all". According to the ABS, individuals with limited English language proficiency have more difficulty in gaining access to health care, employment, education and other services compared to English proficient individuals.</p> <table border="1" data-bbox="752 1273 1995 1334"> <tr> <td></td> <td>Blue Mountains</td> <td>Hawkesbury</td> <td>Lithgow</td> <td>Penrith</td> <td>NBM</td> <td>NSW</td> </tr> </table>		Blue Mountains	Hawkesbury	Lithgow	Penrith	NBM	NSW
	Blue Mountains	Hawkesbury	Lithgow	Penrith	NBM	NSW			

Outcomes of the health needs analysis – General Population Health, Priority Theme 4: Cultural and Demographic Factors Influencing Health Status

		<table border="1"> <tr> <td>Population born overseas</td> <td>16.8</td> <td>12.3</td> <td>9.3</td> <td>21.6</td> <td>18.2</td> <td>27.6</td> </tr> <tr> <td>Speaks a language other than English at home</td> <td>6.4</td> <td>6.2</td> <td>3.8</td> <td>16.9</td> <td>11.9</td> <td>25.3</td> </tr> <tr> <td>Speaks English ‘not well or not at all’</td> <td>0.6</td> <td>0.7</td> <td>0.5</td> <td>1.9</td> <td>1.3</td> <td>4.5</td> </tr> </table> <p>Between 2011 and 2016, the largest changes in birthplace countries for the NBM population were for people born in:</p> <ul style="list-style-type: none"> • India (+1,509 persons) • Philippines (+724 persons) • New Zealand (+631 persons) 	Population born overseas	16.8	12.3	9.3	21.6	18.2	27.6	Speaks a language other than English at home	6.4	6.2	3.8	16.9	11.9	25.3	Speaks English ‘not well or not at all’	0.6	0.7	0.5	1.9	1.3	4.5																				
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Humanitarian entrants and refugees	<p>Approximately 219 humanitarian refugees settled in the NBM region from January 2016 – March 2019</p> <p>Poor English language proficiency skills is expected to negatively impact access to health and welfare services among the NBM refugee intake.</p>	<p>Under the Australian Humanitarian and Refugee Program, between January 2016 and March 2019, about 219* refugees settled in NBM [48]. Penrith LGA was the single largest area of residence for refugees, with almost 9 out of 10 humanitarian entrants settling in the LGA over this period. In January-March 2019, 1,109 out of 1,302 (85.2%) refugees settling with NSW state reported having nil or poor English language proficiency skills, with similar rates for the 2016 to 2018 period. It is expected that such poor English proficiency skills will negatively impact the ability of refugees settling in the NBM region to access local health and social welfare services.</p> <table border="1"> <thead> <tr> <th rowspan="2">LGA</th> <th colspan="5">Number of humanitarian entrants</th> </tr> <tr> <th>2016</th> <th>2017</th> <th>2018</th> <th>Jan-Mar 2019</th> <th>Total 2016 – Mar 2019</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>0</td> <td>0</td> <td>25</td> <td><5</td> <td>28</td> </tr> <tr> <td>Hawkesbury</td> <td>0</td> <td>0</td> <td>3</td> <td>0</td> <td><5</td> </tr> <tr> <td>Lithgow</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Penrith</td> <td>108</td> <td>56</td> <td>14</td> <td>10</td> <td>188</td> </tr> <tr> <td>Total NBM</td> <td>108</td> <td>56</td> <td>42</td> <td>13</td> <td>219</td> </tr> </tbody> </table> <p>* The actual number of entrants is not disclosed when <5 people. In these cases, we assume 3 humanitarian entrants settled in the area to calculate an estimate (total NBM).</p>	LGA	Number of humanitarian entrants					2016	2017	2018	Jan-Mar 2019	Total 2016 – Mar 2019	Blue Mountains	0	0	25	<5	28	Hawkesbury	0	0	3	0	<5	Lithgow	0	0	0	0	0	Penrith	108	56	14	10	188	Total NBM	108	56	42	13	219
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Major issues impacting on the health of refugee communities	<p>Low literacy levels, health literacy, gambling, alcohol and other drugs, obesity, chronic disease and access to health services including</p>	<p>Local stakeholder consultations indicate that major issues increasingly impacting on the health of refugee communities in the NBM region, include [49, 50]:</p> <ul style="list-style-type: none"> • Low literacy levels and poor health literacy, with associated challenges in health seeking and accessing timely and appropriate health services 																																									

Outcomes of the health needs analysis – General Population Health, Priority Theme 4: *Cultural and Demographic Factors Influencing Health Status*

	interpreters identified as major issues impacting on health	<ul style="list-style-type: none"> • Problem gambling and misuse of alcohol and other drugs • Increasing levels of obesity and chronic disease within local CALD communities • Access to interpreter and translation services. Local services report increases in the number of people who use AUSLAN, the second highest use of interpreters in the NBM region following Arabic. • High prevalence of mental health problems due to trauma and complex challenges with settlement • Lack of trust and or familiarity in the health system
Mental Health	Poor access to mental health services by CALD youth	Investigations undertaken by the NBMLHD Multicultural Services Unit indicate that CALD youth typically do not access mental health services. The usual approach in certain CALD communities is to take care of mental health problems within the family environment. CALD youth that do seek mental health services are reported to frequently travel outside of the NBM region in order to access bi-lingual mental health services.

END OF LIFE CARE

Outcomes of the health needs analysis – General Population Health, Priority Theme 5: <i>End of Life Care</i>		
Identified Need	Key Issue	Description of Evidence
End of Life Care	Increase in projected need for end of life care in the NBM region	The population in Nepean Blue Mountains region was just over 378,000 in 2016 and is estimated to grow to 441,000 by 2031. Of significance is the population under the age of 65 is expected to grow by under 2% over the next 15 years, while the population growth of those over 85 is expected to grow by over 12%. Deaths per year in the NBM region is expected to increase from 1,900 in 2015 to 1,969 by 2030. Estimates of the need for end of life care (EoLC), based upon modelling of mortality data and underlying cause of death codes (ICD10 codes) predicts that the number of individuals in the NBM region needing EoLC will increase from 1,370 in 2015 to 1,420 in 2030 [51].
Death Literacy	<p>Death literacy index (DLI) scores among residents and EoLC workers in the Blue Mountains suggests poor factual knowledge and understanding of the death system.</p> <p>DLI scores among Blue Mountains EoLC workers suggests poor knowledge and understanding of the role of the community.</p> <p>There is need for the provision of carer support with practical aspects of caring.</p>	<p>Results from a 2019 Death Literacy Survey completed by 139 Blue Mountains residents to measure people’s Death Literacy (DLI, consisting of four subscales: Experiential Knowledge, Factual Knowledge, Practical Knowledge, and Community Knowledge) indicated that [52]:</p> <ul style="list-style-type: none"> • Residents with and without experience in end-of-life care achieved higher scores for their DLI, Experiential Knowledge, and Practical Knowledge) compared to the national average. • Both groups scored poorly on Factual Knowledge suggesting a need for more education on the death system for both the public and workers. • Despite Blue Mountains residents with work volunteering or training experience scoring higher on Experiential Knowledge and Practical Knowledge than the national average, they did not score highly upon Community Knowledge. This suggests a need for educating EOL workers in the role of the community. • There are high levels of local experience in providing emotional support to end-of-life carers, but much lower levels of providing practical support. <p>Intervention strategies informed by people’s life experiences included:</p> <ul style="list-style-type: none"> • Interventions which encourage expression such as through art, music, performance or social media, and which are powerful forms of public communication could be encouraged in this community. • Need for the provision of carer support with the practical aspects of caring, for example opportunities for co-facilitated care or feedback so they know how they could be more helpful.

OLDER PERSONS

Outcomes of the health needs analysis – General Population Health, Priority Theme 6: <i>Older Persons</i>																																																						
Identified Need	Key Issue	Description of Evidence																																																				
Ageing Population	Projected increase of the population aged 65 years and over (20.7% by 2036) will significantly impact upon demand for primary care services in the NBM region.	<p>The NBM region population is ageing. In 2016, 14.2% of the NBM population was aged 65 years and older. The proportion of the NBM population aged 65 years and older is projected to increase to 18.5% by 2026 and 20.8% by 2036 [53]. Additionally, the most rapid increases in the population are projected for the 75-84 and 85+ year age groups. From 2016-2036, the 85+ year age group will experience the highest growth of 233% (5,600 to 16,300 persons) followed by the 75-84 years age group of 195% (14,660 to 35,470 persons).</p> <p>Table 8: Older persons (65+ years) population distribution in Nepean Blue Mountains, by LGA, 2016 to 2036 [51]</p> <table border="1"> <thead> <tr> <th rowspan="2">LGA</th> <th colspan="2">2016</th> <th colspan="2">2026</th> <th colspan="2">2036</th> </tr> <tr> <th>Number</th> <th>% of LGA population</th> <th>Number</th> <th>% of LGA population</th> <th>Number</th> <th>% of LGA population</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>15,100</td> <td>18.4</td> <td>20,450</td> <td>24.1</td> <td>24,150</td> <td>26.7</td> </tr> <tr> <td>Hawkesbury</td> <td>9,350</td> <td>13.8</td> <td>13,400</td> <td>17.9</td> <td>17,450</td> <td>20.5</td> </tr> <tr> <td>Lithgow</td> <td>4,500</td> <td>21.3</td> <td>5,750</td> <td>27.4</td> <td>6,550</td> <td>32.1</td> </tr> <tr> <td>Penrith</td> <td>24,300</td> <td>12.8</td> <td>37,600</td> <td>17.1</td> <td>48,700</td> <td>19.3</td> </tr> <tr> <td>NBM</td> <td>53,250</td> <td>14.2</td> <td>77,200</td> <td>18.5</td> <td>96,850</td> <td>20.8</td> </tr> </tbody> </table>					LGA	2016		2026		2036		Number	% of LGA population	Number	% of LGA population	Number	% of LGA population	Blue Mountains	15,100	18.4	20,450	24.1	24,150	26.7	Hawkesbury	9,350	13.8	13,400	17.9	17,450	20.5	Lithgow	4,500	21.3	5,750	27.4	6,550	32.1	Penrith	24,300	12.8	37,600	17.1	48,700	19.3	NBM	53,250	14.2	77,200	18.5	96,850	20.8
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Prevalence of chronic conditions	High prevalence of chronic conditions and multi-morbidity among older persons at general practice encounters.	Nearly all patients aged 65+ at a GP consultation had one or more diagnosed chronic condition [54]. In the Australian population, 90% of this older group had a least one chronic condition, the majority (57%) had three or more (multi-morbidity), more than one-quarter (26.1%) had five or more chronic conditions (multi-morbidity) and almost one-tenth (9.4%) had seven or more diagnosed chronic conditions.																																																				
Coordination of Services	Increasing demand on resources and pressure on General Practice to coordinate services for older persons.	Resource use by people over 65 years shows substantial increases between 2001 and 2015 in general practice. Encounters increased from 22.8% to 27.8%. GP clinical time increased from 23.9% to 28.7%. Problems managed increased from 26.9% to 35.0%. Medications increased from 28.2% to 35.8%. Tests ordered increased from 24.9% to 30.8%. Referrals made increased from 24.2% to 32.3%.																																																				
Dementia	Increasing prevalence and severity of dementia in the NBM population, among older persons.	The prevalence of dementia in the NBM population is projected to increase from 1.0% in 2011 (estimated to be equivalent to 3,484 persons) to 1.9% in 2031 (estimated to be equivalent to 8,374 persons), with the highest prevalence in the Blue Mountains (2.3%) and Lithgow (3.0%) LGAs. In addition, broken down by severity, estimates indicate that between 2016 and																																																				

Outcomes of the health needs analysis – General Population Health, Priority Theme 6: *Older Persons*

	Highest prevalence of dementia amongst Indigenous persons	<p>2045, the proportion of persons with mild dementia in NBM will reduce from 55% to 42%, while those with moderate will rise from 30% to 37% and those with severe dementia will rise from 15% to 20% [63].</p> <p>The prevalence of dementia amongst Indigenous Australians is almost five times the rate in the general Australian population, and the proportion of Indigenous persons aged 50+ years living in NBM (1.8%) is higher compared to NSW (1.6%) and Australia (1.4%) [56]. In line with these trends, the prevalence of dementia among Indigenous persons is expected to be highest among Indigenous persons in the NBM region.</p>																										
	Increasing burden of disease due to dementia among older persons	<p>The total burden of disease due to dementia among older persons in the Australian population is increasing. In 2015, dementia was the leading cause of the total burden of disease for females aged 75-84 and 85+ years, contributing 9.7% and 20.0% of the total burden respectively [1]. This was an increase from 9.4% and 18.0% in 2011 [57].</p> <p>Table 9: Proportion of the total burden of disease due to dementia for males and females aged 75 to 84, and 85+ years, 2011 and 2015</p> <table border="1" data-bbox="788 678 2042 847"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">2011</th> <th colspan="4">2015</th> </tr> <tr> <th>Males 75-84</th> <th>Females 75-84</th> <th>Males 85+</th> <th>Females 85+</th> <th>Males 75-84</th> <th>Females 75-84</th> <th>Males 85+</th> <th>Females 85+</th> </tr> </thead> <tbody> <tr> <td>Proportion of total disease burden</td> <td>6.1%</td> <td>9.4%</td> <td>11%</td> <td>18%</td> <td>6.8%</td> <td>9.7%</td> <td>13.1%</td> <td>20.0%</td> </tr> </tbody> </table>		2011				2015				Males 75-84	Females 75-84	Males 85+	Females 85+	Males 75-84	Females 75-84	Males 85+	Females 85+	Proportion of total disease burden	6.1%	9.4%	11%	18%	6.8%	9.7%	13.1%	20.0%
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	High mortality rates among persons with dementia in the NBM region.	<p>Between 2012 and 2016, there were 194 male and 422 female deaths due to Dementia and Alzheimer’s disease in the NBMPHN population, accounting for 3.6% and 7.8% of deaths from all causes respectively [58]. Dementia and Alzheimer’s disease was the third leading cause of death by international classification of disease (ICD-10) code for all persons in the NBMPHN region during this time period.</p>																										
Awareness of and Access to Services	Inadequate awareness of available support and services for older persons among primary care providers.	Access to services before crisis point and after hours support is impeded by lack of awareness of services amongst health professionals, carers and older people. Consumers have identified increasing social isolation as a major and increasing risk negatively impacting on older people.																										
Aged Care	Premature placement of older persons into RACFs and lack of appropriate aged based care services to support independent living at home	An emerging issue across NSW is the premature placement of older persons in residential aged care facilities (RACFs). This is occurring due to a lack of community based aged care places to support people to remain living independently at home [59]. The result is lengthy delays on waiting lists for home based service provision. This in turn leads to carer/ family stress and older people are being prematurely placed into RACFs.																										

Outcomes of the health needs analysis – General Population Health, Priority Theme 6: *Older Persons*

	High prevalence of dementia in RACFs	Available data indicates that more than half (53.2%) of people using residential aged care services in NBM on 30 June 2018 had a diagnosis of dementia [60]. This is likely to impact heavily upon the levels of care and assistance required by those persons, including activities of daily living, cognition and behavior, and complex health care.
	The greatest increases in high care needs among people living in permanent residential care are for complex health care	<p>Between 2009 and 2018, the proportion of people in Australia in permanent residential aged care with high care need ratings progressively increased across every domain of the Aged Care Funding Instrument, including activities of daily living (from 33.4% to 58.9%), cognition and behavior (from 36.9% to 64.1%) and complex health care (from 12.7% to 53.0%). The greatest increases over this time were for the complex health care domain [61].</p> <p>Complex health care relate to the needs of the person for assistance in taking medications on a regular basis, and ongoing complex health care procedures and activities, such as: daily blood pressure and blood glucose measurement, weekly pain / complex pain management, skin integrity management, management of chronic infectious conditions, chronic skin wounds, Palliative care including EoLC, and many more. This is likely to have led to significant, increasing demand for services by health professionals eligible to provide complex health care, including: Nurse practitioners, Registered Nurses, Medical Practitioners, and identified Allied Health Professionals [62]. Further investigation is required to determine whether the increasing demand for complex health care has been met for NBM residents living in permanent residential aged care.</p>
	<p>Royal Commission into Aged Care interim findings. Key outcomes include the need for:</p> <ul style="list-style-type: none"> • More aged care home packages • More streamlined assessment processes for aged care. • Integrated, face-to-face support and linking services, with local knowledge, to help people access the right service. • Improved prevention and management of wounds, continence management, nutrition and hydration and oral health care. 	<p>Interim findings from the Commonwealth’s Royal Commission into Aged Care Quality and Safety highlights confronting issues with regard to home and residential care for older people [168]. Key issues relating to health and healthcare of older persons include:</p> <p>Accessing home care:</p> <ul style="list-style-type: none"> • Large numbers of older people who have been assessed as being eligible for home care are not able to access a package in a timely way, because they must first wait in the national prioritisation queue before a package of services is ‘assigned’, and then they must find a service provide to deliver their care. • The assessment process is frequently confusing, confronting, intimidating and overwhelming for many people. • The average length of time waiting for a package is just over a year for approximately 50% of people on a Level 4 package, can be up to 3 years for 25% of people. • There is clear risk in the interim period of declining function, inappropriate hospitalisation, carer burnout and premature institutionalisation due no provision of the necessary services. <p>Navigating the aged care system:</p> <ul style="list-style-type: none"> • There is a lack of localized and face-to-face services to navigate the system and connect people to services • The current generation of older people find online portals for providing information and support to be limited.

Outcomes of the health needs analysis – General Population Health, Priority Theme 6: *Older Persons*

	<ul style="list-style-type: none"> • The reduction and elimination of restrictive practices. • More appropriate prescribing of antipsychotics medications and medication use more generally. • Moving young people out of aged care. 	<ul style="list-style-type: none"> • The My Aged Care website is inadequately meeting expectations to operate at a similar standard to comparable online information services offered by some other countries. • The long waiting lists and waiting times for people to access Home Care Packages and poor communication, is compounding frustration with the My Aged Care Portal. • My Aged Care is not suitable for use by people with mild cognitive impairment or those living with dementia. • The previous Home and Community Care programme offered a more localized approach to information, referral and coordination – with no existing replacement for these local mechanisms. • Overall, the main barriers people face when trying to access aged care services include: <ul style="list-style-type: none"> ○ Difficulty in finding useful information about what options are available where they live ○ Difficulty in working out how to coordinate services which may be delivered by different providers ○ Time-consuming, repetitive efforts that have to be made in order to access a home-based service or transition into residential care <p>Quality and safety issues with residential care:</p> <ul style="list-style-type: none"> • Inadequate prevention and management of wounds, sometimes leading to septicaemia and death. • Poor continence management • Dreadful food, nutrition and hydration, and insufficient attention to oral health. The Dietitians Association of Australia further estimate up to 50% of people in residential aged care are malnourished. • Common use of physical restraint on residents, not so much for their safety or wellbeing but to make them easier to manage. • Widespread overprescribing, often without clear consent, of drugs which sedate residents, rendering them drowsy and unresponsive to visiting family and removing their ability to interact with people. • Patchy and fragmented palliative care for residents who are dying, creating unnecessary distress for the dying person and their family. • Pressure injuries occur in a third of the most frail aged care residents at the end of their lives. • A high proportion (61%) of residents from 150 RACFs were regularly taking psychotropic agents, with 41% prescribed antidepressants, 22% prescribed antipsychotics, and 22% prescribed benzodiazepines, despite estimates that psychotropic medication is only clearly justified in about 10% of cases. <p>Younger people in residential aged care:</p> <ul style="list-style-type: none"> • Inappropriate placement of younger people in residential aged care
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Outcomes of the health needs analysis – General Population Health, Priority Theme 6: *Older Persons*

	Immunisation: Influenza A outbreaks among aged care facilities	Available state influenza surveillance reports indicate that residents living in residential aged care facilities are particularly prone to influenza outbreaks [63]. In the year to April 2019, 27 of the 37 (73%) laboratory confirmed influenza outbreaks in institutions reported to NSW public health units were in residential aged care facilities. All outbreaks were due to influenza A, with at least 135 residents reported to have symptoms, 25 requiring hospitalisation and 9 deaths in residents linked to these outbreaks.
Home Care	Increasing support needs for older persons to be cared for at home.	Care for the cognitively impaired among older people is inadequate to meet present and increasing needs for home based care. Support for independent living at home is inadequate to meet present and increasing needs in primary care services [64, 65]. Navigating the new My Aged Care portal, for consumers and GPs, to navigate care needs has been identified as problematic.
Social Isolation	Social isolation and loneliness are increasing problems for older people with impacts including poorer physical health, mental health and use of health services.	Social isolation and loneliness are particularly significant issues, and contribute to under-addressed problems facing older people. On average, around 1 in 6 people (17%) nationally report emotional loneliness, with the highest rates of emotional loneliness observed for people aged 75 years and over [66]. Poorer health is associated with higher rates of emotional loneliness and a lack of social support. Older people without adequate social connectedness are at an increased risk of experiencing poorer mental health and wellbeing, negatively impacting on older people’s physical health and use of health services [67].

Primary Mental Health Care (including Suicide Prevention)

SUICIDE PREVENTION

Outcomes of the health needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>																				
Identified Need	Key Issue	Description of Evidence																		
Suicide Deaths	<p>Death by intentional self-harm in the NBM region is the highest among NSW metropolitan PHN regions.</p> <p>Deaths by intentional self-harm in the NBM region are amongst the highest in the last 3 of 10 years.</p>	<p>In 2017 suicide was the leading cause of death for people in Australia aged 15-44 and for people aged 45-54 it was the second leading cause [74]. Overall suicide rates in NSW have increased over the 2008 to 2017 period from 8.8 to 10.9 standardised per 100,000 people (national rate 12.6). State records indicate that There were 46 deaths from suicide in the Nepean Blue Mountains (NBM) region in 2016, with the equivalence death rate 12.5 per 100,000 persons the highest among metropolitan PHNs in NSW and higher than the state average (10.3) [75, 76].</p> <p>Suicide rates per 100,000 in the NBM region have been above the NSW average between 2001 and 2016. Consistent with National and State trends, suicide rates in the NBMPHN region have been amongst the highest in the last 3 of 10 years, rising steeply in 2014 (14.3 per 100,000) and remaining high in 2015 (12.6 per 100,000) and 2016 (12.5 per 100,000) [76].</p>																		
Intentional self-harm hospitalisations	<p>Higher rate of hospitalisations due to self-harm in NBM compared to NSW state average.</p> <p>Highest rate of intentional self-harm hospitalisations among women, in particular women in the Blue Mountains LGA.</p>	<p>The burden of self-harm is far greater than the overall burden of suicide. In 2016-17, hospitalisations for self-harm by NBM residents of all ages occurred at a rate of 174.1 per 100,000 for persons and was significantly higher than the NSW rate of 149.0 per 100,000 persons. Self-harm hospitalisations were higher among females than males in all four of the region’s LGAs in 2016-18, with the highest rate for males in the Lithgow LGA and highest rate for females in the Blue Mountains LGA [77].</p> <p>Figure 4: Rate of self-harm hospitalisations by gender within NBMPHN Local Government Areas, 2016-18</p> <table border="1"> <caption>Data for Figure 4: Rate of self-harm hospitalisations by gender within NBMPHN Local Government Areas, 2016-18</caption> <thead> <tr> <th>LGA</th> <th>Males</th> <th>Females</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>73.8</td> <td>154.1</td> </tr> <tr> <td>Hakesbury</td> <td>72.2</td> <td>116.7</td> </tr> <tr> <td>Lithgow</td> <td>75.8</td> <td>122.4</td> </tr> <tr> <td>Penrith</td> <td>71.7</td> <td>145.6</td> </tr> <tr> <td>NSW</td> <td>73.5</td> <td>127.3</td> </tr> </tbody> </table>	LGA	Males	Females	Blue Mountains	73.8	154.1	Hakesbury	72.2	116.7	Lithgow	75.8	122.4	Penrith	71.7	145.6	NSW	73.5	127.3
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Males	3.1 times higher suicide rates for men than women.	Deaths from intentional self-harm is higher for males than females [78]. In 2017 the standardised suicide rate for Australian males was 3.1 times higher than for women. Between 2012 and 2016, suicide was the 8 th leading cause of death for NBMPHN males however was not among the top 20 causes of death for NBMPHN females in the same time period [79].																		

Outcomes of the health needs analysis – Primary Mental Health Care: *Suicide Prevention*

	<p>Men who have previously attempted suicide are a high-risk group.</p>	<p>Men are at greater risk of death by suicide accounting for over three quarters of suicide fatalities (76%), however are less likely to seek help [80]. Men who have previously attempted suicide are an especially high-risk group for subsequently dying by suicide [81].</p>												
	<p>Difficulties navigating pathways of care for families/friends at risk of suicide</p>	<p>Research with males who had attempted suicide and families and friends who had lost their male relatives or friends through suicide identified having serious difficulties in negotiating relevant services, and accessing appropriate and timely help including referral to a full range of supports when faced with significant distress and on a pathway to despair [82].</p>												
<p>Comorbid Factors Associated with Suicide</p>	<p>80% of intentional self-harm (suicide) deaths are associated with mental health and substance use disorder comorbidities</p>	<p>In 2017, 80% of suicide deaths in Australia were identified as having comorbidities as co-occurring factors (but not necessarily a causal association) [83]. The top seven comorbidities identified according to the International Classification of Diseases, were related to mental health and substance use disorders.</p>												
<p>Youth</p>	<p>A significant proportion of young women and men 12-17 years had contemplated suicide or had developed a suicide plan in 2017.</p>	<p>Estimates of the number of young people 12-17 years who had suicide ideation, made a suicide plan and made a suicide attempt in 2017 in the NBM population based upon the Young Minds Matter 2013-14 survey and 2017 population estimates for NBM LGAs are presented below [84-85]. This data indicates the magnitude of need for early intervention suicide prevention services within the NBM region for this cohort.</p> <p>Figure 5: Estimated prevalence (number and %) of suicide behaviours among young people 12-17 years in Nepean Blue Mountains, 2017</p> <table border="1"> <thead> <tr> <th>Behaviour</th> <th>Males</th> <th>Females</th> </tr> </thead> <tbody> <tr> <td>Suicide ideation</td> <td>679</td> <td>1614</td> </tr> <tr> <td>Suicide plan</td> <td>437</td> <td>1145</td> </tr> <tr> <td>Suicide attempt</td> <td>287</td> <td>679</td> </tr> </tbody> </table> <p>Estimated total males 12-17 years ≈ 15,088 Estimated total females 12-17 years ≈ 15,084</p> <p>Prevalence of self-harm hospitalisations for young people in the NBM region is 2.5 times higher than for people of all ages.</p> <p>Young people identifying as LGBTI are five times more</p>	Behaviour	Males	Females	Suicide ideation	679	1614	Suicide plan	437	1145	Suicide attempt	287	679
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Suicide plan	437	1145												
Suicide attempt	287	679												
		<p>In 2017-2018, 118 young people aged 15-24 years (241.6 per 100,000 population) in NBM were hospitalised for intentional self-harm. This was similar to the NSW rate of 233.5 per 100,000 population), however the NBM hospitalisation rate for young people aged 15-24 years was 2.5 times as high as the population rate for all ages [77].</p>												
		<p>Compared to the general population, young LGBTI people are more likely to attempt suicide in their lifetime, to have thoughts of suicide, and to have engaged in self-harm in their lifetime, specifically [86-87]:</p>												

Outcomes of the health needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>		
	likely to have attempted suicide than other young people	<ul style="list-style-type: none"> • LGBTI young people aged 16 to 27 are five times more likely to have attempted suicide in their lifetime. • Lesbian, gay, bisexual and transgender young people are nearly twice as likely to engage in self-injury. • Nationally, LGBTI people experience a rate of suicide over four times higher than people identifying as straight.
LGBTI people	High rates of suicide attempts for LGBTI people	<p>Research indicates that mental ill-health, self-harm, suicide attempt and suicidal ideation rates amongst LGBTI people are disproportionately higher than the general population [88-89]:</p> <ul style="list-style-type: none"> • 20% of transgender Australians and 15% of lesbian, gay, and bisexual Australians report current suicidal thoughts • Lesbian, gay, and bisexual Australians have up to 14 times higher rates of suicide attempts than their heterosexual peers • Up to 50% of transgender people have attempted suicide at least once • Anecdotal evidence suggests higher rates of suicidal and self-harming behaviours among intersex people compared to the general population. • LGBTI people aged 16 years and over are between 5-18 times more likely to have thoughts of suicide than the general population.
Aboriginal & Torres Strait Islander People	High suicide rates for Aboriginal and Torres Strait Islander people – more than 1.5 times higher than for non-Indigenous people	In 2017, suicide was the second leading cause of death for Aboriginal and Torres Strait Islander males, and the seventh leading cause of death for Aboriginal and Torres Strait Islander females in Australia [83]. The largest difference between Indigenous and non-Indigenous suicide rates occurred at younger ages, with the age-standardised rate more than 3 times higher for 15-24 and 25-34 year olds. At a state level, the rate of suicides among Aboriginal persons in NSW from 2012-2016 was 1.6 times higher compared to non-Aboriginal persons (16.3 vs. 9.9 per 100,000 persons) [90].
CALD Communities	Lack of data affects understanding of suicide risk and rates among local CALD communities.	Culture and ethnicity is not captured in ABS suicide data [83]. Data on suicide behaviours amongst migrant communities in the NBM region is not collected and it is not known whether particular CALD communities face higher than average suicide risk [91].
	Recent surge in the rate of suicides and self-harm reported among the Pacific Islander community in Western Sydney	<p>Anecdotal evidence from community leaders (church leaders, school counsellors and NGOs) in Western Sydney (Nepean Blue Mountains and Western Sydney PHN regions) identified a potential surge in suicides and attempted suicides (self-harm) in the first 6 months of 2018 among persons from the Pacific Islander community (Cook Island, Samoa, Tonga and Tokelau) [92]. Reportedly 12 young people between the ages 15-18 years have had their lives ended by suicide, with a further 20 attempts.</p> <p>Community perceptions of factors contributing to this increase in suicide deaths and suicide attempts include: family issues and expectations, sexual abuse and religious expectations.</p>
Location	Lithgow:	Anecdotal evidence has identified a high number of suicides among young men and women in the Lithgow local government area between February 2016 and February 2017, with nine people having taken their lives during this period. Community

Outcomes of the health needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>		
	High rate of suicides and self-harm among young men and women in Lithgow	perceptions of factors contributing to these deaths include: perceptions of diminishing employment opportunities and job security within the local area, a lack of willingness to talk about suicide and seek out support, and a lack of local mental health services available in Lithgow [93-95].
Age and Social Risk Factors	<p>Highest relative risk of suicide deaths nationally and in NSW are among:</p> <ul style="list-style-type: none"> • Young people aged 25-34 years • Unemployed males • Persons separated from their relationship(s). 	<p>Analysis of suicide data collected by the National Coronial Information System between 2001 and 2013 revealed the following age and social-factors were related to the relative risk of suicide deaths within Australia and/or NSW [96].</p> <p>Age: When accounting for differences in the age-structure of the population, the relative risk of suicide was highest among young people in Australia aged 25-34 years (Relative risk of 1.30 compared to persons aged 15-24 years).</p> <p>Occupation and employment status: When accounting for differences in employment status within the population, the relative risk of suicide was highest among unemployed persons (Relative risk of 1.51 compared to employed persons). The highest population suicide rates were observed for unemployed males aged 35-44, 25-34 and 45-54 years.</p> <p>Marital status: The relative risk of suicide among people who were separated was more than four times higher compared to married persons (Relative risk of 4.35 compared to married persons).</p>
Psychosocial Risk Factors	The most common psychosocial risk factors for suicide include personal history of self-harm (people 64 years and under) and limitation of activities due to disability or other chronic health condition (people 65 years and older)	<p>In 2017, of the 1,966 coroner-referred suicide deaths in Australia, 63% were found to have one or more associated psychosocial risk factors. The proportion of suicide deaths with an associated risk factor differed throughout the lifespan. The most commonly reported risk factors for persons of different age groups were [97]:</p> <ul style="list-style-type: none"> • Young people under 35 years and persons aged 35-44 years, 45-54 years, and 55-64 years: personal history of self-harm, disruption of family by separation and divorce. • Persons aged 65 years and older: limitation of activities due to disability or other chronic health condition, personal history of self-harm.
Risk Factors: Mental Illness and Drug & Alcohol	People with mental illness and/or drug and alcohol use problems are at a higher risk of suicide, attempted suicide or experience suicidal ideation.	People with alcohol or drug use problems and persons with a mental illness have a higher risk of suicide than the general population. Suicide attempts are highest for persons with substance use disorders (3.1% of those affected), followed by affective and anxiety disorders (2.1% each). Suicidal ideation is highest for affective disorders (16.8%), followed by substance use disorders (10.8%) and anxiety disorders (8.9%). The comparative rate for no mental disorder is 0.8% [98].
Risk Factors: Prior Suicide Attempt Family History	Individuals who have previously attempted suicide, have a family history of suicide or are bereaved by a	People who have previously attempted suicide are at very high risk of making another suicide attempt or of dying by suicide. As many as 42% of child and youth suicides may be due to exposure to another person's suicide [81, 99-100].

Outcomes of the health needs analysis – Primary Mental Health Care: *Suicide Prevention*

	suicide are at very high risk of another suicide attempt.	
Risk Factors: Presence of chronic physical health conditions	<p>Nine physical chronic conditions are linked to increased risk of death by suicide</p> <p>People with two or more conditions had substantially increased risk</p>	<p>Research has confirmed that many physical conditions are associated with risk of suicide death [165]. Nine physical conditions have been linked to risk of death after controlling for age, gender, and the presence of mental health and substance use disorders. These include: back pain, brain injury, cancer, congestive heart failure, COPD, epilepsy, HIV/AIDS, migraine, and sleep disorders. People with two or more conditions had substantially increased risk.</p>
Hospital Discharge / Continuity of Care	<p>Higher risk of suicide following hospital discharge and or a reduction in treatment post discharge.</p>	<p>There is a higher risk of suicide after discharge from hospital or when treatment has been reduced. A UK study identified that 43% of suicide deaths occurred within a month of discharge, and 47% of those occurring before a first follow-up appointment. The first day and first week after discharge were particularly high-risk periods [101-102].</p>

MENTAL HEALTH

Outcomes of the health needs analysis – Primary Mental Health Care: <i>Mental Health</i>																																																																																
Identified Need	Key Issue	Description of Evidence																																																																														
Prevalence Of Mental Illness	Population prevalence of persons in the NBM region with mental health needs including early intervention and relapse prevention needs; and mild, moderate and severe levels of severity is 39.9%. Of these:	<p>The National Mental Health Service Planning Framework – Planning Support Tool (NMHSPF-PST) provides modelled estimates for the population prevalence of persons with a mental health need by level of severity, based upon National prevalence surveys and research evidence [103]. Mental health need is defined as: <i>“A diagnosed mental illness or other indicator of need for mental health services such as subthreshold symptoms of mental illness, distress, or a past diagnosis of mental illness, within an identified 12-month period.”</i></p> <p>In a population of 387,354 persons in the NBM region in 2019, it is estimated that approximately 64,693 people (16.7% of the total population) would be likely to have a mental illness in a 12 month period. A further 89,983 people (23.2% of the total population) are expected to be at risk of mental illness or may require some level of early intervention to prevent progression to a formal diagnosis and to manage distress. It is not expected that all of these individuals will seek or require services within a 12-month period.</p> <p>Table 9: Estimated prevalence of mental illness by age groups and severity level, NBM, 2019</p> <table border="1"> <thead> <tr> <th>Population / Age Group</th> <th>0-4</th> <th>5-11</th> <th>12-17</th> <th>18-64</th> <th>65+</th> <th>65+ BPSD</th> <th>Grand Total (all ages)</th> <th>Grand Total (all ages, %)</th> </tr> </thead> <tbody> <tr> <td>Total NBM population</td> <td>24,990</td> <td>35,790</td> <td>31,307</td> <td>239,448</td> <td>55,819</td> <td>-</td> <td>387,354</td> <td>100%</td> </tr> <tr> <td>Prevalence population</td> <td>5,506</td> <td>10,360</td> <td>8,407</td> <td>112,432</td> <td>15,699</td> <td>2,272</td> <td>154,677</td> <td>39.9%</td> </tr> <tr> <td>Early intervention</td> <td>1,649</td> <td>4,807</td> <td>3,632</td> <td>41,539</td> <td>6,087</td> <td></td> <td>57,715</td> <td>14.9%</td> </tr> <tr> <td>Relapse prevention</td> <td>-</td> <td>-</td> <td>-</td> <td>28,866</td> <td>3,402</td> <td>-</td> <td>32,268</td> <td>8.3%</td> </tr> <tr> <td>Mild</td> <td>2,204</td> <td>3,170</td> <td>2,675</td> <td>22,603</td> <td>3,234</td> <td>1,118</td> <td>35,003</td> <td>9.0%</td> </tr> <tr> <td>Moderate</td> <td>1,102</td> <td>1,587</td> <td>1,365</td> <td>11,434</td> <td>1,617</td> <td>650</td> <td>17,755</td> <td>4.6%</td> </tr> <tr> <td>Severe</td> <td>551</td> <td>769</td> <td>735</td> <td>7,990</td> <td>1,359</td> <td>504</td> <td>11,935</td> <td>3.1%</td> </tr> </tbody> </table> <p>65+ age group is divided into two groups – BPSD: behavioural and psychological symptoms of dementia.</p>							Population / Age Group	0-4	5-11	12-17	18-64	65+	65+ BPSD	Grand Total (all ages)	Grand Total (all ages, %)	Total NBM population	24,990	35,790	31,307	239,448	55,819	-	387,354	100%	Prevalence population	5,506	10,360	8,407	112,432	15,699	2,272	154,677	39.9%	Early intervention	1,649	4,807	3,632	41,539	6,087		57,715	14.9%	Relapse prevention	-	-	-	28,866	3,402	-	32,268	8.3%	Mild	2,204	3,170	2,675	22,603	3,234	1,118	35,003	9.0%	Moderate	1,102	1,587	1,365	11,434	1,617	650	17,755	4.6%	Severe	551	769	735	7,990	1,359	504	11,935	3.1%
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<ul style="list-style-type: none"> 16.7% of the total population would be likely to have a mental illness in a 12 month period. 23.2% of the total population are expected to be at risk of mental illness or may require a level of early intervention to prevent progression within a 12-month period <p>Estimated prevalence of mental illness and severity by age group and severity level ranks early</p>																																																																																

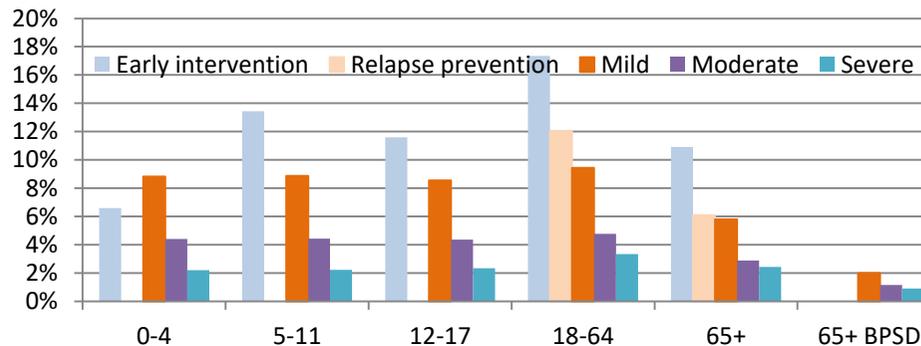
Outcomes of the health needs analysis – Primary Mental Health Care: *Mental Health*

intervention as the highest at 14.9%.

Estimated demand for NBM regional mental health services by age group and severity level illustrates similar population levels of demand for early intervention, mild, moderate and severe services within a 12-month period.

Levels of high or very high psychological distress in NBM are third highest

Figure x: Prevalence of persons with mental health needs by age group (%) in NBMPHN, 2019



The NMHSPF-PST also provides estimates of service demand for regional mental health services within a 12-month period. The demand rate is defined as: “*The proportion of people with an identified mental health need who require an individually-tailored mental health service response.*”

Table 10: Estimated demand for regional mental health services by age groups and severity level, NBM, 2019

Population / Age Group	0-4	5-11	12-17	18-64	65+	65+ BPSD	Grand Total (all ages)	Grand Total (all ages, %)
Population requiring services	4,184	6,746	5,700	42,281	5,157	1,583	65,652	
Early intervention	1,649	3,096	2,536	8,203	318	-	15,803	27%
Relapse prevention	-	-	-	5,639	569	-	6,208	19%
Mild	1,102	1,585	1,337	11,302	1,617	559	17,501	50%
Moderate	882	1,269	1,092	9,147	1,294	520	14,204	80%
Severe	551	769	735	7,990	1,359	504	11,935	100%

65+ age group is divided into two groups – BPSD: behavioural and psychological symptoms of dementia.

In 2017, 17.2% of the NBM population aged over 16 years reported *high* or *very high* psychological distress. This was higher than the NSW rate of 15.1% and higher than previous recordings for the NBM region (14.8% in 2015 and 9.7% in 2013) but was in keeping with the NSW trend. Across all NSW PHNs, NBMPHN ranked third highest for persons with *high* or *very high* psychological distress.

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	among 10 NSW PHN regions.	
	People with Mild Mental Illness is estimated at 9.0% of the total NBM population with the highest number within the Penrith LGA	<p>People with mild mental illness includes mostly those diagnosed with anxiety and depression, with a duration of less than 12 months and which have a minimal impact on functioning. The NMHSPF-PST estimates that 9.0% of the NBM population or 35,003 persons have a mild mental illness in 2019. Of these, 17,501 will potentially need or seek treatment within a 12-month period. The estimated number of individuals with a mild mental illness by LGA in the NBM region in 2019 is indicated below [103].</p> <ul style="list-style-type: none"> • Blue Mountains: 7,570 • Hawkesbury: 6,286 • Lithgow: 1,873 • Penrith: 19,339
	People with Moderate Mental Illness is estimated at 4.6% of the NBM population with the highest number within the Penrith LGA	<p>People with moderate mental illness includes those with a diagnosed mental illness of more than 12 months duration, but does not meet the definition for severe or has a moderate impact on functioning. The NMHSPF-PST estimates that 4.6% of the NBM population or 17,755 persons have a moderate mental illness in 2019. Of these, 14,204 will potentially need or seek treatment within a 12-month period. The estimated number of individuals with a moderate mental illness by LGA in the NBM region in 2019 is indicated below [103].</p> <ul style="list-style-type: none"> • Blue Mountains: 3,846 • Hawkesbury: 3,189 • Lithgow: 952 • Penrith: 9,804
	People with Severe Mental Illness is estimated at 3.1% of the NBM population with the highest number within the Penrith LGA	<p>Severe mental illnesses are defined by diagnosis type – including those “as severe as schizophrenia”, any diagnosis of psychosis or bipolar; and impact on functioning – including other severe disorders with high impact, such as major depressive disorder requiring hospitalization, &/or had more than 60 days out of role in the last year, &/or experiencing very high distress, &/or is unable to work at the current time. The NMHSPF-PST estimates that 3.1% of the NBM population or 11,935 persons have a severe mental illness in 2019. All of these persons (100%) will need or seek treatment within a 12-month period. The estimated number of individuals with a severe mental illness by LGA in the NBM region in 2019 is indicated below [103].</p> <ul style="list-style-type: none"> • Blue Mountains: 2,616 • Hawkesbury: 2,140 • Lithgow: 654 • Penrith: 6,545 <p>In the July 2018 to June 2019 period, data from completed needs ratings completed by Partners in Recovery (PIR) Support Facilitators on intake, review &/or exit to the PIR programs identified the top five unmet needs for clients in 2018-19: 73.9%</p>

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		reported psychological distress as a significant unmet need. Other reported unmet needs included ‘other services’ (82.0%), ‘daytime activities’ (70.4%), ‘company’ (social life, 60.1%) and ‘physical health’ (56.9%) [104].
	Children and youth – approximately 13.9% of 4 to 17 year olds experienced a mental health disorder in the previous 12-months.	The “Young Minds Matter” survey (2013–14) showed that 13.9% of 4 to 17 year olds were assessed as having mental health disorders in the previous 12 months [84]. Males were more likely than females to have experienced mental disorders in the 12 months (16.3% compared with 11.5%). ADHD was the most common disorder (just over 7%), followed by anxiety disorders (just under 7%), major depressive disorder (3%) and conduct disorder (2%).
	Children and youth – persistent rise in youth psychological distress across Australia.	The Mission Australia and Black Dog Institute 2019 joint report indicates considerably more young people reported experiencing psychological distress in 2018 compared to 2012 [166]. Key findings included: <ul style="list-style-type: none"> • Close to one in four young people met the criteria for experiencing psychological distress – a substantial increase over the past seven years (rising by 5.5% from 18.7% in 2012 to 24.2% in 2018). • In 2018, more than three in ten (31.9%) of Aboriginal and Torres Strait Islander young people met the criteria for psychological distress, compared to 23.9% for non-Indigenous young people. • Females were twice as likely as males to experience psychological distress. • <i>Stigma and embarrassment, fear and a lack of support</i> were the most commonly cited barriers that prevent young people from seeking help. • The top issues of personal concern for young Australians experiencing psychological distress were <i>coping with stress, mental health and school or study problems</i>. High levels of concern were also expressed about other issues including <i>body image, suicide, family conflict and bullying/emotional abuse</i>. • Almost four times the proportion of young people with psychological distress reported concerns about <i>suicide</i> (35.6% compared with 9.4% of respondents without psychological distress). • Young people experiencing psychological distress reported they would go to <i>friend/s, parent/s or guardian/s</i> and the <i>internet</i> as their top three sources of help.
Burden of mental ill health.	Mental health and substance use disorders were the fourth leading cause of the disease burden in Australia, at 12% of total disease burden	Data from the Australian Burden of Disease Study in 2015 indicate that mental health and substance use disorders were the fourth leading cause of the disease burden in Australia, accounting for 12% of the total disease burden [1]. Mental health and substance use disorders were the second leading cause of the non-fatal loss of health or Years Lived with Disability (25% for males and 22% for females).
	Higher prevalence of major physical conditions and reduced quality of life	Data examined from the 2014-15 National Health Survey identified an association between mental and physical health conditions. Major physical conditions affecting people with mental health conditions include [105-106]:

Outcomes of the health needs analysis – Primary Mental Health Care: *Mental Health*

	<p>among people with mental health conditions.</p> <p>The highest prevailing chronic conditions in order are:</p> <ul style="list-style-type: none"> • COPD • Asthma • Back problems • Diabetes • Cancer • Circulatory diseases 	<p>Circulatory diseases: People with mental health conditions were much more likely to have circulatory system diseases compared to the general population. Males with mental health conditions were 52% more likely and females with mental health conditions were 41% more likely to report having a circulatory system disease.</p> <p>Diabetes: Males with mental health conditions were 74% more likely to report having diabetes and females with mental health conditions 46% more likely to report having diabetes compared to the general population. Research has also identified that metabolic side effects of many psychoactive medications may contribute to higher rates of obesity and diabetes among people with mental health conditions.</p> <p>Asthma: Males with mental health conditions were 49% more likely to report having asthma, while women with mental health conditions were 70% more likely to report having asthma compared to the general population.</p> <p>Back problems: Males with mental health conditions were 74% more likely to report having back pain, while women with mental health conditions were 68% more likely to report having back pain compared to the general population. It is noted that the relationship between pain and mental health conditions may be bidirectional; pain is potentially linked to poorer mental health, and poor mental health increasing vulnerability to pain.</p> <p>Arthritis: Males with mental health conditions were 66% more likely to report having arthritis, while women with mental health conditions were 46% more likely to report having arthritis compared to the general population. Similarly to back pain, it is noted that the relationship between arthritis and mental health conditions may be bidirectional.</p> <p>Chronic obstructive pulmonary disease (COPD): Males with mental health conditions were 158% more likely to report having COPD, while women with mental health conditions were 96% more likely to report having COPD compared to the general population. It is noted that in 2011, three quarters (75%) of the COPD burden was attributable to tobacco use.</p> <p>Cancer: Males with mental health conditions were 82% more likely to report having cancer, while women with mental health conditions were 20% more likely to report having cancer compared to the general population.</p> <p>Reduced quality of life: Overall, mental health conditions are associated with higher individual-level disability than any of the commonly occurring physical health conditions, and comorbid mental and physical health conditions can exacerbate functional disability and quality of life.</p>
	<p>Higher prevalence of behavioural and biomedical risk factors for chronic physical health conditions among persons with mental health conditions, including:</p> <ul style="list-style-type: none"> • Smoking • Obesity • Alcohol 	<p>The prevalence of known behavioural and biomedical risk factors for chronic physical health multi-morbidities among people with mental health conditions are also known to be higher compared to the general Australian population [105]. These include:</p> <p>Smoking: People reporting mental health conditions are 54% more likely to smoke than the general population. Groups with mental health conditions found to have the highest smoking rates include persons with psychosis / severe mental illness, Aboriginal and Torres Strait Islander people and patients accessing psychiatric inpatient services.</p> <p>Alcohol: People reporting mental health conditions are 12.5% more likely to report risky drinking (average alcohol consumption of more than two standard drinks per day over the past year).</p> <p>Physical inactivity: People with mental health conditions are 9.5% more likely to not meet physical activity guidelines than the general population (meaning no or little exercise for fitness, recreation, sport or walking for transport in the last week).</p>

Outcomes of the health needs analysis – Primary Mental Health Care: *Mental Health*

	<ul style="list-style-type: none"> • High cholesterol • Physical inactivity 	<p>Obesity: People with mental health conditions are 16% more likely to be obese than the general population.</p> <p>High cholesterol: People with mental health conditions are 16% more likely to have high cholesterol than the general population.</p> <p>A significant proportion of the chronic disease burden could be prevented or better managed by addressing these risk factors.</p>																														
Mental Health Hospitalisations	<p>Highest rate of hospitalisations for mental health disorders in NBMPHN (9,390 total or 2,486 per 100,000 persons) compared to 10 NSW PHN regions (NSW, 1,894 per 100,000 persons).</p>	<p>In 2016-17, there were 9,390 hospitalisations among NBM residents with mental disorders [107]. The NBM hospitalisation rate for mental health disorders (2,486 per 100,000 persons) was the highest in the state among NSW PHN regions (NSW, 1,894 per 100,000 persons).</p>																														
	<p>Highest rates of mental health-related hospitalisations in the NBM region for drug and alcohol episodes, and anxiety and stress episodes.</p> <p>Highest rate of bed days for mental health-related hospitalisations in the NBM region for schizophrenia and delusional disorders and depressive episodes with Blue Mountains LGA having the highest number of hospitalisations but Penrith LGA having the longest length of stay</p>	<p>In 2015-16 within Nepean Blue Mountains, hospitalisations for mental health conditions in both public and private hospitals were highest for drug and alcohol episodes, followed by anxiety and stress episodes [108]. The rate of bed days per 10,000 people for mental health condition hospitalisations however were highest for schizophrenia and delusional disorders, followed by depressive episodes. Across NBM SA3 areas, Blue Mountains has the highest hospitalisation rate for all mental health conditions, followed by St Marys and Penrith.</p> <p>Table 11: Hospitalisations for mental health for NBM residents by mental health conditions, 2015-16 [108]</p> <table border="1"> <thead> <tr> <th>Mental health conditions</th> <th>Hospitalisations per 10,000 people (age-standardised)</th> <th>Bed days per 10,000 people (age-standardised)</th> <th>Number of hospitalisations</th> <th>Number of bed days</th> </tr> </thead> <tbody> <tr> <td>Anxiety and stress episodes</td> <td>21</td> <td>185</td> <td>748</td> <td>6,757</td> </tr> <tr> <td>Bipolar and mood disorders</td> <td>8</td> <td>146</td> <td>304</td> <td>5,338</td> </tr> <tr> <td>Depressive episodes</td> <td>16</td> <td>248</td> <td>581</td> <td>9,166</td> </tr> <tr> <td>Drug and alcohol episodes</td> <td>28</td> <td>216</td> <td>969</td> <td>7,636</td> </tr> <tr> <td>Dementia</td> <td>5</td> <td>74</td> <td>199</td> <td>2,734</td> </tr> </tbody> </table>	Mental health conditions	Hospitalisations per 10,000 people (age-standardised)	Bed days per 10,000 people (age-standardised)	Number of hospitalisations	Number of bed days	Anxiety and stress episodes	21	185	748	6,757	Bipolar and mood disorders	8	146	304	5,338	Depressive episodes	16	248	581	9,166	Drug and alcohol episodes	28	216	969	7,636	Dementia	5	74	199	2,734
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Schizophrenia and delusional disorders	16	453	554	16,079
Intentional self-harm	15	86	519	3,046

Table 12: Hospitalisations for all mental health conditions for NBM residents, by SA3, NBMPHN and National, 2015-16 [108]

Mental health conditions	Hospitalisations per 10,000 people (age-standardised)	Bed days per 10,000 people (age-standardised)	Number of hospitalisations	Number of bed days
Blue Mountains	143	1,951	1,038	14,595
Hawkesbury	106	1,305	251	3,198
Lithgow-Mudgee	106	1,346	468	6,299
Penrith	107	1,481	1,470	20,217
Richmond-Windsor	104	1,392	391	5,225
St Marys	112	1,411	617	7,711
NBMPHN	116	1,524	4,123	54,775
National	102	1,401	N/A	N/A

Mental health burden in Aboriginal and Torres Strait Islander Population	High prevalence of long-term mental health conditions among Aboriginal and Torres Strait Islander people	The <i>National Aboriginal and Torres Strait Islander Social Survey 2014-15</i> [108] indicates that 29.3% of Aboriginal and Torres Strait Islander people aged 15 years and over have a long-term mental health condition. This is approximately more than twice the age-standardised rate of long-term mental health conditions estimated for the total population living in NBM LGAs (range from 12.3 to 14.9 per 100 persons).
	Aboriginal and Torres Strait Islander people experience <i>high or very high</i> psychological distress between 2.6 and 3.0 times	The <i>National Aboriginal and Torres Strait Islander Social Survey 2014-15</i> [108] indicates that 32.8% of Aboriginal and Torres Strait Islander people have <i>high or very high</i> levels of psychological distress. After adjusting for differences in the age-structure of populations, Indigenous adults were 2.6 times more likely to experience high or very high psychological distress compared to non-Indigenous adults.

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	<p>the rate compared to the general population. Higher prevalence of high or very high psychological distress in Aboriginal adults is attributable to greater physical morbidity and disability</p>	<p>Research using the Sax Institute’s 45 and Up Study cohort of NSW middle aged and older residents found that while high psychological distress was around three times higher among Aboriginal compared to non-Aboriginal participants, the major risk factors for distress – poorer health (multi-morbidity, physical disability and functional limitations), lower social support and lower socioeconomic status were similar in both groups. Differences in distress prevalence were accounted for by differences in physical morbidity and disability [109]. This is the first study in Australia showing that differences in the prevalence of psychological distress among Aboriginal people is attributable to greater physical ill health, combined with lower social support and lower socio-economic status. The authors conclude that greater attention is needed on primary prevention of the primary causes of physical morbidity, including improved screening for psychological distress and improved integration of social and emotional wellbeing in primary care and chronic disease management.</p>
<p>Aboriginal People And Service Accessibility</p>	<p>A low proportion of Aboriginal and Torres Strait Islander people access Medicare psychological and psychiatric services, but access a higher proportion of Access to Allied Psychological Services program services</p>	<p>Based on MBS services claimed across Australia, Indigenous Australians were less likely than non-Indigenous Australians in 2015-16 to have claimed through Medicare for psychologist care (133 compared with 200 per 1,000) or psychiatric care (52 compared with 97 per 1,000) [111].</p> <p>In comparison, Indigenous Australians across Australia utilised the Access to Allied Psychological Services program at 3.5 times the rate of non-Indigenous Australians in 2015-16, had mental health related problems managed by GPs at 1.2 times the rate compared to non-Indigenous Australians between 2010 and 2015, and accessed specialised community mental health services at 4 times the rate of contacts compared to non-Indigenous Australians in 2014-15. These findings indicate that Indigenous Australians are accessing primary care level mental health services more readily than specialist services, in comparison to non-Indigenous Australians.</p>
<p>Aboriginal People Hospitalisation</p>	<p>The proportion of Aboriginal people hospitalised for mental health conditions is high relative to non-Indigenous Australians.</p> <p>There is a strong reluctance among Aboriginal people to access hospital-based mental health care services involving psychiatric care.</p>	<p>Between July 2013 and June 2015, mental health related conditions were the principle reason for hospitalisations, excluding dialysis, for Indigenous Australians [111]. Hospitalisations for mental health-related conditions were 2.1 times higher for Indigenous males compared with non-Indigenous males and 1.5 times higher for Indigenous females compared with non-Indigenous females.</p> <p>Between July 2013 and June 2015, hospitalisations for ambulatory community mental health care services were 0.3 times as high for Indigenous Australians than for non-Indigenous Australians when involving specialised psychiatric care; however were 3 times the rate when without specialised psychiatric care. Hospitalisations for admitted patient mental health care were twice as high for Indigenous Australians than for non-Indigenous Australians when with specialised psychiatric care, and were 3.2 times as high for non-Indigenous Australians when without specialised psychiatric care.</p> <p>These findings indicate a strong reluctance by Aboriginal people to access hospital-based mental health care services involving psychiatric care.</p>

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Mental health burden in CALD communities	Significant presence of mental health issues within CALD communities in the NBM region.	The Breaking Barriers Bringing Understanding (3BU) project [112] studied the mental health perspectives of CALD communities the NBM region and reported a significant presence of mental health issues in the participant CALD Communities. Depression and anxiety were the most common mental health issues related to migration and resettlement experiences. Other contributing causes of mental health issues included low socio-economic status, migration, pre-migration (including traumatic events) and post-migration (financial stresses, unemployment, isolation, language barriers, family breakdown and acculturation).
	Mental health issues are common amongst local Syrian refugee intake.	Focus group discussions held with local Syrian refugee communities highlight common mental health issues experienced among this group include: sleeplessness, trauma, anxiety, depression, loneliness, isolation and other psychological issues affecting wellbeing [50].
Poor mental health among LGBTI population	Higher rates of poor mental health among LGBTI population.	<p>Research indicates that LGBTI people in Australia experience disproportionately poorer mental health compared to their non-LGBTI peers, in particular [88]:</p> <ul style="list-style-type: none"> • 24.4% of lesbian, gay and bisexual people and 36.2% of trans people experienced a major depressive episode in 2005, compared with 6.8% of the general population. • Lesbian, gay and bisexual people are twice as likely to have a high/very high level of psychological distress (18.2% v. 9.2%). • Greater disparity in poorer mental health for young age groups: 55% of LGBTI women aged 16-24 years compared with 18%, and 40% of LGBTI men aged 16-24 years compared with 7% experience mental health problems. • More than twice as many homosexual/bisexual Australians experience anxiety disorders as heterosexual people (31% vs 14%) and over three times as many experience affective disorders (19% vs 6%). • Rates of depression, anxiety and poor mental health in general are highest among trans and bisexual people. <p>Key causal factors contributing to such elevated risk of poor mental health among LGBTI people include: exposure to and fear of discrimination, exclusion and social isolation within families and broader society. As such LGBTI people are a marginalised group in Australia.</p>
Service Integration Prison Population Post Release	Correctional facilities in the NBM region.	4 of the 40 NSW correctional centres and 3 community corrections offices are located in the NBM region [113].
Mental health burden among homeless populations	More than 1,800 people living in the NBM region in 2017 are estimated to be homeless and of these, more than 25% (481	According to estimates of homelessness in Australia from the 2016 Census [114], there were 116,427 people who were homeless at the time of the 2016 Census, at a rate of 50 people for every 10,000. The AIHW Report <i>Australia's Welfare 2017</i> [115] also identifies that 25.9% of all clients accessing specialist homelessness services in Australia had a current mental health issue. Applying these proportions to the NBMPHN, the estimated numbers of people who were both homeless and experiencing mental illness in 2017 would be as follows:

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	<p>persons) experience a current mental health issue.</p>	<ul style="list-style-type: none"> • NBMPHN: 1,858 homeless (481 with mental illness) comprising: <ul style="list-style-type: none"> ○ Blue Mountains: 394 homeless (102 with mental illness) ○ Hawkesbury: 332 homeless (86 with mental illness) ○ Lithgow: 108 homeless (28 with mental illness) ○ Penrith: 1,024 homeless (265 with mental illness)
	<p>Significant negative impacts of homelessness upon health, mental health and mental health service use among homeless people in the NBM region.</p>	<p>A local cross-sectoral and multi-agency partnership project conducted within the Penrith, Blue Mountains and Hawkesbury LGA communities in 2016-17 identified persons experiencing homelessness and key issues faced by those persons, which are impacted and exacerbated by homelessness [116]. These include:</p> <ul style="list-style-type: none"> • Dental health: 60% of persons interviewed reported having dental problems • Respiratory health: 45% of persons interviewed reported having asthma and 12% had emphysema • Mental health service use: <ul style="list-style-type: none"> ○ 64% of persons reported they have had some type of interaction with the mental health system ○ 20% reported having been taken to hospital against their will ○ 29% reported they had presented to the emergency department for a mental health concern ○ 59% had spoken to a mental health professional in the last six months.

Psychosocial support for people with severe mental illness: (*National Psychosocial Support measure*)

<p>Social Isolation</p>	<p>Social and geographical isolation is major factor excluding NBM consumers from community participation and is a key issue in particular during periods of poor mental health.</p>	<p>Data sources and recent community consultations have indicated the following specific issues relating to social isolation and community participation [18, 273-277]:</p> <ul style="list-style-type: none"> • 21% lone person households in the Nepean Blue Mountains region • Stigma around mental health was reported amongst consumers as a major factor excluding them from participation in social groups • Modelling on transport apps and anecdotal feedback identifies the Nepean Blue Mountains geography as a socially isolating factor [3]. Transport options are limited and infrequent and many mental health services, creative interest groups and social activities are located in the Penrith hub. An example of such service is Westclub which is now only available to NDIS participants or people in the closed programs CoS and NPS2. Consumers across all four LGAs consistently reported a lack of regional peer support groups and fun activities for people with lived experience of mental health particularly between the ages of 25 to 65. • Connection to family, friends, religion, culture all help on the recovery journey but become difficult during periods of poor mental health
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		<ul style="list-style-type: none"> Higher than national average prevalence of empty nesters and retirees aged 60 -69 years (11.1% vs. 10.6%) and a trend towards an ageing population particularly in the Blue Mountains and Lithgow LGAs. Amongst the 65 + age group there is an estimated 1527 people that fall within the NPS target cohort.
<p>Funding impact on service capacity</p>	<p>Of the estimated 9,786 individuals in the NBM region with a severe/not complex disorder (the intended target population for the NPS measure), only 46 people can access the NPS service</p> <p>The NPS service model is restricted due to the limited funding in NBM</p> <ul style="list-style-type: none"> - Caseload capacity and service duration - People with severe, persistent and complex needs - Service model limited in resources for majority one-to-one consultation - Access to funding flexibility 	<ul style="list-style-type: none"> Current National Psychosocial Support (NPS) service model, based on funding, is limited to 46 participants for the entire NBM region. There is currently a waiting list of 19 to access NPS. This compares to an estimated 9,786 individuals in the NBM region with severe/not complex disorders who are the intended target population for the National Psychosocial Support Measure [103, 167]. 6 months program time being identified as insufficient with Provider and participants reporting ‘up to two years’ as the suitable timeframe for support <p><i>“A period of up to 2 years gives the participant the best opportunity to cover the 4 phases of the recovery process. An initial assessing period is necessary to identify strengths, barriers and emotional distress. Then a period where the relationship between worker and client is built on trust, accountability and consistency. The third phase is in relation of actions to be taken to achieve identified goals to empower the client to building on what recovery means for them. The fourth phase is the exit period where a person has built up enough capacity and confidence to go ahead with life” NPS Service Provider</i></p> <p><i>“We are seeing clients exited because they have been in the program for 6 month or achieved basic goals then being re-referred” NPS Support Worker</i></p> <ul style="list-style-type: none"> People with severe, persistent and complex needs access this service regardless of the guidance for just severe. This cohort is often finds difficulty proving permanency of reduced functional capacity for the NDIS. Borderline Personality Disorder and dual diagnosis were specifically identified by the NPS Provider as existing conditions that add persistence and complexity of the participants needs. Lack of support coordination - the NPS service model is limited in how much support coordination can be provided. Participants report a preferred service model of one-to-one care, with an ongoing dedicated support coordinator. Loss of flexible funding– Providers have reported difficulties due to the loss of discretionary funding that was previously available via previously programs for ad hoc services. This funding was utilised when there was no service to meet the need, long waiting time to meet the need, a gap payment to meet the need or for transport to access the service. The loss of the provision of flexible funding has resulted in these needs no longer being met. <p><i>“Lack of flexible funding for assessments” listed as significant barrier on TRIS reports by NPS2 Extended Providers</i></p>

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<p>NDIS Transition</p>	<p>NDIS transition is impacted by :</p> <ul style="list-style-type: none"> • Navigating to the most appropriate and best supports for people requiring psychosocial assistance. • Adjusting to the evolving requirements of psychosocial disability in the NDIS. 	<ul style="list-style-type: none"> • Lack of services to assist with the preparation of NDIS Access Requests – NPS service model does not have the provision for gathering evidence and preparing an Access Request. Providers have reported this process to take approx. 23 hours and requires specialist knowledge and experience lodging requests for psychosocial disability. The episodic nature of psychosocial disability continues to be a difficulty when proving permanency of disability. • NDIS Access Request wait times – once an application is lodged the time taken to determine eligibility can range from 2 weeks to 6 months. At this stage it would seem 3 to 4 months is the average wait time. Providers report the challenge of supporting these participants with the current limited funding, noting that often there are severe and persistent mental health conditions that are better supported by the NDIS that need to be supported as they await their outcome, and then plan activation. • Delays in the review process for NDIS – a request for review of ineligibility decision is taking more than 6 months. • Disengaged participants that could potentially fall through the gaps – the National Psychosocial Support Extended (NPS2) cohort (previously PIR, D2DL and PHaMs who are yet to test for NDIS eligibility provided with 12 months of support to lodge an Access Request) currently has 15-20% of participants that cannot be reached. The reasons of this may include hospitalisation, homelessness, episodic nature of illness or fear and confusion after the closure of Commonwealth funded programs and avoidance of the NDIS. The exact reasons are difficult to clarify given the uncontactable nature of the cohort.
<p>Mental Health Literacy and system navigation knowledge</p>	<p>Poor mental health literacy, poor knowledge of local psychosocial services available and how to navigate mental health service system by consumers is reported consistently across NBMPHN.</p>	<p>Broad consultation flagged a regional theme of mental health literacy and a deficit in knowledge of how to navigate the mental health service system [275, 278-280]. Consumers reported they are not able to find psychosocial support when they need it. The mental health service sector surveys revealed very poor knowledge of psychosocial services available in the region. In particular the recent changes to the psychosocial space in regards to the NDIS, and cessation of commonwealth funded programs has caused greater confusion. WHL has been developing referral pathways to manage psychosocial support throughout the region. Education is underway but the need for greater understanding of referral pathways such as HASI, CLS and NPS, and the entry criteria for each is ongoing.</p> <p>Synthesis of the data identified the priority groups for focus on improving mental health literacy:</p> <ul style="list-style-type: none"> - Consumers - General Practitioners - Human Services Sector - CMO Sector - Community and social groups - Target populations listed below in detail
<p>Aboriginal and Torres Strait Islander Communities</p>	<p>Lack of dedicated Aboriginal mental health clinicians and targeted psychosocial</p>	<p>Data sources and recent community consultations have indicated the following issues relating to psychosocial needs among Aboriginal and Torres Strait Islander communities in the NBM region [170, 275, 281-284]:</p> <ul style="list-style-type: none"> • 6 Aboriginal and Torres Strait Islander identified participants have received support through NPS.

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	<p>programs for Aboriginal and Torres Strait Islander communities impact negatively on engagement with regional mental health services.</p>	<ul style="list-style-type: none"> • 3.7% or 13,955 people in NBM identify as Aboriginal and Torres Strait Islander – significantly higher than the Greater Sydney numbers of 1.5%. • Overrepresentation in mental health statistics: 32.8% of Indigenous adults have high or very high levels of psychological distress, at 2.6 times the rate compared to non-Indigenous adults. • Regional clinical context flags a lack of Aboriginal workforce – there is currently only one Aboriginal identified LHD mental health clinician and no longer a targeted psychosocial program for Aboriginal and Torres Strait Islander populations. Research cites lack of culturally validated models of mental health care and this is evidenced in the low rates of engagement with mainstream youth and adult mental health services in the area. • Qualitative feedback flags a social housing deficit and low referral rates into HASI programs.
<p>CALD Communities</p>	<p>There is an identified need for different avenues which promote access to mental health promotion, psychosocial groups and appropriate referral pathways in the NBM region across CALD community groups.</p>	<p>The following issues relating to psychosocial needs among CALD communities in the NBM region have been identified [18, 284-288] :</p> <ul style="list-style-type: none"> • 11.8% or 44,508 of people living in the Nepean Blue Mountains speak a language other than English at home. This number increased by 25.5% in the last census and there are specific emerging groups in the region, including Mandarin-speaking, Punjabi-speaking, Filipino/Tagalog-speaking, Arabic-speaking, and Hindi-speaking people. • Regional Clinical Context: <ul style="list-style-type: none"> - Lack of bilingual, culturally safe mental health services in the Nepean Blue Mountains. Anecdotally service providers report that people travel out of area to find an appropriate service. - Lack of bilingual GPs and mental health care professionals in the region. GP mental health treatment plans are necessary for Psychological Therapy Service referrals – this excludes many people in need from CALD communities from primary care mental health treatment. Young people from these communities do not present in large numbers to headspace Penrith. Statistics and qualitative feedback show these communities present at the Triage and Assessment Centre (TAC) at Nepean Hospital. - Limited use of interpreters in Primary Care settings. <p>Considering the above limitations to clinical care in the CALD communities, psychosocial needs assessment raised the following gaps:</p> <ul style="list-style-type: none"> • Access to gatekeeper mental health training to improve recognition, management and knowledge of referral pathways across CALD community groups • Support for carers with different world views and consumer self-stigma around mental illness • Mental health promotion and advertising of psychosocial groups via different channels such as community radio for CALD populations with low English literacy and literacy in their first language.
<p>Homeless Populations</p>	<p>Persons with housing instability experience difficulties with NDIS applications, making this</p>	<p>The following issues relating to psychosocial needs among homeless populations in the NBM region have been identified [18, 275, 289-291]:</p> <ul style="list-style-type: none"> • An estimated 1,901 people estimated homeless in the region according to 2016 census data for NSW. • Only 7% of homelessness service providers in the region have contact with mental health services. • Particular vulnerabilities and national prevalence of mental illness and homelessness correlation amongst young people transitioning from state care systems.

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	<p>group likely to be eligible for the NPS.</p> <p>High prevalence of mental illness and comorbid physical health conditions among homeless persons, and poor engagement with mainstream services.</p> <p>Poor engagement between homelessness and mental health services in the NBM region.</p> <p>Potential poor capacity among homeless sector services to respond to client mental health needs due to lack of mental health first aid training.</p>	<ul style="list-style-type: none"> • Research indicates 75% of homeless populations have at least one mental illness compared to 20% in the general population. • Correlation and psychosocial causation are intertwined and difficult to unpick in this cohort as there are not enough data sets, but housing instability can make NDIS applications difficult and therefore this cohort a likely candidate for NPS. <p><i>“This included teething problems with the NDIS not adequately addressing psychosocial problems, criteria that discourages preventative mental health care, the lack of collaboration between mental health and drug and alcohol services, and the overall lack of mental health facilities and Housing and Support Initiative (HASI) packages in the Penrith region”</i> (Heading home. Wentworth Housing)</p> <ul style="list-style-type: none"> • Lack of stable housing and rough sleeping exacerbates comorbid physical health conditions (a specific recommendation for collaboration in the PHI report) • Mental health consumers experiencing housing problems reported lack of engagement with mainstream services due to stigma and shame • Lack of mental health first aid training within homeless sector services as many are operated on minimal budgets and volunteer staff.
<p>Comorbid mental health AOD and Physical health conditions</p>	<p>High prevalence of co-morbid mental health, AOD and physical health conditions among the NPS cohort.</p>	<p>Consultations and evidence indicate a high prevalence of co-morbid mental health, AOD and physical health conditions among the NPS cohort. Specific issues include [1, 292]:</p> <ul style="list-style-type: none"> • Access to mental health friendly GPs also an issue for this cohort but has particularly negative implications for people with comorbid physical health issues • GP interviews revealed financial constraints and lack of multidisciplinary case conferences to deal with co-morbidities • Lack of communication feedback loops with GP and primary care generally post discharge from acute mental health admissions were cited as a reason for deteriorating mental health and re-presentation to acute settings • Mental Health and Substance use disorders are the third largest cause of total disease burden in Australia and the leading cause of non-fatal disease burden. • In Aboriginal and Torres Strait Islander populations comorbid mental health and substance use is the leading total disease burden. Aboriginal consumer feedback also identified a lack of medical specialists who bulk bill leading to physical health complications • Local Drug Action Team consultations reiterate themes of social isolation leading to comorbid mental health and AOD issues

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<p>Employment and Volunteering opportunities</p>	<p>There is a lack of volunteering opportunities in the NBM region which would significantly benefit people with a lived experience to increase social and economic benefits, life skills and connection to community.</p> <p>Identified need for mental health awareness training among local employers and volunteer organisations in the NBM region.</p>	<p>Consumer consultations and available research highlight the need for improved opportunities among potentially eligible NPS participants to participate in volunteering opportunities [18, 275, 293-295].</p> <p>Specific views and concerns expressed include:</p> <ul style="list-style-type: none"> • Consumers expressed a desire to volunteer (when able to) and give back to the community rather than be perceived as a burden. Numerous studies support the benefits of volunteering amongst people with lived experience of mental health to increase social and economic participation • 17.2% of the total Nepean Blue Mountains population report performing voluntary work. However, feedback from mental health consumers is that there is a lack of volunteering opportunities for them to enable the development of employment and life skills and to provide connection to community. <p>Qualitative data indicated that employers and volunteer organisations need education about mental health and how to make their workplaces and organisations more inclusive.</p>
<p>Psychosocial support for people with severe mental illness: (<i>Continuity of Support</i>)</p>		
<p>It is important to note that the participants of Continuity of Support have similar if not identical needs as the National Psychosocial Support measure (NPS) cohort. The only separation of this collective group of individuals with similar needs, is the stipulated program entry and service model requirements. Unlike NPS, Continuity of Support requires;</p> <ol style="list-style-type: none"> 1. Participants to have been in Commonwealth programs (PIR, D2DL or PHaMs) as of the 30 June 2019 and found ineligible for the NDIS; and 2. A service model that focuses on socially-based, capacity building group activities 		
<p>Need for targeted individual support as per previous support provided by Commonwealth Funded programs</p>	<p>Service model guidelines refer to group psychosocial support activities with additional targeted individual support just at times of increased needs.</p>	<p>Participants of PIR, D2DL and PHaMs expressed concern over the changes to service provided post 30 June 2019. All current providers of these programs were commissioned via direct approach to ensure the continuity of care for this cohort. CoS service model aims for service delivery to include socially-based, capacity building group activities has been challenging.</p> <p>Support workers and clients report the ongoing need for more individualised support. Whilst group work is considered useful, the majority of participants reported a need of 2+ hours per week of one-on-one support. This support is needed for;</p> <ul style="list-style-type: none"> - day to day living skills which may be specific to each individual - financial management and budgeting - finding and maintaining a home - vocational skills and goals - maintaining physical wellbeing, including exercise and - building broader life skills including confidence and resilience

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		Whereas socially-based, capacity building group activities are seen as complementary to care, participants reported one-on-one support as the primary need for service delivery; <i>“There has been a push back from clients who are now having access mainly through group activities. For them this is not seen as continuity of support, it is being viewed as a new support program. As a result, we have had very little engagement via groups” NBM CoS Provider</i>
Flexible Funding	Provision of access to funding for miscellaneous client needs	Previous programs had the provision to a limited amount of flexible funding which could be used to purchase services and appropriate supports when participant’s needs were identified but are not immediately able to meet through normal channels. There is now no means to fund ad hoc support that is integral to stabilising a client during periods of exacerbation. For example; <ul style="list-style-type: none"> - Access to private medical services where immediate need is identified and public services are unavailable due to demand, such as drug/alcohol treatment and rehabilitation and psychiatric services; - Purchase of medications while any issues regarding access to a health care card are being resolved; - Bond to secure a rental property and rent on short-term basis <i>“Barriers include limited clinical support available for people wanting to reapply for NDIS eg, people being supported may not be financially able to access clinical supports who would be able to provide further evidence/reports required to reapply for NDIS. Flexible Funding previously allowed for people who required this assistance however flexible funding is no longer available under the new arrangements” NBM CoS Provider</i>
Cohort need for ongoing, long term responsive support	Client’s episodic nature of mental health difficulties requires long term, responsive support	Although this cohort has been found ineligible for the NDIS many still live with periods of severe mental illness that, whilst difficult to prove permanency as lifelong, can reoccur with triggers, are episodic and /or cyclic. Due to this, clients have reported a need to access psychosocial support at different intensities over long periods of time. When surveyed on ‘how long do you feel you would need this service’ the majority of clients stated 2 + years.
Transport as a barrier to accessing psychosocial support	Develop more mobile models of care, Increased equity of support across all four LGAs.	Previous programs had greater provision for one-on-one support provided in the client’s home or transportation by Service Provider. Due to the group work focus of CoS, there is an increased need for transportation to service locations, yet a reduced capability to provide transport due to reduced funding and program guidelines.
Re-testing for the NDIS	Navigating the appropriate and best supports for people requiring	The ‘Tracking transitions of people from PIR, PHaMs and D2DL into the NDIS Commonwealth Mental Health Programs Monitoring Project’ report by Community Mental Health Australia and Sydney University, found that of all people assessed as ineligible to access the NDIS, more than half did not appeal or re-apply. From July 2016 to June 2019, Nepean Blue Mountains PIR program has

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	<p>psychosocial assistance. Adjusting to the evolving requirements of psychosocial disability in the NDIS and re testing eligibility if circumstances change.</p> <p>NDIS re-testing exacerbating symptomology</p>	<p>submitted 267 NDIS Access Requests with 54 ineligibility outcomes. It is important to note the many changes have occurred since these particular request were prepared, submitted and found ineligible. The NDIA have streamlined processes, provided additional training internally and externally and continue to clarify and adapt psychosocial needs onto scheme. It is for these reasons and due to the possible changes in personal circumstance, that the current CoS participants with severe and persistent mental health issues are encouraged to reapply. But the majority do not wish to reapply due to;</p> <ul style="list-style-type: none"> - Being fearful of going through the application process again (<i>"It's all too hard"</i>), - Their mental health is too poor or too unstable, - They are dealing with more urgent priorities, and or - They have mistrust of the system that previously would not provide them with support. <p>Therefore there are a number of CoS participants with severe and complex mental illness requiring high levels of support.</p> <p>Lack of services to assist with the preparation of NDIS Access Requests – CoS service model is limited in the provision for gathering evidence and preparing a re-submission for NDIS Access. Providers have reported this process can take approx. 23 hours and requires specialist knowledge and experience lodging requests for psychosocial disability. The episodic nature of psychosocial disability continues to be a difficulty when proving permanency of disability.</p> <p>NDIS Access Request wait times – once an application is lodged the time taken to determine eligibility can range from 2 weeks to 6 months. At this stage it would seem 3 to 4 months is the average wait time. Providers report the challenge of adequately supporting these participants whilst awaiting an outcome result, noting that often there are severe and persistent mental health conditions that are better supported by the NDIS that need to be supported as they await their outcome, and then plan activation.</p> <p>Delays in the review process for NDIS – a request for review of ineligibility decision is taking more than 6 months.</p> <p>CoS participants reported an exacerbation of symptomology due to NDIS testing. Participants that had submitted multiple Access Requests reported fatigue with the process, and feelings of hopelessness and helplessness of not being validated for their condition.</p> <p>In group consultation the conversation kept reverting back to personal experiences with the NDIS Access Request process. A number of participants reported a feeling of inequality have been found ineligible when other people they know gained access. This topic raised a lot of emotion in the group. Comments were made such as;</p> <p><i>"I can't try again, they don't believe me"</i> <i>"What's the point, they knocked me back"</i> <i>"I don't want to be pestered to re-test, I'm done with that"</i></p>
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Alcohol and Other Drugs

SUBSTANCE USE (POPULATION PREVALENCE AND RISK FACTORS)

Outcomes of the health needs analysis – Alcohol and Other Drugs: Substance Use (<i>Population prevalence and risk factors</i>)		
Identified Need	Key Issue	Description of Evidence
Increasing demand for AOD services	Increase in the use of crystal methamphetamine	<p>NBMPHN analysis: Australian estimates indicate [188-189]</p> <ul style="list-style-type: none"> • While there was a decline in recent methamphetamine use between 2013 to 2006, population use of crystal methamphetamine (ice) continued to be stable at around 2.1% of persons. • Use of ice is the main preferred form of methamphetamine replacing powder since 2010. The use of powder fell from 51% in 2010 to 29% in 2013, and further to 20% in 2016. At the same time the use of ice increased more than twofold from 22% in 2010 to 50% in 2013 survey, and to 57% in 2016. Overall, recent ice use increased across the population from 2010 to 2016, from 0.4% to 0.8%. • Those using meth/amphetamine, particularly crystal/ice, are doing so with increased frequency. Between 2010 and 2016: <ul style="list-style-type: none"> ○ Daily and weekly use of meth/amphetamines more than doubled, from 9.3% to 20% ○ Daily and weekly use among people who reported mainly using crystal/ice was even higher in 2016, increasing from 12.4% in 2010 to 25% in 2013 and to 32% in 2016. <p>NBMPHN analysis: NSW state estimates indicate [190, 215]</p> <ul style="list-style-type: none"> • In NSW, crystal methamphetamine represented the greatest rise in the ‘drug of choice’ among a population sample of people who inject drugs, doubling from 13% to 26% between 2015 and 2017. • The median days of use among this sample who had used some form of methamphetamine was 48 days for crystal methamphetamine use. Availability of Crystal was regarded as very easy by 57% of participants. • Methamphetamine use is not uniformly distributed across the NSW population. In 2017-18, 31% of people entering NSW correctional centres reported recent use of methamphetamine. • Among people who reported recent use of methamphetamine, an increasing proportion reported frequent use, with injection increasingly the method of use and the high purity crystal form (‘ice’) the form most commonly used. <p>NBMPHN Internal analysis: local data [194]:</p>

		<ul style="list-style-type: none"> Amphetamines represented the <i>second highest</i> reason for seeking treatment / primary drug of concern after alcohol, among persons attending NBM NGOs providing publicly funded treatment services for substance use in 2017-18. This represented 25.2% of NBM clients who received treatment for their own drug use (up from 24.7% in 2016-17). <p>Local stakeholder consultation 2017 [191]:</p> <ul style="list-style-type: none"> Reported that increasing methamphetamine use was one of two key changes in the client population seeking treatment for AOD substance use over the twelve month period to November 2017. The other was heroin use along with illicit fentanyl use. Ice (methamphetamine) use was regarded as the second highest used drug after alcohol for clients seeking treatment for AOD substance use in the NBM region. 																		
	<p>Increase in hospitalisations related to methamphetamine use over the previous 5-years, with consistently higher rates than NSW</p>	<p>NBM hospitalisations related to methamphetamine have increased considerably since 2012-13 from a rate of 25.6 per 100,000 population to 99.4 in 2014-15 and 142.8 in 2016-17. This rate was higher than the NSW state in 2016-17 which was 136.3 [192].</p> <p>Figure 6: Methamphetamine-related hospitalisations, NBM and NSW, 2012-13 to 2016-17</p> <table border="1"> <caption>Data for Figure 6: Methamphetamine-related hospitalisations, NBM and NSW, 2012-13 to 2016-17</caption> <thead> <tr> <th>Year</th> <th>Nepean Blue Mountains</th> <th>NSW</th> </tr> </thead> <tbody> <tr> <td>2012-13</td> <td>25.6</td> <td>~35</td> </tr> <tr> <td>2013-14</td> <td>~50</td> <td>~45</td> </tr> <tr> <td>2014-15</td> <td>99.4</td> <td>~85</td> </tr> <tr> <td>2015-16</td> <td>~110</td> <td>~120</td> </tr> <tr> <td>2016-17</td> <td>142.8</td> <td>136.3</td> </tr> </tbody> </table>	Year	Nepean Blue Mountains	NSW	2012-13	25.6	~35	2013-14	~50	~45	2014-15	99.4	~85	2015-16	~110	~120	2016-17	142.8	136.3
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	<p>Polydrug use, including daily smoking, drinking alcohol at risky levels and use of illicit drugs is reported nationally. AOD clients with complex needs have become the norm</p>	<p>Estimates from the 2016 National Drug Strategy Household survey indicate [189]:</p> <ul style="list-style-type: none"> Just under 4 in 10 (39%) either smoked daily, drank alcohol at risky levels or used an illicit drug in the previous year. All three behaviours were reported for 2.8% of persons surveyed. Approximately half (49%) of daily smokers consumed alcohol at quantities regarded as risky. Daily smokers reported using an illicit drug at 36% in the previous year. Nearly 6 in 10 (58%) of persons who used illicit drugs also consumed alcohol at quantities regarded as risky, and 28% were daily smokers. The most commonly used illegal drugs in the past 12 months were cannabis (10%), cocaine (2.5%), and ecstasy (2.2%). More people in their 40s used illicit drugs in 2016 compared 2013 (increasing from 13.6% to 16.2%), particularly among males in their 40s. <p>NADA's 2013 submission to the NSW Parliament Legislative Council highlighted the increasing complexity of clients attending AOD treatment [193]. They reported that complex clients are now regarded as the norm and not the exceptional client.</p>																		

Alcohol use	High rates of high risk alcohol consumption	<p>Estimates from the 2016 National Drug Household Survey and Report of the Chief Health Officer NSW related to alcohol indicate [189, 193]:</p> <ul style="list-style-type: none"> • The survey lifetime risk of harm from alcohol use is 17.1%. • In 2016, alcohol was the second main drug of concern for the general community at 28.4%. • 1 in 7 (13%) of people in Australia reported they drank at risky levels on a weekly basis. • The top 10% of Australian heavy drinkers are responsible for over half of the national alcohol intake. • Men were more likely to drink alcohol daily in contrast to women surveyed. <p>NBMPHN analysis of other available data indicates [191, 194, 209, 214]:</p> <ul style="list-style-type: none"> • Alcohol use was the <i>highest</i> reason for seeking treatment / primary drug of concern among persons attending NBM NGOs providing publicly funded treatment services for substance use in 2017-18. This represented 35.7% of NBM clients who received treatment for their own drug use (compared to 33.8% nationally). • Local key stakeholders similarly identify alcohol as the most common primary drug of concern for people seeking treatment for AOD substance use in the NBM region. NBM NGO's also report an increase in alcohol use among persons seeking treatment. • Provider-reported data indicates alcohol was the highest (59.7%) principle drug of concern among women with a dual diagnosis in NBM seeking AOD treatment services in 2017-18. This was followed by methamphetamines (16.1%). • Alcohol attributable hospitalisations for the NBM PHN in 2017-18 were 574.2 per 100,000 population, similar to the rate for all NSW PHNs (584.0 per 100,000 population). • There were 81 alcohol attributable deaths in the NBM PHN area in 2016-17. This was equivalent to the fourth highest population rate among 10 NSW PHNs. <p>National data on the prevalence of chronic excessive alcohol consumption at general practice encounters indicate [195]:</p> <ul style="list-style-type: none"> • Prevalence is highest among men, persons aged 45-64 years, Aboriginal and Torres Strait Islander patients, and those from disadvantaged socioeconomic areas.
Pharmaceutical misuse	Increasing rates of pharmaceutical misuse	<p>NBMPHN analysis of available national and local data indicate [189, 196-197]:</p> <ul style="list-style-type: none"> • Almost 1 in 20 people (4.8%) misused a pharmaceutical in the previous 12 months to 2016, similar to 2013 (4.7%), however rising from 3.7% in 2007. • The proportion who had ever misused a pharmaceutical drug increased to 12.8% in 2016, up from 11.4% in 2013 and 7.4% in 2010. • Pharmaceuticals were the second most frequently misused illicit drugs in 2016, with 28% using daily or weekly. • The class of pharmaceuticals most commonly misused were pain-killers/analgesics and opioids (3.6%). Pain killers most commonly misused were primarily over-the-counter (OTC) products containing codeine (75% of users), followed by prescription codeine products such as Panedine Forte (40%) and Oxycodone (Endone, OxyContin at 39.6%).

		<ul style="list-style-type: none"> • People aged between 20-29 years and between 40-49 years were most likely to have misused pharmaceuticals in the previous 12 months, both at 5.7%. • NBMPHN consultations with local primary care providers indicate high prevalence of abuse of prescription medications.
Substance use among young people.	<p>High prevalence of problem substance use among young people.</p> <p>Young people in the NBM region are consistently reported to be under-serviced, have high needs in relation to AOD services and are increasingly presenting with greater (moderate to high) complexity to local AOD services.</p>	<p>NBMPHN analysis of available data indicates [189, 197, 209]:</p> <ul style="list-style-type: none"> • Fewer young people nationally appear to be engaging in risky drinking (the proportion of persons who consumed 5 or more drinks at least monthly decreased from 25% in 2013 to 18% in 2016y for 14-19 year olds, and declined from 41.7% in 2013 to 39.9% for 20-29 year olds. • However, alcohol consumption rates did not show changes between surveys and young people were the age group most likely to drink alcohol in risky quantities compared to all other age groups. • Despite comparative national household survey data indicating that substance use among 14-29 year olds may have declined between 2001 and 2016, ongoing consultations with regional stakeholders and commissioned service providers continue to indicate the high prevalence of problem substance use among young people. • Provider-reported data indicates the following principle drugs of concern among young people in NBM accessing AOD treatment services: Nicotine and other undeclared illicit substances (45%), cannabinoids (20%), alcohol (12%) and methamphetamine (6%). Note that Nicotine is believed to be chosen by high school students as the drug of choice to avoid mandatory school reporting of illicit substances. • Young people in the NBM region using methamphetamines report severity of dependence scores 1.5 times higher than the marker for psychological dependence. • Overall, young people in the NBM region are consistently reported to be under-serviced, have high needs in relation to AOD services and are increasingly presenting with greater (moderate to high) complexity to local AOD services. • 2018/2019 surveys and structured consultations with Blue Mountains young people indicate lower than average scores on resilience in certain locations and for 16-19 year olds. Key vulnerabilities were coping with stress; focusing under pressure and discouraged by failure. Young people reported experiences of bullying on social media and young people who identified as LGBTQI reported experiences of discrimination and social isolation [216, 217].
	Young people identified to be at higher risk of substance misuse	<p>Young people identified by stakeholders to be at a higher risk of substance misuse than others include [199]:</p> <ul style="list-style-type: none"> • Young people in out-of-home care • Lesbian, gay, bisexual, transgender, intersex and queer (LGBTIQ) young people • Young people who have survived abuse • Young people with anxiety, depression and mental illness • Young Aboriginal people • Young people from culturally and linguistically diverse communities • Young people who 'hang out' on the streets after hours • Young people who work in hospitality

		<ul style="list-style-type: none"> Provider reported data reported high proportions of young Aboriginal people at risk of dependency on substances associated with psychosocial issues.
	Young people in custody represent a high-risk group for high levels of alcohol and drug use	A history of illicit drug use is almost universal among young people in custody. 92.5% or more than nine out of ten young people in custody surveyed had used illicit drugs at some time in the past, and 81.5% had use illicit drugs weekly or more frequently in the 12 months prior to custody [200]. The main drug of concern was cannabis with 90% reporting having ever used cannabis. The rate of cannabis use was similar to that of nicotine and alcohol, making these the three substances most frequently ever used by young people in custody. Among the young people in custody who had used illicit drugs, 65.2% experienced consequent problems with their health, school, friends, parents or police.
Substance use presentations to general practice and community centres.	There is a general mistrust of authority figures by young people (including general practitioners, psychiatrists and counsellors) and unwillingness to present to primary care with AOD as a primary health concern	<p>Previous findings from focus group discussions with at-risk students (those typically from unstable family situations including violence and substance abuse, homeless or involved with juvenile justice) indicate [198]:</p> <ul style="list-style-type: none"> Unwillingness to seek help from authority figures such as general practitioners and police Expressed mistrust of psychiatrists and counsellors based on their own experiences Willingness to trust youth workers from a local youth centre Emphasized the interconnectedness of substance abuse with grief and trauma Related the onset of their substance dependence and that of family members to traumatic events including childhood sexual abuse, suicide of a family member, and the death of a child. Raised issues concerning intergenerational substance misuse in families and their predisposition to substance dependence. <p>In addition, a survey of 19 general practitioners and Neighbourhood Centre managers in the Blue Mountains LGA found [198]:</p> <ul style="list-style-type: none"> Only a small proportion of patients presented with AOD issues as their primary health concern although a significant proportion had an underlying problem with substance use. Alcohol was identified as the most prevalent problem substance GPs identified young people and people with dual diagnosis as the groups most in need of services. Centre managers identified young people as those most in need of AOD services. Substance use was prevalent among disadvantaged clients and their families. The groups identified as highest priority amongst service providers were women with children; young people, particularly those from disadvantaged families; people with dual diagnosis and Aboriginal people.
Priorities identified in Blue Mountains 2010 community consultations.	Community priorities for effective service provision for young people	<p>Community consultations in 2010 [198]:</p> <p>Young people identified the kind of services that were wanted or needed, including:</p> <ul style="list-style-type: none"> Flexible counselling to support attitude change over a longer term More GPs with skills and understanding of addiction issues Day centre offering support and activities

		<ul style="list-style-type: none"> • Crisis accommodation • Information about needle exchange programs • More community support for men • Case management • Exit strategies for people on methadone programs • Soft entry programs such as outreach • Education for prevention. • A mix of access was identified with location based services together with central telephone intake and referral, as well as effective website access to services.
	Highest proportion of drug related offences in Lithgow and Penrith LGAs	<p>NBMPHN analysis of available data indicates [14]:</p> <ul style="list-style-type: none"> • 1,541 drug related offences were recorded in 2018-19 within NBMPHN, out of which possession and / or use of illicit drugs accounted for the majority • Possession and/or use of cannabis related offenses were the predominant category • Rates of all categories and types of drug offenses were overall lower for all LGAs in the NBM region compared to the average for NSW. • Lithgow (524.0 per 100,000) and Penrith (474.5 per 100,000) LGAs had the highest proportion of drug offences for all categories of offences combined. <p>Estimates from the 2016 National Drug Strategy Household Survey indicate [189]:</p> <ul style="list-style-type: none"> • More people reported being a victim of an illicit drug-related incident in 2016, increasing from about 1.6 million in 2013 to 1.8 million in 2016
Characteristics of substance and drug users: local and national.	Prevalence of mental health and drug and alcohol diagnosis (dual diagnosis)	<p>NBMPHN analysis of available national and state data indicates [189-190]:</p> <ul style="list-style-type: none"> • There is a strong association between illicit drug use and mental health issues. • In the context of self-medication, it is difficult to isolate to what degree drug use causes mental health problems, or to what degree mental health problems give rise to drug use. • The rate of mental illness almost doubles with illicit drug use. Almost twice as many recent illicit drug users (26.5%) compared with non-users (13.9%) have been diagnosed with, or treated for a mental illness. • Illicit drug users reported being more likely to experience high or very high levels of psychological distress in the four weeks before participating in the National Drug Strategy Household Survey (NDSHS) (22.2% compared with 9.7%). • Among persons who inject drugs who participated in the 2017 NSW Illicit Drug Reporting System sample, 42% reported experiencing a mental health problem in the preceding six months (an increase from 35% in 2016). • Among those who had experienced a mental health problem in the last 6-months, 72% reported that they had attended a professional for such problems, including: a psychiatrist (42%), a GP (39%), a psychologist (33%), a counsellor (18%), or community-health nurse (15%).

		<ul style="list-style-type: none"> Just under two-thirds of the IDRS sample (64%) was assessed as having 'high' to 'very high' levels of psychological distress. This was much higher than what has been reported among the general population (11%). 																														
Characteristics of substance and drug users: local and national	Characteristics of people receiving opioid pharmacotherapy treatment	<p>The leading principle drugs of concern in 2017-18 among NBM residents seeking treatment for their own drug use with regard to opioid use, were: codeine followed by methadone and oxycodone [194].</p> <p>Figure 7: Number of closed treatment episodes for people seeking treatment for their own drug use, by principle drug of concern, 2014-15 to 2017-18 [194]</p> <table border="1"> <caption>Data for Figure 7: Number of closed treatment episodes by drug and period</caption> <thead> <tr> <th>Principle Drug</th> <th>2014-15</th> <th>2015-16</th> <th>2016-17</th> <th>2017-18</th> </tr> </thead> <tbody> <tr> <td>Codeine</td> <td>38</td> <td>34</td> <td>15</td> <td>27</td> </tr> <tr> <td>Morphine</td> <td>15</td> <td>11</td> <td>4</td> <td>2</td> </tr> <tr> <td>Buprenorphine</td> <td>5</td> <td>7</td> <td>2</td> <td>5</td> </tr> <tr> <td>Methadone</td> <td>45</td> <td>32</td> <td>11</td> <td>25</td> </tr> <tr> <td>Oxycodone</td> <td>20</td> <td>21</td> <td>8</td> <td>13</td> </tr> </tbody> </table> <p>Findings from the National Opioid Pharmacotherapy Statistics Annual Data Collection 2017 report indicate [202]:</p> <ul style="list-style-type: none"> The number and rate of people (20 clients per 10,000 people) receiving pharmacotherapy treatment have remained relatively stable since 2010. NSW remained the state with the highest rate of people receiving opioid pharmacotherapy treatment (26 clients per 10,000 people). Almost two-thirds (66%) of clients in 2017 were aged 30–49 years. The proportion of clients aged under 30 has declined each year since 2006 (28% of clients in 2006 falling to 7% of clients in 2017). Around two-thirds (66%) of clients receiving pharmacotherapy in 2017 were male. Indigenous Australians were around 3 times as likely to have received pharmacotherapy treatment compared to non-Indigenous Australians. Methadone continued to be the most commonly prescribed pharmacotherapy type across all age groups, followed by buprenorphine-naloxone and buprenorphine. 38% of clients reported heroin as their opioid drug of dependence. Oxycodone (5%) was the next most commonly reported drug of dependence followed by morphine, codeine and methadone (all 4%). 	Principle Drug	2014-15	2015-16	2016-17	2017-18	Codeine	38	34	15	27	Morphine	15	11	4	2	Buprenorphine	5	7	2	5	Methadone	45	32	11	25	Oxycodone	20	21	8	13
Principle Drug	2014-15	2015-16	2016-17	2017-18																												
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Characteristics of substance and drug users: national	Increasing trends in accidental drug-related deaths due to opioids, benzodiazepines,	Findings from Australia's annual overdose report [203] indicate that the number of accidental drug-related deaths in Australia has increased consistently over the past 15 years. There were 2,177 drug-related deaths in Australia in 2016 (up 77% from 1,231 in 2002) and of these, 1,704 were accidental (up 89% from 903 in 2002). Accidental drug-related deaths overtook the road toll in Australia for the first time in 2014.																														

	amphetamines, cannabinoids and alcohol	<p>Local rates in accidental drug-related deaths within the NBMPHN region are broadly reflective of those seen for Australia. In 2012-16, the NBMPHN rate of accidental drug-related deaths (7.1 per 100,000) was 5/10 highest among NSW PHNs, and 10/31 highest among PHNs in Australia. Between 2007-11 and 2012-16, the rate of accidental drug-related deaths increased from 6.4 per 100,000 persons to 7.1 per 100,000 persons.</p> <p>Opioids, in particular pharmaceutical opioids (including codeine, oxycodone, morphine and fentanyl) contributed the most to fatal overdose deaths in Australia. From 2001-2006, accidental deaths involving opioids were relatively stable at 450-500 per year, however have increased every year since to over 1,100 per year since 2014. Of significant concern is the strong association observed between increases in prescription of opioids and increased mortality.</p> <p>Detections of other drugs in accidental deaths is also increasing. Benzodiazepines, in-particular involving poly drug use, were the second most common drug class detected in accidental drug-related deaths. Detections of amphetamines (the third most common substance detected in accidental drug-related deaths in Australia, surpassing alcohol – likely driven by increased availability of ‘ice’), cannabinoids and alcohol have all increased over the previous 15 years.</p> <p>Population groups bearing the greatest burden of drug-related mortality include:</p> <ul style="list-style-type: none"> • Aboriginal and Torres Strait Islanders: in 2016, accidental drug-related deaths among Aboriginal persons were at more than 3.0 times higher as for non-Aboriginal persons (20.7 vs. 6.4 per 100,000 persons) • Men: twice as many men died from overdose than women in 2016 (1,453 compared to 724 drug-related deaths) • Middle aged Australians: persons aged 30-59 years contribute almost 70% of the accidental drug-related deaths in Australia annually
High risk populations: prison inmates	Impact of four adult and one juvenile correctional facilities within the NBM region, with higher risk of substance use among inmates compared to the general population.	<p>There are four adult and one juvenile correctional facilities in the NBM region. Consultations to date indicate:</p> <ul style="list-style-type: none"> • Inmates released from correctional facilities in the region are at high risk of risky substance use. • There are also suggestions that inmates who have undergone drug treatment have difficulty receiving necessary support services to maintain abstinence or low risk substance use on release. • Further research is required to establish any links between the number of correctional facilities, inmates released and needs that may be relevant to AOD treatment provision in the region. <p>The health of Australia’s prisoners 2018 reported the following key indicators [204]:</p> <ul style="list-style-type: none"> • Three in four prison entrants are smokers (which is over 5 times the rate of the general population), and 85% said they had smoked at some stage in their lives. • Almost 2 in 3 (65%) prison entrants used illicit drugs in the 12 months prior to prison. • About 1 in 3 (34%) prison entrants were at high risk of alcohol-related harm during the previous 12 months. • Prison entrants who did drink were more likely to drink at high-risk levels than people in the general community.

		<p>Other key indicators:</p> <ul style="list-style-type: none"> • The proportion of prison entrants who have ever been told by a doctor, psychiatrist, psychologist or nurse, that they have a mental health disorder which may include drug and alcohol abuse is 40%. • Almost 1 in 6 (16%) prison dischargees reported using illicit drugs while in prison, with about 1 in 12 (8%) reported injecting drugs while in prison • 7% of entrants to prison reported being on opioid substitution therapy • 1.5% of prisoners in custody received medication for opioid dependence • 7% of prison dischargees on an opiate substitution program while in prison with a plan to continue after release • 56% of prison dischargees reported a high risk of alcohol-related harm prior to current incarceration (measure by the AUDIT-C) • 8% of prison dischargees accessed an alcohol treatment program in prison.
<p>Prevalence and treatment of chronic Hepatitis C virus</p>	<p>Lower treatment uptake among NBM residents (27.0%) with chronic hepatitis C than NSW rates (29.0%).</p> <p>Lower number of hepatitis C treatment initiations (114) compared to the Ministry of Health target (155) for July 2018 – December 2018.</p> <p>A high proportion of NBM residents with hepatitis C had their treatment initiated by their GP (78%) compared to their specialist (21%).</p>	<p>NBMPHN analysis of available data [2, 205]:</p> <ul style="list-style-type: none"> • There are approximately 10,000 new Hepatitis C virus infections occur in Australia per year with 95% due to injecting drug use. • Prevalence of chronic hepatitis C (CHC) was slightly lower among NBM residents (0.96%) compared to NSW (1.04%), but slightly higher compared to the National average (0.94%) in 2016. • Despite the third highest proportion of residents with hepatitis C, who had their treatment initiated by their GP (78.0%) vs. specialist (21%) for NBMLHD compared to other NSW LHDs, for the period July 2018 – 31 December 2018, • NBMLHD had a relatively low proportion of residents with hepatitis C who have initiated treatment compared to NSW LHDs: March 2016 – December 2018, NBMLHD (27.0%) vs. NSW (29.0%), and • There were a lower number of hepatitis C treatment initiations (114) within NBM compared to the Ministry of Health target (155), for the period July 2018 – December 2018 • Hepatitis C treatment numbers declined between 2016 and 2017 nationally (from 14.0% to 9.0% in NSW) and in almost all Australian PHN regions, including in NBMPHN. • Within NBM, SA3 locations with a <i>lower CHC treatment uptake</i> than the NSW average (22.9%) include: Richmond-Windsor (13.1%), Penrith (16.4%) and St Marys (18.1%).

ALCOHOL AND OTHER DRUGS: ABORIGINAL PEOPLE

Outcomes of the health needs analysis – Alcohol and Other Drugs: Substance Use (<i>Aboriginal people</i>)		
Identified Need	Key Issue	Description of Evidence
Population characteristics.	NBM Aboriginal people experience a significantly higher rate of hospitalisation that is attributable to alcohol, compared to non-Aboriginal people.	<p>NBMPHN analysis of National and State data indicates [189, 210]:</p> <ul style="list-style-type: none"> • 2016-17 rates of hospitalisation attributable to alcohol in NSW shows that Aboriginal people had more than double the rate of alcohol attributable hospitalisations, with rates higher among males than females. • Overall Indigenous Australians were more likely to abstain from drinking alcohol than non-Indigenous Australians (31% compared with 23% respectively). However among those who did drink alcohol, risky drinking levels represented a higher proportion.
Substance use.	Prevalence of drug use in Aboriginal communities.	<p>NBMPHN analysis of National data indicates [189]:</p> <ul style="list-style-type: none"> • Excluding ecstasy and cocaine, Indigenous Australians use illicit drugs at a higher rate than the general population. • In 2016, Indigenous Australians were: 1.8 times more likely to use any illicit drug in the previous 12 months; 1.9 times more likely to use cannabis; 2.2 times more likely to use meth/amphetamines; and 2.3 times more likely to misuse pharmaceuticals, compared to non-Indigenous people. • These differences were still apparent after adjusting for differences in age structure of both populations. There were no significant changes in illicit drug use among Indigenous Australians between 2013 and 2016. <p>NBM 2015 Aboriginal Sharing and Learning Circles identified drug and alcohol issues as a priority. The concerns raised across four LGAs were [206]:</p> <ul style="list-style-type: none"> • High risk of substance use among a younger population. Approximately 55% of NBM Aboriginal people are under 25 years of age • The need for early intervention to reduce harm from alcohol and drugs • There is a high prevalence of cannabis use • The need for more Aboriginal health workers in the region to be trained to provide support for drug and alcohol issues • Access to culturally relevant information about alcohol and drugs • The need for an Aboriginal detoxification unit.
Aboriginal Youth and Substance Use	Indigenous Youth are identified as a priority area for substance use and mental health	<p>Ongoing Aboriginal community consultations in 2018 identified young Aboriginal people as a priority area within Aboriginal communities. Important issues impacting on young Aboriginal people include [207]:</p> <ul style="list-style-type: none"> • The critical importance of identity and cultural connection (and impacts where knowledge of identity and culture is lacking) • The presence of pressures including peer-pressure and bullying, including via social media and electronic communications

Outcomes of the health needs analysis – Alcohol and Other Drugs: Substance Use (<i>Aboriginal people</i>)		
		<ul style="list-style-type: none"> • Diverse perspectives: lack of support of diversity and diverse cultures in communities today • The critical importance in ensuring cultural competence and cultural safety of services, including those accessed by young Aboriginal people
	Young Aboriginal persons within and/or on release from NBM correctional facilities represent a high-risk group in high need of support	<p>Findings from the 2016 NSW inmates census reveal [208]:</p> <ul style="list-style-type: none"> • The disproportionately high representation of young Aboriginal persons within NSW prisons and correctional facilities. • Given consultations for the general population indicate that inmates released from correctional facilities in the NBM region are at high risk of risky substance use, or have difficulties receiving necessary support to maintain abstinence or low risk substance use on release, this population group (Young Aboriginal people within &/or on release from correctional facilities) likely represents a high-risk group in high need of support.
	Local barriers to accessing services.	<p>2016 Community Yarn Up consultations: Identified barriers to accessing culturally appropriate mental health services, which are likely to be relevant to understanding AOD treatment barriers in NBM region include [211]:</p> <ol style="list-style-type: none"> 1. Racism 2. Cultural Safety 3. Flexibility of services 4. Stigma 5. Support for Aboriginal staff. <p>2016 survey of NBM Aboriginal people admitted to hospital [212]:</p> <ul style="list-style-type: none"> • NBM Aboriginal people perceived a poorer hospitalisation experience compared to Aboriginal people for NSW and compared to non-Aboriginal people. • Only 48% of adult admitted Aboriginal patients in NBMLHD rated the care they received in hospital as 'very good'. This was the lowest proportion in NSW.
	Aboriginal Community perceptions of health needs concerning substance use (Alcohol and Other Drugs)	<p>The strongest themes arising from 2016 Aboriginal community forums on Alcohol and Other Drugs and Mental Health were around [213]:</p> <ul style="list-style-type: none"> - The governance, accountability and ongoing communication between the local Aboriginal Communities and services - Lack of access to appropriate services - Coordination of services. <ul style="list-style-type: none"> • All topics raised were underpinned by a lack of understanding from the services about Aboriginal People and the complex issues Aboriginal people are dealing with.

Outcomes of the health needs analysis – Alcohol and Other Drugs: Substance Use (*Aboriginal people*)

		<ul style="list-style-type: none"> • The experience of some Aboriginal people is that access to AOD services may be due to a mandated requirement through child protection and justice services, rather than in response to health needs. • In addition to long standing Aboriginal community mistrust of health services providers, NBM Aboriginal people may regard providers of AOD services with even greater mistrust and fear, and consequently may avoid seeking assistance for emerging or long standing dependence on substances. • In response to these issues local service providers involved in the consultations and Aboriginal people, strongly identified the need for more Aboriginal people to be trained to facilitate and support access to AOD treatment on behalf of others because for many Aboriginal people self-referral is not considered. <p>Further consultation with local Aboriginal community controlled AOD service providers during 2016 indicated:</p> <ul style="list-style-type: none"> • Due to a range factors including longstanding substance dependence, polydrug use, intergenerational and lived trauma, Aboriginal people often present for AOD treatment when they are in crisis and with multiple problems such as drug induced psychosis, acute physical illness and justice orders. • The complexity of these problems often means that a single treatment provider is unable to provide the support and treatment that clients require. • These complex Aboriginal clients are experiencing an unsatisfactory and circular journey among multiple service providers, as well as poor outcomes. • Communities also consistently pointed to the need to develop better mechanisms to engage with local Aboriginal Communities in a more holistic way and more regularly. There is a need to engage with Aboriginal people in a way that values their lives as whole and listens to their perspectives on the relationship between factors in their lives and the complexities of dealing with their issues.
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Indigenous Health (including Indigenous chronic disease)

Outcomes of the health needs analysis – Indigenous Health (including Indigenous chronic disease)																										
Identified Need	Key Issue	Description of Evidence																								
Indigenous Population	<p>Population Growth</p> <p>There was significant growth (43%) in the estimated Indigenous population in the NBM region between 2011 and 2016.</p> <p>The highest proportion (5.7%) of Aboriginal residents in the NBM region live in the Lithgow LGA, while the highest number (7,740) of Aboriginal residents live in the Penrith LGA.</p>	<p>There are now 13,955 people in the NBM population identified as Aboriginal and Torres Strait Islander, comprising 3.7% of the total population [18]. This is an increase of 43% in the estimated Indigenous population or 3,952 Aboriginal and Torres Strait Islander people in the NBM region from the Census 2011. As a proportion of the total population, the NBM Aboriginal and Torres Strait Islander population (3.7%) was higher compared to 2.9% for Aboriginal persons in NSW and 1.5% for Aboriginal persons in NSW major urban areas.</p> <p>Within NBM, there are variations between LGAs in the proportion of the population identifying as Aboriginal and Torres Strait Islander. More than half of the NBM Aboriginal and Torres Strait Islander population live in the Penrith LGA, with a further 18% in the Hawkesbury LGA.</p> <p>Table 13: Distribution of Aboriginal and Torres Strait Islander population in Nepean Blue Mountains by LGA, 2016 [18]</p> <table border="1"> <thead> <tr> <th>LGA</th> <th>Aboriginal population</th> <th>Proportion of Aboriginal people as a % of LGA population</th> <th>% of NBM Aboriginal population</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>1,821</td> <td>2.4%</td> <td>13.8%</td> </tr> <tr> <td>Hawkesbury</td> <td>2,395</td> <td>3.7%</td> <td>18.2%</td> </tr> <tr> <td>Lithgow</td> <td>1,208</td> <td>5.7%</td> <td>9.2%</td> </tr> <tr> <td>Penrith</td> <td>7,740</td> <td>3.9%</td> <td>58.8%</td> </tr> <tr> <td>Total</td> <td>13,165</td> <td>3.7%</td> <td>100.0%</td> </tr> </tbody> </table>	LGA	Aboriginal population	Proportion of Aboriginal people as a % of LGA population	% of NBM Aboriginal population	Blue Mountains	1,821	2.4%	13.8%	Hawkesbury	2,395	3.7%	18.2%	Lithgow	1,208	5.7%	9.2%	Penrith	7,740	3.9%	58.8%	Total	13,165	3.7%	100.0%
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Age profile for NBM Aboriginal people	Aboriginal residents in NBM demonstrate a younger age profile compared to non-Aboriginal residents	The age profile of the Aboriginal community in Nepean Blue Mountains is much younger than of the non-Indigenous population [169]. The median age of Aboriginal residents in the region was 21 years in 2016, compared with 36 years for the total NBM population. NBM Aboriginal people under 25 years of age represent 54.6% of the total Aboriginal population, compared to 33% of people under 25 years of age in the non-Aboriginal population.																								
Social determinants of health	Greater socio-economic disadvantage compared to the	Selected socioeconomic indicators from the 2016 Census demonstrate the relative disadvantage in NSW of the Aboriginal population when compared with the non-Aboriginal population [169]. In NSW, and compared with the non-Aboriginal population - larger percentages of Aboriginal people were: unemployed (15.3% vs. 6.0%); had no post-school qualifications																								

Outcomes of the health needs analysis – Indigenous Health (including Indigenous chronic disease)

	<p>total population in NSW, in particular:</p> <ul style="list-style-type: none"> • Unemployment • Overcrowded accommodation • No internet access at home. 	<p>(66.9% vs. 48.7%); had no household internet connection (22.5% vs. 14.6%); had a weekly household income less than \$500 (15.4% vs. 13.6%); lived in multi-family households (5.4% vs. 3.3%); and resided in dwellings with 6 or more people (8.4% vs. 3.7%). Of these the largest categories of disparity were: unemployment, resided in dwelling with 6 or more people and had no household internet connection.</p> <p>NBM Aboriginal people broadly reported the segmentation of mainstream health services does not align with traditional concepts of Aboriginal wellbeing being which inextricably link mind, body and spirit as one. Geographical boundaries dividing health services often do not align with 'Aboriginal Country' boundaries, impacting the ability of service providers to support families and communities across boundaries. The important role of culture, and value of relational approaches as a foundation to healing is not often recognised or integrated into mainstream systems of care³⁰²</p>
Chronic and preventable conditions	<p>Higher rates of chronic and preventable disease, in particular including:</p> <ul style="list-style-type: none"> • Respiratory diseases • Circulatory diseases • Diabetes • Chronic kidney disease • Cancer 	<p>The health of Aboriginal and Torres Strait Islander Australians is improving on a number of measures, including trends of significant declines in avoidable and preventable death rates, chronic disease mortality rates, infant and child mortality, low birth weight and increases in life expectancy at birth [170, 111].</p> <p>Despite these improvements, significant disparities persist between Indigenous and non-Indigenous Australians. Indigenous Australians continue to have lower life expectancy, increasing hospitalisation rates for mental health conditions, higher rates of chronic and preventable illnesses including respiratory diseases, circulatory diseases, diabetes, chronic kidney disease and cancer, poorer self-reported health, and a higher likelihood of being hospitalized than non-Indigenous Australians.</p>
	<p>Higher prevalence of behavioural risk factors for chronic conditions, including:</p> <ul style="list-style-type: none"> • Smoking • Inadequate fruit intake • Consumed alcohol at risky levels • Insufficient physical activity • Overweight and obesity 	<p>Despite trends of improvements in many of these areas, Aboriginal people in NSW continue to have a higher prevalence of most behavioural risk factors for chronic conditions compared to non-Indigenous persons [171]. These include:</p> <p>Smoking: Higher prevalence of current smoking among Aboriginal adults in 2017 compared to non-Aboriginal persons (28.5% vs. 14.7%)</p> <p>Nutrition: Lower proportion of Aboriginal persons aged 16-years and older did not eat recommended daily amounts for vegetables (91.6% vs. 93.4%), however a higher proportion did not eat recommended daily amounts for fruit (59.0% vs. 53.4%) compared to non-Aboriginal persons.</p> <p>Alcohol: Higher proportion of Aboriginal persons aged 16-years and older in 2017 consumed alcohol at levels posing long-term risk to their health compared to non-Aboriginal persons (41.3% vs. 30.7%)</p> <p>Physical activity: A slightly higher proportion of Aboriginal persons aged 16 years and older in 2017 were insufficiently physically active – did not meet physical activity guidelines compared to non-Aboriginal persons (42.0% vs. 41.7%)</p>

Outcomes of the health needs analysis – Indigenous Health (including Indigenous chronic disease)

		<p>Overweight and obesity: A significantly higher proportion of Aboriginal adults in 2017 were obese (30.3% vs. 20.6%), or overweight or obese combined (61.0% vs. 53.2%) compared to non-Aboriginal persons</p>																												
<p>Immunisation rates</p>	<p>Immunisation rates for Aboriginal children in the NBM region are increasing and at higher than national average rates.</p> <p>Immunisation rates for NBM Aboriginal children aged 2 years have fluctuated over the previous 5-years.</p>	<p>Recent strategies implemented by the NBMLHD to target an increase in Aboriginal children’s immunisation rates have proved successful. NBM Immunisation rates for 1, 2 and 5-year old Aboriginal children (% fully vaccinated) have been increasing over the last 5-year period and are outlined in the table below [172-173]:</p> <p style="text-align: center;">Immunisation rates by age-group and year</p> <table border="1" data-bbox="916 472 1901 788"> <thead> <tr> <th></th> <th>1 year</th> <th>2 years</th> <th>5 years</th> </tr> </thead> <tbody> <tr> <td>2018-19 (1 April 2018 – 31 March 2019)</td> <td>95.4%</td> <td>88.8%</td> <td>98.7%</td> </tr> <tr> <td>2018</td> <td>94.5%</td> <td>87.7%</td> <td>98.5%</td> </tr> <tr> <td>2016-17</td> <td>94.0%</td> <td>92.5%</td> <td>98.0%</td> </tr> <tr> <td>2015-16</td> <td>92.5%</td> <td>89.0%</td> <td>97.5%</td> </tr> <tr> <td>2014-13</td> <td>88.5%</td> <td>87.2%</td> <td>94.7%</td> </tr> <tr> <td>2013-14</td> <td>86.6%</td> <td>92.8%</td> <td>93.5%</td> </tr> </tbody> </table> <p>Immunisation rates for NBM Aboriginal children in 2016-17 were higher than the national average rates for 1, 2 and 5-year olds:</p> <ul style="list-style-type: none"> • 1 year of age – 94.0% (above national average 92.2%) • 2 years of age – 92.5% (above national average 88.6%) • 5 years of age – 98.0% (above national average 95.7%) 		1 year	2 years	5 years	2018-19 (1 April 2018 – 31 March 2019)	95.4%	88.8%	98.7%	2018	94.5%	87.7%	98.5%	2016-17	94.0%	92.5%	98.0%	2015-16	92.5%	89.0%	97.5%	2014-13	88.5%	87.2%	94.7%	2013-14	86.6%	92.8%	93.5%
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<p>Potentially preventable hospitalisations (PPHs) for chronic conditions</p>	<p>More than double the rate of PPHs due to chronic conditions among NBM Aboriginal persons.</p> <p>Leading PPHs due to chronic conditions among Aboriginal people in NSW include:</p> <ul style="list-style-type: none"> • COPD • Diabetes complications • Congestive heart failure 	<p>PPHs for chronic conditions provide an indication of the effectiveness of chronic disease management in a population – they are those which could have been prevented if earlier and effective preventative care and chronic disease management had been provided.</p> <p>There were 143 PPHs among NBM Aboriginal residents in 2016-17 due to chronic conditions, at a rate of 1,985 per 100,000 persons [174]. This was more than double the rate of PPHs due to chronic conditions for non-Aboriginal people in the NBM region (918 per 100,000 persons), but lower than the rate for all Aboriginal people in NSW (2,826 per 100,000 persons). The leading PPHs due to chronic conditions among Aboriginal persons in NSW in 2016-17 were: COPD (1,325 PPHs), diabetes complications (704) and congestive heart failure (368) [175].</p>																												

Outcomes of the health needs analysis – Indigenous Health (including Indigenous chronic disease)		
Hospitalisation rates attributable to alcohol	Higher alcohol consumption and higher rate of hospitalisations attributable to alcohol.	In NSW, alcohol consumption at levels posing long-term risk to health for Aboriginal people aged 16 years and over is 1.4 times that for non-Aboriginal people in 2018. Alcohol attributable hospitalisations for Aboriginal people in 2016-17 was similarly 1.4 times that for non-Aboriginal people [176].
Maternal and infant health	<p>Poor antenatal outcomes for Aboriginal mothers:</p> <ul style="list-style-type: none"> • Higher proportion (6.9% vs. 6.5%) of births of low birth weight • Higher perinatal mortality rates in NSW. • Significantly higher smoking rates during pregnancy • Fewer Aboriginal mothers have their first antenatal visit before 14 weeks gestation. 	<p>During 2016, the proportion of low weight births to Aboriginal mothers in NBM was 6.9% [177]. This was slightly higher than the proportion of low birth weight births to non-Aboriginal mothers at 6.5% of births (12.6% in 2015).</p> <p>In 2017, the Aboriginal perinatal mortality rate in NSW was 12.7 deaths per 1,000 live births. This was higher than the non-Aboriginal rate of 8.2 deaths per 1,000 live births. In 2016, the proportion of NBM Aboriginal women who smoked during pregnancy was 34.5% [178]. Despite a downward trend (53.1% of NBM Aboriginal women smoked during pregnancy in 2011), smoking rates during pregnancy remain significantly higher than 11.0% for non-Aboriginal NBM mothers. The percentage of women whose first antenatal visit occurred before 14 weeks gestation was lower for Aboriginal women [179]. In 2016, 49.1% of NBM Aboriginal women achieved this benchmark and for non-Aboriginal women the rate was 58.9%.</p>
Life expectancy	Aboriginal males and females have lower life expectancy than the general population.	In 2010-12, NSW Aboriginal males had a life expectancy of 70.5 years [180]. This was 9.3 years lower than the life expectancy for the male non-Aboriginal population living in NSW. In 2010-12, NSW Aboriginal females had a life expectancy of 74.6 years. This was 8.5 years lower than the life expectancy for the female non-Aboriginal population living in NSW.
Causes of death	<p>Higher rate of deaths among Aboriginal people in NSW for the leading categories:</p> <ul style="list-style-type: none"> • Circulatory diseases • Malignant neoplasms • Respiratory system diseases • Injury and poisoning; and • Endocrine diseases 	<p>Causes of death for all NSW residents between 2012 and 2016 show that Aboriginal people have a higher rate of deaths compared to non-Aboriginal persons for the following leading categories of cause [181]:</p> <ul style="list-style-type: none"> • Circulatory diseases (238 vs. 153 per 100,000 persons); • Malignant neoplasms (cancers) (213 vs. 160 per 100,000 persons); • Diseases of the respiratory system (100 vs. 47 per 100,000 persons). • Injury and poisoning (67 vs. 34 per 100,000 persons); • Endocrine, nutritional and metabolic diseases (including diabetes) (56 vs 21 per 100,000 persons); <p>The proportion of deaths occurring due to injury and poisoning were 13.6% for NSW Aboriginal population of NSW, compared to 5.5% for the non-Aboriginal population. This category includes suicide and trauma.</p>

Section 3 – Outcomes of the service needs analysis

This section summarises the findings of the service needs analysis in the table below. For more information refer to Table 2 in ‘5. Summarising the Findings’ in the Needs Assessment Guide on www.health.gov.au/PHN.

Additional rows may be added as required.

General Population Health

General population service needs analysis is encompassed within six key theme areas of:

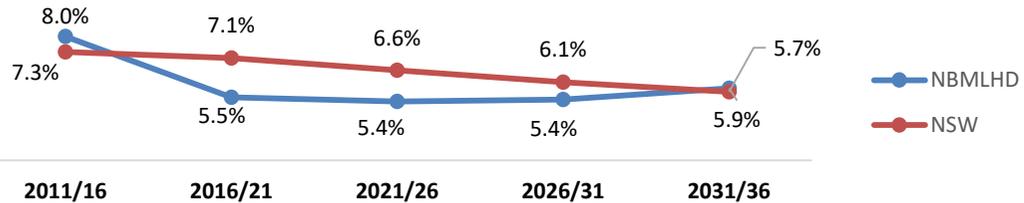
- Theme 1 - ACCESS TO HEALTH SERVICES is addressed fully within Section 3 – Outcomes of service needs analysis
- Theme 2 - CANCER SCREENING AND PREVENTION
- Theme 3 - CHRONIC AND PREVENTABLE CONDITIONS
- Theme 4 - CULTURAL AND DEMOGRAPHIC FACTORS INFLUENCING HEALTH STATUS
- Theme 5 - END of LIFE CAE
- Theme 6 - OLDER PERSONS

ACCESS TO HEALTH SERVICES

Outcomes of the service needs analysis – General Population Health, Priority Theme 1: <i>Access to Health Services</i>		
Identified Need	Key Issue	Description of Evidence
Population, geographical, social and economic barriers to accessing services		
Population growth	Projected population growth will impact upon demand for health services, in particular in the Penrith LGA	NBM is among some of the faster growing regions in NSW, in particular driven by population growth in Penrith as a part of the expansion of Greater Western Sydney. Between 2016 and 2036, the NBM population is projected to grow by 24.1% – although lower than the total for NSW at 28.1%, this is the 4th highest rate of population growth among Local Health Districts in NSW, behind Western Sydney, South Western Sydney and Sydney [227].

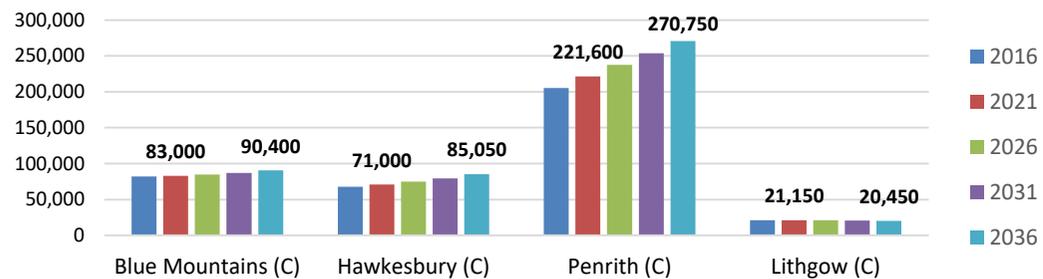
Outcomes of the service needs analysis – General Population Health, Priority Theme 1: Access to Health Services

Figure 8: Rate of projected population growth in Nepean Blue Mountains and NSW, 2016-2036 [227]



Only three LGAs across Nepean Blue Mountains are projected to experience population growth over the fifteen years from 2021 to 2036. The rate of growth is highest in the Penrith LGA at 22.2% followed by Hawkesbury LGA at 19.8% and Blue Mountains at 8.9%. Conversely, Lithgow LGAs population is projected to decline by -3.3% during this period.

Figure 9: Projected population grown in Nepean Blue Mountains by Local Government area, 2016-2036 [227]



Diverse geography impacts access to health services

NBM is a geographically diverse region with isolation, poor access to public transport and poor access to services in some parts of the region.

Use of public transport infrastructure in each of the region’s LGAs is low, evidenced by high proportions of residents who travel to work by car or as

The Nepean Blue Mountains (NBM) region is located in NSW approximately 60 kilometres West of Sydney to its Eastern boundary. The region is comprised of urban, semi-rural and rural areas, covering almost 9,179 square kilometres and spans from St Marys in the East to Portland in the West. Three major motorways – the M4, Great Western Highway and Northern Road – provide key infrastructure support and access across the area [228-229].

The NBM region is one of 15 NSW State Local Health Districts (LHD) and 31 National Primary Health Networks, and provides primary, secondary and tertiary level healthcare for people living in each of the region’s four Local Government Areas (LGAs), and tertiary care to residents of Greater Western Sydney Region. Aspects of the region’s diversity in terms of population and topography provide specific challenges to delivering services by healthcare providers at both primary and tertiary care levels.

The region’s four LGAs are described below.

Outcomes of the service needs analysis – General Population Health, Priority Theme 1: Access to Health Services

	<p>a car passenger compared to NSW, including:</p> <ul style="list-style-type: none"> • Blue Mountains LGA – 63.9% • Hawkesbury LGA – 73.5% • Lithgow LGA – 73.1% • Penrith LGA – 71.6% • NSW state average – 62.1% 	<p>Blue Mountains LGA Blue Mountains City is located at the western fringe of the Sydney metropolitan area, about 55 to 95 kilometres from the Sydney CBD. Blue Mountains City is bounded by Hawkesbury City in the north, Penrith City in the east, Wollondilly Shire in the south, and Lithgow City and the Oberon Council area in the west.</p> <p>Blue Mountains City is a residential, tourist and rural area. The City encompasses a total land area of 1,432 square kilometres, of which 74% is World Heritage National Park, renowned for its forests, rock formations, bushwalks, waterfalls and lookouts. A further 14% of the City is contained in public reserves. The majority of the remaining area is residential, with most towns and villages located along the ridgelines and plateaus on the main east-west road and rail corridor. Some are small, isolated rural settlements while others are large, urbanised areas. The major population centres are Katoomba and Springwood. The primary rural area is the Megalong Valley. Blue Mountains City is served by the Great Western Highway, Bells Line of Road and the Western railway line.</p> <p>Among residents who were employed, the majority (57.3%) traveled outside of the LGA to work (18.4% to Penrith LGA and 6.5% to City of Sydney), while 42.7% work locally. Three-fifths (60.6%) of Blue Mountains residents in 2016 traveled to work by car, with the next most used method of transport to work by train (11.4%).</p> <p>Hawkesbury LGA Hawkesbury City is located at the north-western fringe of the Sydney metropolitan area - about 50 kilometres from the Sydney GPO. Hawkesbury City is bounded by the Singleton Council area and Cessnock City in the north, the Central Coast Council area and The Hills Shire in the east, Blacktown City, Penrith City and Blue Mountains City in the south, and Lithgow City in the west.</p> <p>Hawkesbury City is predominantly comprised of national and state parks, with some residential, commercial, industrial and military land use. The City encompasses a total land area of about 2,800 square kilometres, of which more than 70% is National Park. The Hawkesbury is divided by 5 river systems; the Nepean, Hawkesbury, Grose, Colo and MacDonald rivers. The main population centres are Windsor and Richmond, with urban areas also in many small townships and localities. The majority of the population live in the south-eastern section of the City. Hawkesbury City is served by Bells Line of Road, Singleton Road, Wollombi Road, Richmond-Blacktown Road, and the Western railway line.</p> <p>Among residents who were employed, the majority (55.8%) traveled outside of the LGA to work (11.8% to Blacktown LGA, 9.2% to Penrith LGA and 7.6% to The Hills Shire), while 44.2% work locally. Almost three quarters of Hawkesbury residents in 2016 traveled to work by car, with the vast majority (69.5%) driving to work as a driver, and a further 4.0% as a passenger. This compares to 52.8% of persons in the greater Sydney region who traveled to work by car.</p> <p>Lithgow LGA</p>
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Outcomes of the service needs analysis – General Population Health, Priority Theme 1: Access to Health Services

		<p>Lithgow City is located in the Central Tablelands of New South Wales, about 140 kilometres west of the Sydney CBD. Lithgow City is bounded by the Mid-Western Regional Council area and the Singleton Council area in the north, Hawkesbury City in the east, Blue Mountains City and the Oberon Council area in the south, and the Bathurst Regional Council area in the west.</p> <p>Lithgow City is a predominantly rural area, with rural-residential and residential areas in several townships, and some industrial land use. Nearly two thirds of the City is national park or state forest. Settlement is based in the township of Lithgow, the smaller townships of Portland and Wallerawang, and numerous small villages. The City encompasses a total land area of about 4,550 square kilometres. Rural land is used mainly for farming, grazing and mining (particularly coal mining). Lithgow City is served by the Castlereagh Highway, the Great Western Highway, and the main western railway line.</p> <p>Among residents who were employed, the majority (76.3%) work locally, while 23.7% travel outside of the area to work (6.5% to Blue Mountains LGA and 5.1% to Bathurst Regional Area). More than two-thirds (68.8%) of Lithgow residents in 2016 traveled to work by car as a driver and a further 4.3% as a passenger. The next most used method of transport to work was by walking (4.8%).</p> <p>Penrith LGA</p> <p>Penrith City is located at the western fringe of the Sydney metropolitan area - about 54 kilometres from the Sydney GPO. Penrith City is bounded by Hawkesbury City in the north, Blacktown City and Fairfield City in the east, Liverpool City and Wollondilly Shire in the south, and Blue Mountains City in the west.</p> <p>Penrith City is a residential and rural area, with most of the population living in residential areas in a linear corridor along the Great Western Highway and the Western railway. The City encompasses a land area of 407 square kilometres, of which around 80% is rural and rural-residential. Most of the urban area is residential, with some commercial areas and industrial areas, including extractive industries and manufacturing. Much of the rural area is used for agricultural purposes, including dairying, poultry farming, hobby farming, orcharding, market gardening and horse breeding. Major commercial centres are located at Penrith and St Marys. Penrith City is served by the Great Western Highway, The Northern Road, the Western Motorway and the Western railway line.</p> <p>Among residents who were employed, the majority (61.4%) traveled outside of the LGA to work (15.1% to Blacktown LGA, 8.4% to Parramatta LGA and 6.3% to City of Sydney), while 38.6% work locally. Two-thirds (66.7%) of Penrith residents in 2016 traveled to work by car as a driver and a further 4.9% as a passenger. The next most used method of transport to work was by train (10.4%).</p>
<p>Impact of distinctly different remoteness</p>	<p>NBM region demonstrates wide geographical variability, with remoteness classifications</p>	<p>A summary of the Australian Bureau of Statistics Remoteness Areas for LGAs in the NBM region is as follows [230]:</p> <ul style="list-style-type: none"> • Penrith LGA: entirely classified as – <i>Major Cities of Australia</i>

Outcomes of the service needs analysis – General Population Health, Priority Theme 1: Access to Health Services		
classifications on access to health services	including: <i>Major Cities of Australia, Inner Regional Australia, and Outer Regional Australia.</i>	<ul style="list-style-type: none"> Blue Mountains LGA: mostly classified as – <i>Major Cities of Australia</i>, with Medlow Bath and Blackheath classified as <i>Inner Regional Australia</i> Hawkesbury LGA: has a mix of remoteness areas, including – <i>Major Cities of Australia, Inner Regional Australia, and Outer Regional Australia.</i> Lithgow LGA: has a mix of remoteness areas – <i>Inner Regional Australia, and Outer Regional Australia.</i>
Impact of Badgerys Creek Aerotropolis	Impact of changing environment and population on health services in the region	The development of the new Badgerys Creek Aerotropolis is expected to impact both health and service needs in the NBM area [231]. Major infrastructure development will have an environmental impact and there are as yet unknown health impacts. There are 13,000 new jobs also predicted in aviation, aerospace, Defence industries and advanced manufacturing. These factors will substantially affect both health access and health workforce in the region. A number of Council led initiatives will partner with NBM PHN and SWS PHN and corresponding Local Health Districts to develop a local Health Alliance to address local needs over the development period.
Barriers reported by consumers in accessing health services	Major barriers to accessing health services previously reported by consumers include: <ul style="list-style-type: none"> Availability of transport Difficulty accessing specialist care Inadequate awareness and information about services and eligibility requirements Inadequate support and lack of services for aged care and carers 	Consumer forums previously conducted by the NBMML in each of the LGAs, during 2012, indicate the following barriers in accessing health care [232]. <ul style="list-style-type: none"> Transport including availability, long distances especially for outlying areas and costs were dominant issues for all LGAs Workforce shortages including access to specialist care. For Blue Mountains and Lithgow LGAs in particular, there were difficulties accessing general practice due to limited supply. Consumers reported that GPs often closed their books to new patients. Or there was a 2 week plus waiting period. Long waiting lists for services were experienced by residents from all LGAs Inadequate information about available services and eligibility was raised by consumers from all LGAs. Residents were not able to access existing services because of lack of awareness of those services. GPs and allied health professionals also experienced similar difficulties obtaining up to date knowledge of available services and eligibility requirements Inadequate support and lack of services for aged care and carers was also identified by all LGAs. The effects of increasing demand for these services due to the ageing population were believed to be negatively impacting on access.
Cost of health services impact residents accessing health services	Cost is a barrier to accessing healthcare services for NBM residents: A smaller proportion of NBM patients incurred out-of-pocket ('gap') costs for Medicare-subsidised health care	The total annual out-of-pocket costs (known as the 'gap') for NBM patients for their Medicare-subsidised health care delivered outside a hospital in 2016-17 is outlined below. The proportion of patients who delayed seeing a specialist, GP, get an imaging test or a pathology test due to cost in the 12-months prior to 2016-17 is also indicated [233]. Total out-of-pocket costs per patient: <ul style="list-style-type: none"> Two-fifths (40.6%) of all NBM patients incurred out-of-pocket costs for non-hospital Medicare services in 2016-17. This proportion was relatively low compared to Australia (49.8%) and the 5th lowest among PHNs in Australia. For these patients with costs, the median amount spent in the year was \$152 per patient. This was \$10 higher per patient compared to the average for Australia (\$142 per patient) and the 7th highest among PHNs in Australia.

Outcomes of the service needs analysis – General Population Health, Priority Theme 1: Access to Health Services

	<p>compared to the national average for the following services:</p> <ul style="list-style-type: none"> Total non-hospital Medicare services (40.6% vs. 49.8%) GP attendances (16.4% vs. 33.8%) Diagnostic imaging services (9.6% vs. 23.5%). <p>However, a higher proportion of NBM residents (7.8%) delayed or did not see a medical specialist, GP, get an imaging test or pathology test due to cost in the 12-months prior to 2016-17, compared to the national average (6.5%).</p>	<ul style="list-style-type: none"> There was wide variation in the proportion of NBM patients who incurred out-of-pocket costs for non-hospital Medicare services. This ranged from one-quarter (25.7%) of patients in St Marys to more than double that number in the Hawkesbury (51.0%), Blue Mountains (52.2%) and Dural-Wisemans Ferry (58.5%) SA3. The median total out-of-pocket cost also varied significantly, from \$117 in Lithgow-Mudgee to \$187 in Dural-Wisemans Ferry SA3. <p>Out-of-pocket costs for specialist and obstetric attendances:</p> <ul style="list-style-type: none"> NBM patients were most likely to pay for specialist services, where 72.0% of patients incurred specialist out-of-pocket costs in 2016-17. This was the same as the Australian average, with 71.9% of patients incurring out-of-pocket specialist costs. A lower proportion of NBM patients (40.5%) incurred obstetric out-of-pocket costs compared to all patients in Australia (44.2%), however the median cost per obstetric service was similar (\$81 vs. \$78). <p>Out-of-pocket costs per GP attendance:</p> <ul style="list-style-type: none"> Only 16.4% of NBM patients incurred out of pocket GP costs in 2016-17. This was less than half the proportion of patients in Australia with GP costs (33.8%) and was the third lowest among PHNs in Australia. The median out-of-pocket cost per GP attendance for NBM patients was \$13. <p>Out-of-pocket costs per diagnostic imaging service:</p> <ul style="list-style-type: none"> Similarly, only 9.6% of NBM patients incurred out of pocket costs for diagnostic imaging services in 2016-17. This was less than half the proportion of patients in Australia with diagnostic imaging costs (23.5%) and was the second lowest among PHNs in Australia. The median out-of-pocket cost per GP attendance for NBM patients was \$13. <p>People who delayed or did not see a medical specialist, GP, get an imaging test or get a pathology test due to cost:</p> <ul style="list-style-type: none"> 7.8% of NBM residents aged 15 years and over said the cost of services was the reason they delayed or did not seek specialist, GP, imaging or pathology services when they needed them, in the 12 months prior to 2016-17. This was higher than the national average (6.5%) and the seventh-highest among PHNs in Australia. <p>People who delayed or did not seek GP care due to cost:</p> <ul style="list-style-type: none"> 3.5% of NBM residents aged 15 years and over said the cost of services was the reason they delayed or did not seek GP care when they needed them, in the 12-months prior to 2015-16. This was slightly lower than the National average for PHNs at 4.1%.
<p>Lower levels of private health insurance across the region</p>	<p>A lower proportion of the NBM population (49.4%) has private health insurance hospital cover compared to the NSW state average (51.5%)</p>	<p>The estimated percentage of people aged 18 years and over with private health insurance hospital cover in 2014-15 was 49.4% across the NBMMPHN region, compared to 51.5% in NSW [234-235]. Breakdown by LGA: 58.7% in Blue Mountains, 54.0% in Hawkesbury LGA, 39.3% in Lithgow LGA and 44.9% in Penrith LGA.</p>

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<p>Low health literacy levels affects health choices</p>	<p>Low health literacy is a risk factor for poor health – influencing capacity to make decisions about health and health care.</p> <p>59% of adult Australians have an inadequate level of health literacy to meet the complex demands of everyday life, with lowest levels among:</p> <ul style="list-style-type: none"> • People who speak English as a second language • People on low incomes 	<p>The health literacy of individuals and the health literacy environment (of healthcare services) impact on people’s ability to maintain their own health. Healthy literacy is important as it can influence decisions people make about their health and healthcare, such as managing their medications, when to access health services, which services to access, and how. Low levels of health literacy have been associated with higher rates of hospitalisation and emergency care use, premature death among older people and lower participation in preventative programs.</p> <p>The latest (2006) Australian Bureau of Statistics survey on health literacy found that 59% of adult Australians had an inadequate level of health literacy that would not allow them to meet the complex demands of everyday life [236]. Health literacy was found to be lower among people who speak English as a second language and among people on low incomes.</p> <p>The levels of Health literacy in the NBM region need to be explored further.</p>
<p>Availability of Primary Care Services</p>		
<p>GP services</p>	<p>Distribution of GP services in the NBM region.</p>	<p>There were 139 general practices in the NBM region as at 8 November 2018 [237]. Of these, 4 general practice services were medical deputising services providing access to GP services after hours. The number of general practices in each LGA in the region as 8 November 2018 was:</p> <ul style="list-style-type: none"> • Penrith LGA – 79 • Blue Mountains LGA – 25 • Hawkesbury LGA – 27 • Lithgow LGA - 8 <p>The number of GPs per 100,000 population in each LGA in the region as at 8 November 2017 was [237-238]:</p> <ul style="list-style-type: none"> • Penrith LGA – 127 • Blue Mountains LGA – 133 • Hawkesbury LGA – 132 • Lithgow LGA – 144 <p>Note: This does not take into account whether GPs are part time. A fulltime equivalent (FTE) GP to population ratio would provider a clear picture. This data is not currently being collected at a national level.</p>
<p>Predicted growth in older population</p>	<p>An additional 123 GPs will be required to practice in the NBM</p>	<p>The NBM region population is ageing. In 2016, 14.1% of the NBM population was aged 65 years and older. The proportion of the NBM population aged 65 years and older is projected to increase to 18.5% by 2026 and 20.7% by 2036 [227].</p>

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	<p>region by 2036 to maintain the same GP to population ratio.</p>	<p>Additionally, the most rapid increases in the population are projected for the 75-84 and 85+ year age groups. From 2016-2036, the 85+ year age group will experience the highest growth of 233% (5,600 to 16,300 persons) followed by the 75-84 years age group of 195% (14,660 to 35,470 persons).</p> <p>As at October 2018, the GP to population ratio in the NBM region was 130.3 GPs per 100,000 persons. In order to maintain the same GP to population ratio by the year 2036, an additional 123 GPs (total of 608 GPs) will be required to practice in the NBM region within this timeframe [237].</p>
<p>Declining health capacity in regional areas</p>	<p>Except for GPs, there is a marked decline in the workforce capacity / service availability for most primary healthcare professionals in Australia in regional areas.</p> <p>Compared with major cities, people who live in inner regional areas such as Lithgow LGA, Upper Blue Mountains and outlying areas of Hawkesbury are:</p> <ul style="list-style-type: none"> • Less likely to have seen a GP after-hours • Less likely to have seen a dental professional • More likely to have visited a hospital emergency department in the previous year. 	<p>There is marked decline in the health professional workforce capacity / service availability (measured by the FTE rate) for most types of healthcare professionals across Australia, except for general practitioners (GPs) as the remoteness area increases. This includes: Psychologists, Podiatrists, Physiotherapists, Pharmacists, Optometrists, Occupational Therapists, Specialist Medical Practitioners, Dentists and Chiropractors.</p> <p>Based on the 2016-17 Patient Experience Survey, there was little difference in the proportion of people who visited a GP between major cities and areas with increasing remoteness. However, people who lived in regional areas were less likely to have seen a GP after-hours (6.6% vs. 9.3%) or have visited a dental professional (44.6% vs. 50.0%). The AIHW <i>Australia's Health 2018</i> report suggests the relative lack of specialists and primary care professionals outside of major cities may be a reason why people living in inner regional and outer regional/remote/very remote areas were more likely to have visited a hospital emergency department in the previous year [236].</p>
<p>Access to continuity of GP services is limited for certain groups of people and in certain geographies</p>	<p>High unmet need for GP services in the NBMPHN region –</p> <p>A greater proportion (3.6%) of NBM general practice patients</p>	<p>Findings from the AIHW 2016 Survey of Health Care reveal that a higher proportion of patients (3.6% in NBMPHN, 2.5% nationally) don't have a usual GP or a usual place of care [239]. This is equivalent to 13,399 people based on current population estimates for the NBM region. Patient groups less likely to have a usual GP or place of care included:</p> <ul style="list-style-type: none"> • People younger than age 75 • Lived outside of major cities / metropolitan areas

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	<p>don't have a usual GP or a usual place of care compared to the Australian average (2.5%, NBM 7 of 31 PHNs). This was equivalent to 13,399 people in 2017.</p> <p>Accessing a GP and maintaining continuity of care with the same GP is increasingly difficult in the Blue Mountains, where there is a shortage of GPs.</p>	<ul style="list-style-type: none"> • Did not speak English at home • Had lower levels of education • Did not have private health insurance • Reported better health and less long-term health conditions <p>Not having a usual GP or a usual place of care was high in the NBM region compared to other PHN regions in Australia, ranking 7 of 31 PHNs. However, a higher proportion of patients in the NBMPHN (85.5%) region rated their care as excellent or very good compared to PHNs in Australia (84.1%), placing 9 of 31 PHNs.</p> <p>Over the 18 months to November 2018, reduced access to bulk billed GP visits was seen in the Blue Mountains, as well as longer waiting times to get an appointment to see a GP [240]. The larger general practice at Katoomba that previously bulk billed all appointments, now only bulk bills children and those with a health care card. This access barrier was echoed in the recent Blue Mountains GP Consultation meeting, and by Blue Mountains Hospital, which has seen a marked increase of non-urgent presentations to ED.</p>
<p>Barriers experienced with accessing care for long term health conditions</p>	<p>High need for primary care services –</p> <p>NBM adults are less likely to report excellent, very good or good health and more likely to report having a long-term condition compared to national averages.</p> <p>A higher proportion of NBM adults report experiencing barriers to accessing primary healthcare services, including:</p> <ul style="list-style-type: none"> • Not accessing a GP for urgent medical care • Waited longer than acceptable to get an appointment with a GP 	<p>Results from the Australian Bureau of Statistics 2016-17 Patient Experience Survey show that a smaller proportion of NBM adults report excellent, very good or good health (81.7%) compared to Australia (85.3%, 28 of 31 PHNs) and a greater proportion report having a long-term health condition (57.4%) compared to Australia (49.9%, 2 of 31 PHNs).</p> <p>Despite having the highest proportion of adults who saw a GP in the previous 12-months in Australia (88.2%, 1 of 31 PHNs), indicating a high level of demand for GP care, NBM adults also reported the following barriers to accessing primary healthcare services:</p> <ul style="list-style-type: none"> • Lower than national average for proportion who saw a GP for urgent medical care in the preceding 12 months – (9.2% vs. 11.2%, NBM 28 of 31 PHNs) • Higher than national average for proportion who felt they waited longer than acceptable to get an appointment with a GP – (28.2% vs. 22.6%), NBM 4 of 31 PHNs) • Highest ranked PHN for proportion who delayed or avoided filling a prescription due to cost in the preceding 12 months – (11.7% vs. 7.3%, NBM 1 of 31 PHNs) • Second highest ranked PHN for proportion who needed to see a GP but did not in the preceding 12 months – (19.8% vs. 14.1%, NBM 2 of 31 PHNs). • Lower than national average for proportion who saw a GP after hours in the preceding 12 months – (5.3% vs. 8.4%, NBM 26 of 31 PHNs).

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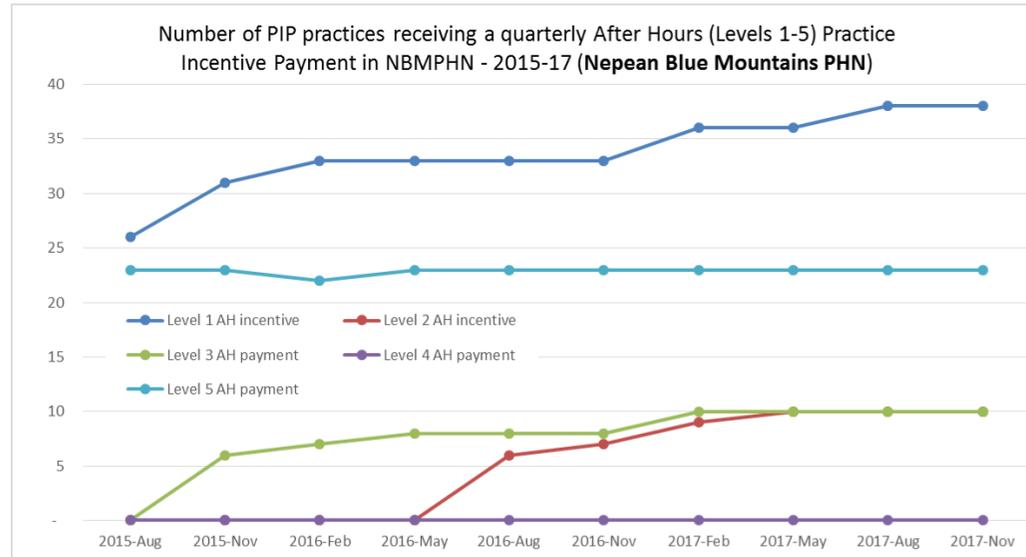
	<ul style="list-style-type: none"> • Delaying or avoiding filling a prescription due to cost • Needing to see a GP but did not • Seeing a GP in the after-hours period 	
Access to After-hours Primary Healthcare Services		
Impact of changing environment on After-hours services	<p>Impacts of the changed environment for service providers working in the After-Hours and Medical Deputising Service (MDS) space includes a reduction in the number of MDS providers, reduced MDS service demand and workforce shortages specifically in Lithgow LGA and the Blue Mountains LGA (Upper Mountains postcodes).</p>	<p>As a result of the 2017 MBS Taskforce review of urgent after hours MBS item utilisation, the Department of Health adopted and implemented some of the taskforce recommendations on 1 March 2018, including: Revision of the Guidelines for Approved Medical Deputising Services (AMDS) to set more explicit limits on advertising directly to consumers; introduction of minimum triage standards to better identify patients in need of urgent after hours services; and a reduction in the MBS fee payable to non-Vocationally Registered GPs working in metropolitan areas.</p> <p>The introduced changes have had various impacts on the operation of Medical Deputising Services (MDS) in the Nepean Blue mountains region including the reduction in the number of MDS service providers, reduced demand for these services, and workforce shortages for these services in certain areas [240, 242].</p> <p>Currently in the NBM region, there are a number of MDS operating, however this number has reduced. There remains no MDS in the majority of this region. Upper Mountains saw the withdrawal of the MDS in January 2018, due to the solo practitioner reaching retirement; Lower Mountains have a NBMPHN commissioned MDS however this service is often unavailable due to GPs workforce shortages. Service utilization in particular since March 2018; the Nepean area has 2-3 MDS operating; Hawkesbury has 1-2 MDS depending on location (2 in Windsor and Richmond, 1 in outer areas).</p> <p>Consumer feedback consistently points to Medical Deputising Services not having a large enough workforce to adequately cover this region. Consumers report that the home visiting services often don't have a doctor available in the after-hours period [242].</p>
Impact of the After Hours PP incentive on primary care providers	<p>A total of 81 (60%) NBM General Practices received an After Hours PIP incentive payment in November 2017.</p>	<p>Local General Practices contribute significantly to after-hours services. As at November 2017, 38 general practices were participating in Level 1 After Hours PIP, 10 in Level 2, 10 in Level 3, none in Level 4 and 23 in Level 5 [243]. The number of NBM PIP general practices receiving Level 2-5 After Hours payments between November 2016 and November 2017 remained steady, while an additional 5 practices received Level 1 After Hours payments in this time period (Figure 28).</p>

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The highest number and recent growth in NBM practices receiving an After Hours PIP incentive payment was for Level 1 After Hours Incentive (practice must ensure patients have access to care in the complete after hours period).

Steady growth in the utilisation of after-hours primary care services in the NBM region, with a higher number of After-Hours attendances per person compared to Australia.

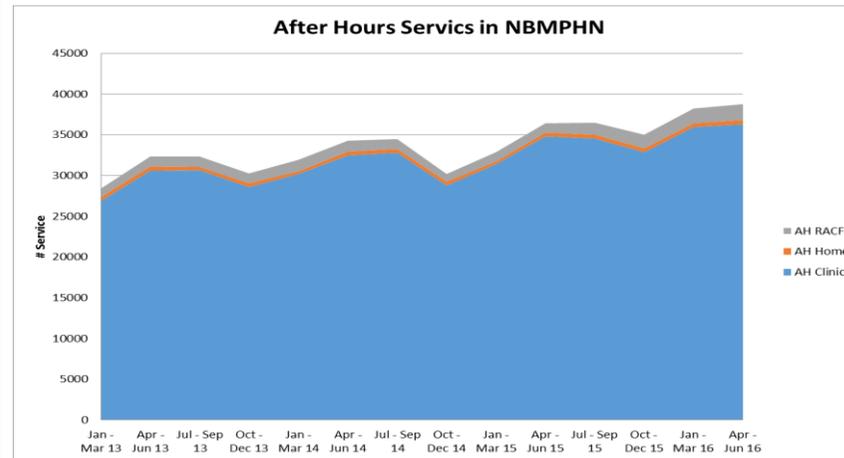
Figure 10: Trends in the number of NBMPHN PIP general practices receiving a quarterly After Hours Practice Incentive Payment between August 2015 and November 2017 [243].



Between January 2013 and June 2016, a large portion of after-hours primary services (94.7%) was carried out at a GP clinic, 4.0% at RACF and 1.3% at home. Figure 11 shows the trends of the after-hours primary care services in the Nepean-Blue Mountains region [244]. There is a steady growth in the service number, with higher numbers observed in the quarters including flu seasons (April – June and July – September). The average annual growth rate was 6.8% for the years 2013, 2014 and 2015.

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Figure 11: Trends of after-hours primary care services in the Nepean-Blue Mountains region, January 2013 – June 2016



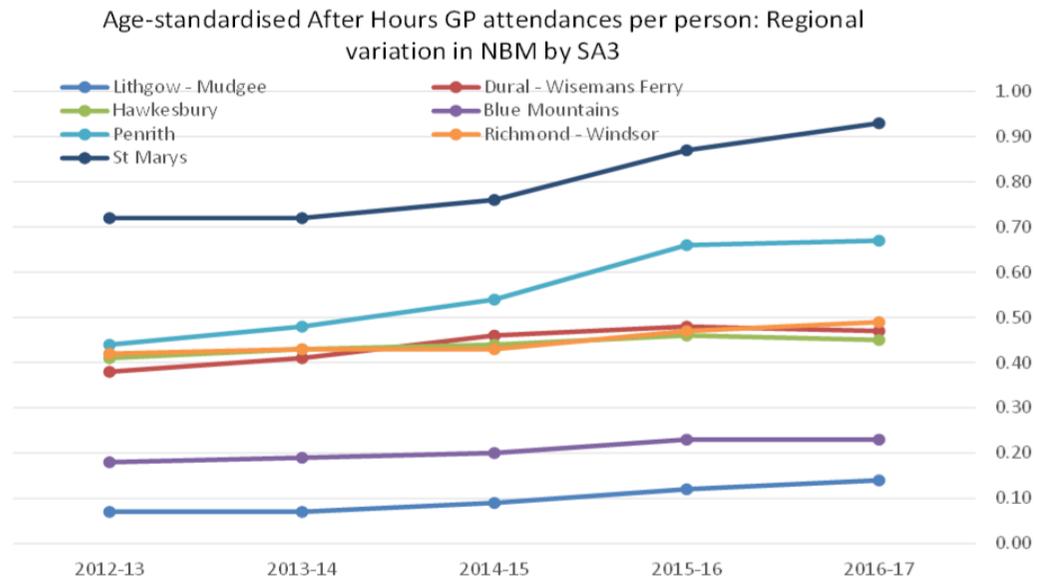
Analysis of trends in after-hours GP attendances per person in the Nepean-Blue Mountains region compared to Australia for 2013-14 to 2016-17 illustrates steady growth in the average number of after-hours GP attendances per person in NBM, and this occurred at a higher rate compared to the national average [244].

Figure 12 illustrates there was significant regional variation in after-hours GP attendances (utilisation) per person in the Nepean-Blue Mountains region by smaller geographical areas in 2013-14 to 2016-17 [245]. The highest rates of attendances per person consistently occurred in the St Marys and Penrith SA3 areas, and lowest rates consistently occurred in the Lithgow-Mudgee and Blue Mountains SA3 areas. Such low rates of after-hours GP attendances is likely to reflect inadequate coverage &/or poor access to after-hours GP services for residents living in these areas.

Consistently lowest rates of after-hours GP attendances in Lithgow-Mudgee and Blue Mountains SA3 areas is likely to reflect inadequate coverage &/or poor access to After Hours General Practice services.

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Figure 12: Trends in after-hours GP attendances per person in Nepean Blue Mountains PHN by smaller geographical areas (SA3), 2013-14 to 2016-17 [245]



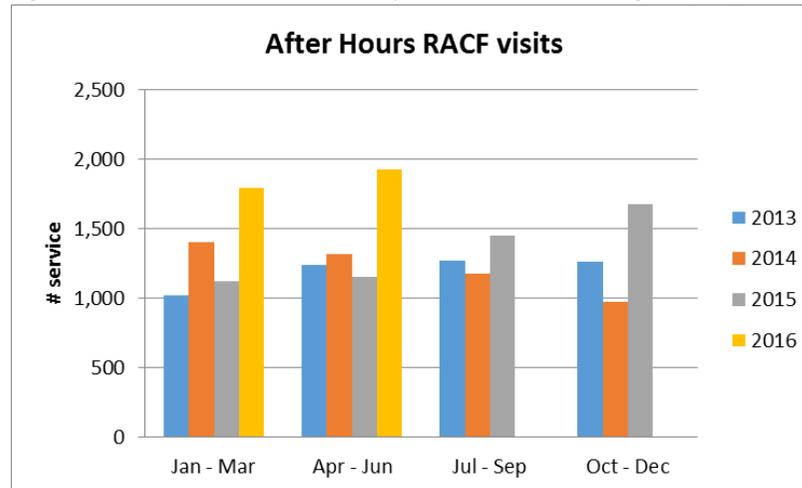
Unmet need for after-hours GP services within RACFs across the entire NBM region.

Figure 13 presents the number of after-hours RACF visits in the Nepean-Blue Mountains region from 2013-2016 [244]. There was relatively small growth in RACF after-hours services (1.5%) from 2013 to 2014 and a significant growth (11.0%) from 2014 to 2015. This could be a result of National Home Doctor Services (NHDS) (a large corporation owned MDS) active engagement with the RACFs in 2014 and the establishment of After Hours GP Service Blue Mountains (a VR-GP owned MDS) in 2015.

In 2016, After Hours GP Service Blue Mountains provided 387 after hours RACF visits in the Upper Mountains, compared to NHSD's 139 RACF visits in Lower Mountains. In September 2017, Dr Grewal (owner of After Hours GP Service Blue Mountains) verbally reported that he had 120 patients in five RACFs across the Upper Mountains whom he visited regularly. However, the After Hours GP Service Blue Mountains ceased operation in January 2018, with the impact of no current after-hours service being available for residents and residents of RACFs in the Upper Blue Mountains. @HomeGP verbally reported visits to approximately 50-100 residents in four RACFs in the Hawkesbury area during 2016-17.

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Figure 13. After Hours RACF visits in Nepean-Blue Mountains Regions [246]



RACFs in the region typically call resident’s regular GP first during after-hours. They also utilise the NHSD, RACF Liaison Officer and a Nurse Practitioner employed by Blue Mountains Hospital.

Medical Deputising Services may pose a problem to continuity of care for older people

In October 2015, NBMPHN interviewed 15 RACFs across the region to understand what actions were commonly taken when the residents require medical care during after-hours [247]. Most RACFs call residents’ regular GPs first; except four RACFs call NHSD. Three out of these four RACFs are located in Penrith. RACFs located in upper Blue Mountains often contact Dr Grewal at After Hours GP Service Blue Mountains if residents’ regular GPs are not available. They also utilise services provided by RACF Liaison Officer, a Nurse Practitioner employed by Blue Mountains Hospital.

There is some concern nationally regarding RACF visits provided by MDS doctors who do not have any long term relationship with RACF residents. Pond (2016) reviewed 357,112 bookings logged by a MDS in Melbourne, with a particular focus on services provided to older people [248]. Findings indicated that MDS doctors “are not equipped to care for these complex elderly patients in an optimal manner; they do not necessarily have a postgraduate qualification, they do not know the patient, and they are not supported by staff who are well trained and familiar with the medical conditions of each patient”. Pond further pointed out that ‘older’ people have high rates of dementia and may not be able to fully communicate their history. It takes time to trawl through medical notes in RAC facilities. This potentially reduces the quality of service compared with attendance by the patient’s own GP, who knows them and their medical history well.

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	<p>Local GPs’ unwillingness to visit RACF residents after hours</p> <p>Workforce shortage of GPs is a key factor influencing delivery of after-hours GP services in the region.</p>	<p>One of the RACFs in Penrith reported that ‘GPs do not do after hours’. In fact, only 48% of the BEACH GP sample in 2014–15 had visited an RAC facility in the previous month. Pond (2016) summarized the barriers to GPs visiting RACF residents, including ‘poor level of GP remuneration, increased time seeing patients, difficulty in finding staff (or indeed the patient), and staff with training below the levels of registered or enrolled nurse who are unable to hand over the patient history in a manner that makes medical sense’. An examples of handover comments include “Mrs Smith is a bit behavioural today”.</p> <p>Workforce shortage is one of the key challenges to delivering after hours primary care services in the NBMPHN region. Most areas in the region are currently classified as District of Workforce Shortage (DWS), evidencing the need for more GPs. The shortfall of doctors and the trend for doctors to prioritise work-life balance in the interests of sustainable practice and professional longevity are putting pressure on the provision of after-hours services.</p> <p>The annual collection of data on 100,000 GP consultations in Australia known as the BEACH study has revealed a GP workforce that is “more feminised, older ... and worked fewer hours per week” [249]. Other factors might include the dangers of after-hours visiting, stretched GP workforces, and a trend among GPs toward a better work–life balance. <i>Britt H, Miller GC, Henderson J, et al General practice activity in Australia 2014-15. Sydney: Sydney University Press, 2015.</i></p> <p>Similarly, in 2015 General practitioners had the highest proportion aged 55 or older (40.5%) of all clinician groups in 2015 [250]. The proportion of general practitioners who were women increased from 36.5% in 2005 to 42.1% in 2015.</p>
<p>Workforce challenges in maintaining local After-Hours GP services in the Hawkesbury region</p>	<p>Threefold increase in utilisation of the Penrith After Hours Doctors (after-hours GP service) since 2017 compared to the previous 10-year period.</p>	<p>An after-hours GP clinic staffed by local GPs (and managed originally by Nepean Division of General Practice, then Nepean Blue Mountains Medicare Local and then Nepean Blue Mountains PHN) operated on the grounds of Nepean Hospital for 10 years. In July 2017, as part of NBMPHN's move to commissioned services, Penrith After Hours Doctors successfully tendered to deliver the service and have been operating from the Nepean Centro shopping complex since that time. This service has seen a threefold increase in patient's accessing services in the after-hours period compared to the Nepean AH GP clinic [242].</p> <p>Medicare data for the period 2012-13 to 2016-17 for After-Hours GP clinic based services (MBS items 5000, 5020, 5040, 5060, 5200, 5203, 5207 and 5208) in the NBM region demonstrates there was a steady increase in services claimed, from 120,244 services in 2012-13 to 145,682 services (21.2% increase) in 2016-17 [251]. MBS data for the 2017-18 financial year is not currently available, however once available will be interesting to compare to After-Hours GP clinic services in the previous 5-year period.</p> <p>NBMPHN continues to support the Hawkesbury After Hours GP clinic, which operates under the direction of St John of God and Hawkesbury District Health Service. This clinic is on the grounds of Hawkesbury District Health Service in Windsor and relies on local GPs to provide the workforce for the clinic. Workforce shortages have resulted in the closure of the clinic for</p>

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	<p>Workforce challenges have resulted in a reduction in operating capacity and service utilisation of the Hawkesbury After Hours GP clinic.</p>	<p>a week in August 2018, and now reduction in opening hours from 7 days per week to 4 days per week. In 2017/18, 5,381 patients attended the Hawkesbury After Hours clinic representing a reduction from the previous year’s attendances. This was directly related to the number of clinic closures resulting from lack of GP workforce to staff the clinic.</p> <p>There has been a growing trend over the past year, especially in the more densely populated areas of Penrith and Windsor/Richmond for general practices to provide extended opening hours beyond the traditional 9am to 5pm Monday to Friday.</p>
<p>After Hours Use of Emergency Department Services</p>	<p>The high rate of after-hours Emergency Department attendances in Lithgow-Mudgee compared to other NBM smaller areas is likely to reflect inadequate coverage &/or poor access to after-hours GP services for residents.</p>	<p>Significant regional variation exists in the rate of after-hours Emergency Department attendances (utilisation) per 1,000 people in NBM by smaller geographical areas in 2013-14 to 2016-17 [252]. The highest rates per person consistently occurred in the Lithgow-Mudgee SA3 area, and was among the highest rates among NSW PHNs. After-hours ED attendance rates were similar at Blue Mountains Hospital Katoomba. Such high rates of after-hours ED attendances is likely to reflect inadequate coverage &/or poor access to after-hours GP services for residents.</p>
<p>High demand remains for health advice and access to a doctor in the after-hours period</p>	<p>There is significant demand for After-Hours primary care services in the NBM region, indicated by almost three quarters (73.1%) of the 19,065 calls to the Healthdirect helpline telephone triage and advice service in 2017-18 occurring in the after-hours period.</p> <p>More than one-third (34.9%) or 6,653 callers to the Healthdirect helpline service by NBM residents in 2017 were advised to see an After-Hours GP or to see a doctor within the next 2-12 hours.</p>	<p>From 1 July 2017 to 30 June 2018, 19,065 calls were made to the Healthdirect Nurse Triage Helpline from residents in the NBMPHN region [253]. Of these, almost three quarters (73.1%) were made during the following after-hours periods:</p> <ul style="list-style-type: none"> • Time 1 (6pm to 11pm weeknights) – 4,624 (24.3% of all calls) • Time 2 (11pm to 8am weekdays) – 2,638 (13.8% of all calls) • Time 3 (outside 8am to 12pm Saturday) – 2,527 (13.3% of all calls) • Time 4 (all day on Sundays and public holidays) – 4,145 (21.7% of all calls) <p>1,417 (7.4%) of these calls were later transferred to the After Hours GP Helpline. Callers to the Nurse Triage Helpline firstly speak with a registered nurse, who assesses their situation and advises what to do next.</p> <p>In 2017, of callers from the NBMPHN region to the Healthdirect Nurse Triage Helpline:</p> <ul style="list-style-type: none"> • 28.6% were advised to activate 000 or attend ED (despite 34.4% of people originally calling with this intention) • 8.5% were advised to see an After-Hours GP • 26.4% to see a doctor within the next 2-12 hours • 7.6% to see a doctor within the next 1-3 days • 4.6% to schedule an appointment with your GP at a convenient time • 20.6% of the callers did not know what to do and 12.2% were seeking advice for home/self-care.

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	Users' reported satisfaction with the Healthdirect after hours GP helpline is high although awareness of the services was low.	Lake et al. (2017) conducted a systematic review on the quality, safety and governance of telephone triage and advice services (TTAS) [254]. This review suggested that 'patient satisfaction with TTAS was generally high and there is some consistency of evidence of the ability of TTAS to reduce clinical workload. Similarly, McKenzie (2016) reported satisfaction with the Healthdirect after hours GP helpline was high, although awareness of the service was low [255].
Greater consumer awareness of HealthDirect After-hours GP helpline may contribute to ED avoidance	Lack of health information may result in unnecessary ED visits – only 7.1% of callers to the After-Hours GP helpline by NBM residents were directed to the ED, despite 29.2% of callers originally having this intention.	In 2017, 1,371 calls were made to the HealthDirect After Hours GP Helpline by residents in the NBMPHN region [253]. For 75.7% of calls, GPs advised callers to either self-care only, or self-care and see their GP or Healthcare Provider. 486 (35.5%) callers had originally intended to visit the emergency department (ED) or call 000 ambulance, however only 7.9% were advised to call 000 or visit an ED. Overall, only 7.1% of callers were directed to the ED, despite 29.2% of people originally calling with this intention.
Increased consumer knowledge of local Health services and Information for is needed	Poor knowledge of local health services and difficulties in obtaining information. This results in inappropriate presentations at hospital emergency departments among other things Online information on health symptoms has the potential to reduce medically unnecessary healthcare use.	Inadequate information about available services and eligibility has been raised previously by consumers from all LGAs [256]. Residents were not able to access existing services because of lack of awareness of those services. GPs and allied health professionals also experienced similar difficulties obtaining up to date information about available services and eligibility requirements The Healthdirect Symptom Check offers online information on health symptoms and is available to every Australian free of charge. A study in the Netherlands found that the valid online advice led to more medically appropriate decision-making for both non-urgent and urgent case scenarios [257]. Its results indicated that online advice has the highest potential to reduce medically unnecessary use compared to other demand management strategies such as co-payment, overview medical costs and GP appointment next morning. Furthermore it enhanced safety of parents' decisions on seeking help for their young children during out-of-hours primary care. The authors concluded that valid online information on health symptoms for patients should be promoted.
Specialist and Allied Health Services		
Specialist Healthcare Services	35.8% of NBM residents visited a specialist outside of hospital	In 2017-18, more than one third (35.8%) of Nepean Blue Mountains (NBM) residents visited a specialist outside of hospital . This was higher than the national average (31.0%) and the fourth highest proportion of people using specialist services among PHN regions in Australia (N = 31).

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	<p>Lowest proportion of residents who visited a specialist or psychiatrist outside of hospital in the Lithgow-Mudgee, St Marys and Penrith SA3 areas.</p> <p>Poorest access to specialist and psychiatry services tends to occur within NBM locations with the greatest disadvantage (Lithgow, St Marys and Penrith).</p>	<p>The proportion of the NBM population that visited a Medicare subsidised specialist (35.8%) or psychiatrist (1.86%) service outside of hospital in 2017-18 was <i>higher</i> than the national average [258]. Despite this, significant regional variation exists <i>within</i> the NBM region regarding utilisation of specialist and psychiatry services:</p> <ul style="list-style-type: none"> • The proportion of residents who visited a specialist was lowest in the Lithgow-Mudgee (32.3%), St Marys (33.4%) and Penrith (34.9%) SA3 areas. • The number of specialist services used per 100 people in the Lithgow-Mudgee SA3 (93.1) was lower compared to the national average (95.5). The number of specialist services used were next lowest in the St Marys (107.8) and Penrith (114.5) SA3 areas. • The proportion of residents who visited a psychiatrist in the Lithgow-Mudgee (1.2%) and St Marys (1.5%) SA3 areas was lower compared to the national average (1.6%). • The number of psychiatry services used per 100 people in the Lithgow-Mudgee (4.9), St Marys (5.6) and Penrith (7.1) SA3 areas was lower compared to the national average (95.5). <p>This data correlates to SEIFA Index of Relative Socio-economic Disadvantage scores for the NBM region, indicating that the poorest access to all specialist and psychiatry health care services tends to occur within NBM locations with the greatest disadvantage (Lithgow, St Marys and Penrith).</p>
<p>Allied Health Services</p>	<p>NBM residents using Medicare-subsidised allied health services increased from 31.3% to 35.7% in 2017-18</p> <p>More than 1 in 3 NBM residents or 35.7% accessed at least one Medicare-subsidised allied health service in 2017–18,</p>	<p>Between 2013–14 and 2017–18, the population proportion of NBM residents using Medicare-subsidised allied health services increased from 31.3% to 35.7%. In the same time period, the number of services per 100 people rose from 72.4 to 88.3 per 100 people. These increases parallel the national uptake for this time period [258]</p> <p>More than 1 in 3 NBM residents or 35.7% of the NBM population (equivalent to 133,029 persons) accessed at least one Medicare-subsidised allied health service in 2017–18, including:</p> <ul style="list-style-type: none"> • Optometry services (27.9% of the NBM population, equivalent to 103,853 persons). • Psychology and other allied mental healthcare (5.3%, 19,659 persons). • Physical Health Care, including physiotherapy, exercise physiology, chiropractic services and osteopathy (4.0%, 14,714 persons). • Other allied healthcare, including podiatry, dietetics, occupational therapy, speech pathology, diabetes education, audiology and other allied health services (5.5%, 20,553 persons). <p>Note: the same individual may have accessed a number of services across more than one service category sub-group; all data is reported by person’s place of residence</p>

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	<p>Lower proportion of NBM residents that accessed allied health services compared to the national average in certain SA3 areas:</p> <p>Allied mental health care: Lithgow-Mudgee, St Marys and Penrith SA3 areas</p> <p>Allied physical health care: Lithgow-Mudgee, Penrith, Hawkesbury, Blue Mountains and St Marys SA3 areas.</p> <p>Other allied health care: St Marys, Hawkesbury and Blue Mountains SA3 areas.</p> <p>Poorest access to allied healthcare tends to occur within NBM locations with the greatest disadvantage (Lithgow, St Marys and Penrith).</p>	<p>Variation in Allied Health Mental Health Care</p> <ul style="list-style-type: none"> The proportion of NBM residents who accessed an allied mental health care service was lower in the Lithgow-Mudgee (3.6%), St Marys (3.9%) and Penrith (4.9%) SA3 areas compared to the national average (1.6%). <p>Variation in Allied Physical Health Care</p> <ul style="list-style-type: none"> The proportion of NBM residents who accessed an allied physical health care service (including physiotherapy, exercise physiology, chiropractic services and osteopathy) in the Lithgow-Mudgee SA3 (2.1%) was less than half the national average (4.3%), and was lower in the Penrith (3.9%), Hawkesbury (4.0%), Blue Mountains (4.1%) and St Marys (4.2%) SA3 areas compared to the national average (1.6%). <p>Variation in Other Allied Health Care</p> <ul style="list-style-type: none"> The proportion of NBM residents who accessed other allied health care services (including podiatry, dietetics, occupational therapy, speech pathology, diabetes education, audiology and other allied health services) was lower in the St Marys (4.9%), Hawkesbury (5.0%) and Blue Mountains (5.4%) SA3 areas compared to the national average (5.5%). <p>This data correlates to SEIFA Index of Relative Socio-economic Disadvantage scores for the NBM region, indicating that the poorest access to allied mental health care services, allied physical health care services and other allied health care services tends to occur within NBM locations with the greatest disadvantage (Lithgow, St Marys and Penrith).</p>
Health Workforce		
<p>GP Workforce shortages remain throughout the region</p>	<p>Introduction of the new Distribution Priority Area scheme will impact GP recruitment efforts, particularly in the Blue Mountains LGA, most of Penrith and most of Hawkesbury LGAs which were previously classified as being a District of Workforce Shortage.</p>	<p>Historically, a large proportion of the NBM region was classified as being a District of Workforce Shortage (DWS) [259]. This allowed for overseas trained doctors and those on a medical bonded placement scheme to work in this region. Under the Commonwealth's Stronger Rural Health Strategy, the DWS system was replaced on 1 July 2019, with the new Distribution Priority Area scheme. Only the suburbs of Blackheath, Portland and Wallerawang are now classified as being Distribution Priority Areas (DPAs). Previously the entire Blue Mountains LGA, most of Penrith and Hawkesbury LGAs were considered DWS. The boundaries for DPAs will not be updated until July 2022.</p> <p>A high and growing proportion of GPs working in the NBM region are overseas trained doctors. In 2017, approximately 50% of GPs in the region gained their qualifications overseas. This change to DWS will impact GP recruitment efforts in the</p>

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		<p>region, although it will take time for that impact to be felt. Being a District of Workforce Shortage has previously helped to attract GPs to work in the region. For example, over the last four and a half years to July 2019, NBMPHN was able to help at least 25 doctors to obtain a provider number through a 19AB exemption, as the practice location was in DWS at that time.</p> <p>Key Points about the impact of DPA:</p> <ul style="list-style-type: none"> • Non-DPA practices may still be able to recruit following types of doctors. <ul style="list-style-type: none"> ○ An Australian trained doctor (non BMP) ○ An Australian trained doctor (on BMP) who has completed their return of service obligations. ○ OTD VR doctor who has served out the moratorium period ○ Temporary resident non-VR doctors for locum position up to 6 months ○ Australian permanent resident/citizen VR doctor (who was originally an OTD and still in moratorium) for locum positions up to 6 months. • The above categories of doctors are in great demand and our practices will be competing with inner metro practices (Sydney, Parramatta etc.) to attract them. • These changes will affect the following categories of doctors (who are commonly available) who may be interested to work in our region but unable to do so (certain exemptions available). <ul style="list-style-type: none"> ○ Overseas Trained Doctors serving a 10 year moratorium (VR or non-VR) ○ Australian trained doctors on a Bonded Medical Places (BMP) scheme and who are yet to finish their return of service obligations. A doctor on a BMP agrees to work in an area of workforce shortage for one to six years upon graduation, in exchange for a medical place at university. • Only General Practices in Portland, Wallerawang and Blackheath will benefit from DPA. They will be able to recruit from the majority of above categories of doctors. • Recruitment of a doctor, especially the non-vocationally registered (non-VR) overseas trained doctors (OTDs), can take a long time. • DPA won't affect registrar placements, but could affect the retention of registrars as followed GPs. • Therefore GP Registrar placements are not affected by the DPA. However, GP Registrars on a BMP will not be able to remain at a training practice once they have finished their GP training. Currently a small, but significant number of doctors do stay on at the general practice where they complete their GP registrar training. • There are certain special exemptions available e.g. 19AB replacement exemption, spousal exemption, after hours exemption, AMS exemption, locum exemption etc. However, they are very specific, hard to obtain and are only possible for specific reasons.
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		<p>In addition to the DWS changes, the Other Medical Practitioner (OMP) program was closed to new entrants on 1 January 2019. Existing OMPs program participants will be grandfathered until 30 June 2023, as long as they continue to meet program requirements. This change will affect the income of many non-VR doctors planning to work in rural general practices during after-hours period. Previously, eligible non-VR doctors were able to get higher Medicare rebate for working in rural areas (under ROMP) and/or after hours (under AHOMP). It may affect supply of doctors in rural areas and also for after-hours coverage.</p> <p>As part of the Commonwealth’s Stronger Rural Health Strategy, the Department of Health has started the More Doctors for Rural Australia Program (MDRAP) from 29 April 2019 to replace the Rural Locum Relief Program. The rules have changed significantly and could affect the replacement of doctors in Lithgow practices.</p>
	<p>High levels of attrition of general practice workforce due to aging of NBM workforce.</p>	<p>Consultations with general practitioners and regular retirements indicate that the NBM general practice workforce is aging and may not be replaced at the same rate as retirement. This is a particular concern among GPs from the Blue Mountains, and may also be indicated by the consistent District of Workforce Shortage status of the Blue Mountains [242, 260]. There are ongoing difficulties recruiting vocationally registered GPs to the outer metropolitan and rural areas of Blue Mountains and Lithgow. This is placing a considerable strain on the existing GP workforce.</p> <p>The Australian Health Practitioner Registration Authority (AHPRA) does not currently report workforce age profiles at regional levels however there are plans for APHRA to report age profiles according to PHN region in the near future.</p> <p>Local consultations indicate that the changes to the processes involved in general practice registrar placement may further compound GP workforce shortages. Practices can no longer rely on a Registrar being place with them. Registrars have a greater degree of choice now as to where they complete their training. Under the new arrangements it is more difficult to attract general practice registrars to regional and outer metro areas. The cessation of the Outer Metropolitan Incentive Grant (OMRIG) has imposed further challenges on retaining GP registrar in the region.</p>
<p>Limited availability of data to support workforce planning</p>	<p>Inadequate data to support regional planning for primary care workforce</p>	<p>Primary care workforce data for NSW and the NBM region is currently not maintained by a central authority. The National Health Services Directory (NHSD) contains a repository of health organisations (not individuals) across all four NBM LGAs but is reliant on NBMPHN and self-reporting to maintain currency.</p> <p>The NBMPHN regularly surveys practices and pharmacies to collect workforce data however these surveys are generally limited to practices, not individuals, and do not indicate FTEs for any workforce category [242]. National sources of data such as APHRA have limited application for regional planning purposes. Apart from General Practitioners and Practice Nurses working in General Practice, it is not currently possible to establish health workforce levels for primary healthcare professionals per LGA or for the region. This prevents the analysis of trends and development of strategies for support in all</p>

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		<p>areas including: Aboriginal Health, Mental Health and Suicide Prevention, Drug and Alcohol Services, chronic conditions, older adults, care coordination, general practice, nurse practitioners, and allied health professionals.</p> <p>Obtaining up-to-date regional workforce data via DoH's online data tabulation tool is problematic. Data is currently only available for the NBM region for 2014-17. The new Health Demand and Supply Utilisation Patterns Planning (HeaDS UPP) Tool due to be gradually released to PHNS in 2020 will provide an integrated source of health workforce and services data to help inform local workforce planning and analysis.</p>																																										
<p>Relative shortage of GP workforce</p>	<p>The GP to population ratio in the NBMPHN region (130 GP per 100,000 people), including all LGAs is relatively lower compared to the national (145) and NSW average (139), indicating a relative shortage of GP workforce.</p>	<p>The rate of supply of GPs in each LGA remained relatively steady between 2013 and 2018 (Table 14) [237, 261]. The estimated number of GPs per 100,000 population in 2018 for the NBMPHN region was 130 (133 in Blue Mountains LGA, 127 in Penrith LGA, 144 in Lithgow LGA and 132 in Hawkesbury LGA). This compares to 145 in Australia and 139 in NSW for 2016-17. It is important to note this data does not take into account whether GPs worked Full Time or Part Time.</p> <p>Table 14. Number of General Practitioners in the four Nepean Blue Mountains PHN region LGAs in 2013-2018 [237, 261]</p> <table border="1" data-bbox="824 683 1899 1050"> <thead> <tr> <th></th> <th>Blue Mountains</th> <th>Penrith</th> <th>Lithgow</th> <th>Hawkesbury</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>82</td> <td>171</td> <td>26</td> <td>75</td> <td>354</td> </tr> <tr> <td>2014</td> <td>79</td> <td>177</td> <td>29</td> <td>71</td> <td>356</td> </tr> <tr> <td>2015</td> <td>85</td> <td>183</td> <td>30</td> <td>75</td> <td>373</td> </tr> <tr> <td>2017</td> <td>92</td> <td>240</td> <td>32</td> <td>82</td> <td>446</td> </tr> <tr> <td>2018</td> <td>105</td> <td>261</td> <td>31</td> <td>88</td> <td>485</td> </tr> <tr> <td>2018 GP per 100,000 population</td> <td>133</td> <td>127</td> <td>144</td> <td>132</td> <td>130</td> </tr> </tbody> </table>		Blue Mountains	Penrith	Lithgow	Hawkesbury	Total	2013	82	171	26	75	354	2014	79	177	29	71	356	2015	85	183	30	75	373	2017	92	240	32	82	446	2018	105	261	31	88	485	2018 GP per 100,000 population	133	127	144	132	130
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<p>Less nurses employed in NBM general practices than national average</p>	<p>A smaller proportion of General Practices in the NBM region (53%) employ at least one nurse compared to the Australian average (63%).</p> <p>Predicted shortages in the General Practice nursing</p>	<p>Practice nurses play a critical role in delivering continuous care to patients at general practice. There has been slow yet steady growth in the number of practice nurses in the four NBM LGAs between 2013 and 2018 (Table 15).</p> <p>Table 15. Number of practice nurses in in the four Nepean Blue Mountains PHN region LGAs in 2013-2018 [237, 261]</p> <table border="1" data-bbox="824 1219 1899 1331"> <thead> <tr> <th></th> <th>Blue Mountains</th> <th>Lithgow</th> <th>Penrith</th> <th>Hawkesbury</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>32</td> <td>15</td> <td>57</td> <td>21</td> <td>125</td> </tr> </tbody> </table>		Blue Mountains	Lithgow	Penrith	Hawkesbury	Total	2013	32	15	57	21	125																														
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	<p>workforce in Australia is likely to impact the quality and costs of patient care.</p>	<table border="1"> <tr> <td>2014</td> <td>33</td> <td>11</td> <td>77</td> <td>22</td> <td>143</td> </tr> <tr> <td>2015</td> <td>36</td> <td>14</td> <td>65</td> <td>22</td> <td>137</td> </tr> <tr> <td>2017</td> <td>36</td> <td>15</td> <td>71</td> <td>28</td> <td>150</td> </tr> <tr> <td>2018</td> <td>47</td> <td>19</td> <td>89</td> <td>28</td> <td>183</td> </tr> </table>	2014	33	11	77	22	143	2015	36	14	65	22	137	2017	36	15	71	28	150	2018	47	19	89	28	183	<p>As at 8 November 2018, 71 (52.6%) of General Practices in the NBM region employed at least one nurse. This compared to 63% across Australia in 2012 [237, 262].</p> <p>A simulation model developed to project changes to the General Practice Nursing (GPN) workforce in Australia for the 2012-2025 time period found the Australian Practice Nurse workforce is predicted to move into a position of shortage over this time period [263]. The impact of GPN shortages on practices are likely to include:</p> <ul style="list-style-type: none"> • Difficulty managing the increasing rates of complex health conditions and chronic disease • Increased GP workloads • Limited practice participation in new models of care and result in increased costs of care. <p>Nurses in general practice are an essential part of the primary health care workforce solution. However, there are no standardized position descriptions or agreed set of competencies or accreditation requirements for general practice nurses. The lack of a clear career path into general practice makes it difficult to sustain future growth in demand [263].</p> <p>Afzali et al. (2014) conducted a 3-year observational study in Australia to estimate costs and outcomes associated with increased practice nurse involvement in clinical-based activities for the management of diabetes and obesity [264]. Their findings suggested that the active involvement of practice nurses in collaborative clinical-based activities is cost-effective, as well as addressing general practice workforce issues.</p>
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<p>Limited mental health workforce capacity</p>	<p>There is a general view that workforce capacity for mental health in the region could be substantially improved with training and skills development (including GPs and other primary healthcare professionals).</p>	<p>Further research is needed to examine the potential sources of the issues raised by stakeholders to develop appropriate options. The concerns raised by stakeholders were [139, 141-142]:</p> <ul style="list-style-type: none"> • Increase GPs knowledge of available clinical and non-clinical services and their referral pathways. • Increase GP capacity to identify early if consumer needs more intensive treatment (not provided through ATAPS or Medicare) such as MHNIP. • Variable GP mental health engagement in region. • Need for trauma education for health professionals. • Lack of GP Education dual diagnosis drug and alcohol & severe mental illness. • Insufficient dual diagnosis support and supervision for private therapist. 																									

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		<ul style="list-style-type: none"> • Lack of GP education in relation to depression in the elderly. • Lack of peer workers to help increase consumer health literacy, understanding of treatment and psycho-social support options and to provide support for people while in acute care and in the community – identified as a high need by consumer group. • Lack of support workers who are available after hours and on weekends.
Limited health workforce capacity affecting CALD Populations	Need for enhanced workforce training to support special needs of CALD populations with mental illness.	<p>A range of workforce issues have been identified affecting CALD populations. These include awareness of support services for CALD populations (translator services) and transcultural competency. Further research and consultation is required to establish the main CALD groups of concern and options for providing enhanced training and support to the workforce.</p> <p>The concerns raised in preliminary stakeholder consultation include the following [139, 147]:</p> <ul style="list-style-type: none"> • More education is needed for clinicians in relation to the high number of psychosomatic disorders within the CALD community. • GP’s need more education in working with CALD communities in relation to their mental health – lack of cultural understanding • Lack of training provided to GP’s / Allied Health in using Telephone Translation Services. • Lack of public/service provider awareness of CALD mental health provision. • Lack of transcultural competency in workforce. • Education, information and mental health literacy for CALD community organisations on existing mental health services so they can support their communities adequately.
Access to digital health		
Increase the meaningful use of My Health Record by health care providers	Meaningful use of My Health Record across the region is needed to support information exchange between health care providers about patient care and management.	<p>The My Health Record (MHR) opt-out trial was conducted across the NBM region during 2016-17 resulting in a less than 2% opt out rate an 98% of the NBM population now having a secure electronic health record. The MHR enables sharing of an individual’s health record between primary care providers including pharmacy and hospitals. This includes an individual’s health summary uploaded by their GP, an individual’s advance care directive uploaded by the individual, and a discharge summary uploaded by the hospital.</p> <p>As one of the MHR trial sites, and now as part of the MHR opt-out national expansion, the NBM region now has 104 General Practices (of the 117 computerised Practices in the region) registered to upload shared health summaries. For the 2017-18 FY, 16,431 shared health summaries were uploaded by Practices in the NBM region, 1,611 discharge summaries were viewed and 2,276 shared health summaries were viewed by others. In the same time period, 312,107 pharmacy prescription dispense records were uploaded to MHR [265].</p>

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		<p>NBM is part of the expansion program for the National Opt-out MHR Program. NBMPHN has percentage increases targeted for the number of General Practices uploading and number of uploads per Practice [266]. Over the next 12-months, progression of meaningful use by both primary and acute care providers, including regularly uploading and viewing information will also continue. In 2018, NBMPHN in partnership with Ernest & Young launched its Digital Health Strategy for the NBM region for 2018-2021 period, including a digital maturity review of primary care [267]. Integrating primary and secondary care patient information in real-time remains an ongoing challenge in the NBM region.</p>
<p>Health Transport</p>		
<p>Health transport for NBM residents is limited</p>	<p>NBM residents often have difficulty or are unable to travel for health care due to inadequate transport options.</p> <p>NBM residents, particularly persons living in the Hawkesbury or Lithgow LGA, persons from low socioeconomic backgrounds or those with poor mobility frequently experience difficulties accessing health care due to inadequate transport options.</p>	<p>Consumer forums previously undertaken across the region have consistently reported that transport options were inadequate for their needs either due to high cost or lack of suitable transport services. The region is geographically diverse and depending on the LGA and remoteness of the location, the main transport flows may run contrary to the location of the nearest specialist health services. Long waiting times are often experienced for public transport and private transport may be costly due to long distances travelled.</p> <p>Examples of problems experienced by consumers include: discharge from hospital after hours and no available transport services; difficulties accessing dialysis via public transport requiring multiple modes of transport; hospital parking difficulty and expense [6].</p> <p>The Health Transport Initiative established by the NBMPHN brought together key stakeholders involved in health and transport services, together with consumer representatives to develop options for improved transport services for health consumers, especially targeting special needs groups [268]. Research identified that 10,438 residents had reported often having difficulty or were unable to travel to places due to lack of transport over a 12 month period. This Group proposed that there was increasing demand for health transport and inadequate funding throughout NSW, and found that special needs groups such as Aboriginal people and people with cancer were especially disadvantaged by inadequate transport options in the region. The Group reported that inadequate transport may deny special needs groups access to basic health services.</p> <p>The NBMPHN Community Health Transport Initiative has compiled and made available local transport options for each LGA. These options can be accessed via the NBMPHN website. http://www.nbmphn.com.au/Community/Programs-Services/Health-Transport-Initiative.aspx</p> <p>Health consumers in the NBM cited the following specific issues and challenges experienced with accessing health transport across the region in 2017 [269]:</p>

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		<ul style="list-style-type: none"> • Hawkesbury LGA - limited North-South transport options between Hawkesbury and Penrith (Penrith has a relatively higher concentration of specialist services) • Hawkesbury LGA – no direct trains into the city or to Westmead (to access Westmead hospital) • Lithgow LGA – high cost of transport due to long travel distance to Nepean Hospital and high cost of fares via the local private bus company • Lithgow LGA - to get to Lithgow station you have to pay twice due to Opal ticket rules where a bus trip does not count towards the cost of a fare due to rural classification • High relative cost of transport for persons from low socioeconomic backgrounds • Poor transport availability after-hours, e.g. 6am or after hours at night • High number of connections and travel-time required to get to destination • Public transport is often not an option due to illness or mobility limitations • Community transport operators frequently cancel services at short notice due to a lack of drivers • Difficulties in accessing specialists appointments due to inability to find suitable transport
<p>Access for populations with special needs and individuals at risk of poorer health outcomes</p>		
<p>Support and services for older people is limited</p>	<p>High demands for after-hours primary care by RACF residents</p> <p>Potentially avoidable general practitioner (PAGP) type presentations by older persons: older patients are over-represented in emergency departments (ED), with many presenting for conditions that could potentially be managed in general practice</p> <p>Inadequate support and lack of services for aged care and carers</p> <p>Poor knowledge of available services among older people</p>	<p>Activity data for the 2017-18 financial year by the NBMPHN commissioned MDS provider in the lower Blue Mountains indicates that on average, 13.1% of their after-hours visits were to RACF residents (195 visits) and 10% to older people living at home (141 visits). The proportion of after-hours visits to RACF residents and older people living at home varied by calendar month within this period, ranging from 5% to 22% and 5% to 15% of visits respectively.</p> <p>Mazza et al (2017) conducted a retrospective analysis of data comprising ED presentations by patients aged 70 years at public hospitals across metropolitan Melbourne from January 2008 to December 2012 [270]. This study found that potentially avoidable general practitioner (PAGP) type presentations, although declining, remain an important component of ED demand. PAGP type presentations comprised 13.9% of ED presentations by older adults 70+ years during the study period, with 58.7% of patients referred back to a medical officer including a GP. Patients presented for a wide array of conditions during periods that may indicate difficulty accessing a GP.</p> <p>Consumer forums conducted by the NBMML in each of the LGAs during 2012, indicated inadequate support and a lack of services for aged care and carers in all LGAs. The effects of increasing demand for these services due to the aging population were believed to be negatively impacting on access [6].</p> <p>During NBMPHN Aged Care Stakeholder’s Forum 2015, it was identified that access to services before crisis point including after-hours support is impeded by a lack of awareness among health professionals, carers and older people. Further,</p>

Outcomes of the service needs analysis – General Population Health, Priority Theme 1: *Access to Health Services*

		<p>primary care providers including General Practitioners have limited access to up-to-date and comprehensive information to support directing older persons to available support and services [271].</p>
<p>Support and services for people with disability is limited</p>	<p>High level of unmet need for GP services among persons with a disability – approximately 4.3% of the 2017 NBMPHN population (16,013 persons) needed to see a GP at least once in the previous 12 months but did not.</p>	<p>It is estimated that there were approximately 67,000 people (18% of the population) living with disability in the NBMPHN region in 2017 based on national survey findings in 2015 (36.9k in Penrith LGA, 12.0k in Hawkesbury LGA, 3.9k in Lithgow LGA and 14.2k in Blue Mountains LGA). Their need for GP services was 35 times more than people without disability [272].</p> <p>Survey findings also demonstrate a high level of unmet need for GP care from this cohort. Of those surveyed who had a disability, 23.9% needed to see a GP at least once in last 12 months but did not. The top 5 reasons were 1) decided not to seek care, 2) too busy or no time (including work, personal, family responsibilities), 3) other, 4) waiting time too long or not available at time required, and 5) cost [272].</p>

CANCER SCREENING AND PREVENTION

Outcomes of the service needs analysis – General Population Health, Priority Theme 2: <i>Cancer Screening and Prevention</i>		
Identified Need	Key Issue	Description of Evidence
Engaging patients and communities in cancer screening	Service provider barriers to engaging patients and community members in cancer screening	<p>Qualitative evaluation of previous NBMPHN cancer screening program activities identified the following service provider barriers to engaging patients and community members in screening [29]:</p> <ul style="list-style-type: none"> • Information technology challenges with general practice clinical software. • Lack of GP time, competing priorities or financial incentives to engage patients in screening. • Disconnect between the National Bowel Cancer Screening Program implementation and general practice. • Lack of standardized electronic systems for reporting screening results electronically into general practice clinical software. • Examples of poor teamwork within general practice teams due to lack of leadership. • Geographic and physical accessibility barriers to the mobile BreastScreen van
Systems for cancer screening results and reminders in primary care require enhancement	Poor integration of electronic systems for breast, cervical and bowel cancer screening results and reminders in primary care	<p>Previous consultations with general practices in the NBM region indicate poor integration exists between the electronic systems that primary care providers use to receive cancer screening test results, manage recalls and reminders for cancer screening, and to accurately identify under-screened or never-screened patients.</p> <p>Specific areas of poor integration include [30]:</p> <ul style="list-style-type: none"> • The default option is for practices to receive paper-based results for the National Bowel Cancer Screening Program. • Lack of standardisation in electronic ‘coding’ of Pap-test pathology results among pathology providers • Poor or no recording of cancer screening results into relevant ‘fields’ in Practice clinical software systems, without reliance on manual data entry by General Practitioners • Poor quality of practice data on patients screened, never-screened and last attended screening • High levels of difficulty or no ability of General Practitioners to interface with the relevant state-based cancer screening register to identify a patient’s screening history. • Difficulties in accurately identifying patients never-screened or overdue for screening using aggregate data within clinical software or external data extraction tools.
General practice referrals for patients undergoing colorectal screening	Extended wait times for colonoscopy compounded by limited referral information from General Practitioners	<p>A retrospective evaluation of 265 general practitioner referrals to specialist gastroenterologists for patients undergoing colorectal cancer screening (colonoscopy) at Nepean Hospital between September 2017 and May 2018 identified the following issues [31]:</p> <ul style="list-style-type: none"> • The mean time from GP referral to colonoscopy was approximately double recommended by clinical guidelines for triage category 1 (within 30 days) and 2 (within 90 days) patients • There was a low rate of colonoscopies performed within the time limit for patients within triage categories 1 and 2.

Outcomes of the service needs analysis – General Population Health, Priority Theme 2: *Cancer Screening and Prevention*

		<ul style="list-style-type: none"> • GP letters for colorectal screening frequently miss important information, such as past surgical history, past psychological history, relevant clinical findings, results of investigations to date, outline of management to date, or a possible differential diagnosis. • Not all GPs received follow-up letters from the gastroenterologist, if the patient did not attend a follow-up consultation with the gastroenterologist then a letter was not provided. • There is need for a pre-developed template or standardization of GP referral letters for colorectal cancer screening so that no important clinical information is missing.
<p>Barriers to Bowel Cancer Screening amongst CALD men</p>	<p>Common barriers to bowel cancer screening participation among CALD men in the NBM region included:</p> <ul style="list-style-type: none"> • Lack of knowledge • Low perceived risk • Fear and fatalism • Cultural health beliefs and customs • Test concerns and misconceptions • Lack of GP recommendation 	<p>Qualitative research between October 2017 and February 2018 identified the following barriers to participating in the National Bowel Cancer Screening Program among men from different CALD groups in the NBM region [32]:</p> <ul style="list-style-type: none"> • Lack of knowledge: being unaware of screening and low healthy literacy • Low perceived risk: a belief there was no need to screen due to lack of digestive symptoms or family history of cancer • Fear and fatalism: helplessness and futility regarding cancer, not wanting to know the test result • Sociocultural factors: language barriers, education level, transportation, income, health beliefs and customs • Test concerns and misconceptions: unpleasant, embarrassing and confusion with other tests and physical exams • Lack of GP recommendation: low endorsement of screening in primary care <p>Identified barriers to promoting the NBCSP among NBM primary care providers were:</p> <ul style="list-style-type: none"> • Limited opportunities to prompt participation as men “don’t come in much anyway”, that “getting men to visit the doctor is difficult” or when men did visit the doctor there were often other more pressing priorities to deal with. • Many male participants refused to do the test, despite its importance being explained. • Men tended to place more importance on other cancers such as prostate cancer. • Practical difficulties among male patients using the test kit, including a perception the test procedure and instructions were too complex, particularly for patients with low health literacy or who experience language barriers.
<p>Barriers to Cervical and Breast Cancer Screening amongst CALD women</p>	<p>Common barriers to cervical and breast screening participation among CALD women in the NBM region include:</p> <ul style="list-style-type: none"> • Access to Medicare and costs • Low education and health literacy 	<p>Qualitative research between October 2017 and February 2018 identified the following barriers to participating in cervical and breast cancer screening among women from different CALD groups in the NBM region [33]:</p> <ul style="list-style-type: none"> • Financial: lack of Medicare due to residency status and costs for follow-up appointments • Low education and health literacy • Language barriers and identity of interpreters • Fear and fatalism: avoidance of cancer screening due to the belief that once diagnosed there is no cure, side effects of treatment outweigh benefits, or God’s will • Individual barriers: past cancer screening experiences (their own and other women)

Outcomes of the service needs analysis – General Population Health, Priority Theme 2: *Cancer Screening and Prevention*

	<ul style="list-style-type: none"> • Language barriers and access to interpreters • Fear and fatalism • Individual barriers related to past screening experiences 	<p>Barriers specific to participation in cervical screening included:</p> <ul style="list-style-type: none"> • A clear preference for having a female practitioner perform screening / lack of availability of a female GP necessitating the need for referral elsewhere; preference for / availability of female-oriented health services; and need for complete privacy during screening. • Modesty; sensitivities and stigma in discussing sexual activities with health practitioners; history of trauma and genital mutilation; and dominant views from male relationships. • Discomfort and invasiveness of the test itself. <p>Barriers specific to participation in breast screening included:</p> <ul style="list-style-type: none"> • Difficulties among providers to establish if their patients had attended a breast-screen until receiving notification weeks later; transportation to the BreastScreen van, and for some lack of prompting by their GP. • Lack of awareness of the importance or possible benefits of breast screening due to earlier detection. • Individual prioritisation and knowledge of screening, mis-information about the perceived safety of screening, and physical discomfort experienced during a mammogram. <p>Needs and issues identified by NBM primary care providers to promote and maximise cervical and breast screening included:</p> <ul style="list-style-type: none"> • Referral networks and culturally appropriate services: female providers and culturally appropriate referral services that general practice and other providers could use to arrange cervical screening and preventive health advice for female patients, and facilitate tracing of results for regular GPs. • Training needs: Education and upskilling on breast examination, the new HPV screening process and screening in general for practice nurses, supported by a protocol around how to encourage screening in each of the screening programs; and training for all primary care providers in identifying and sensitively managing vulnerable and at-risk populations. • Extended consultation time limits: increased appointment time in particular where there were language barriers, presence of multiple health complaints or complex conditions, and where there was low awareness cancer screening. • The new HPV testing program: ongoing education of patients about the HPV vaccination, changes relating to the new program and continued need for cervical screening, especially because of concerns that the new test targets the HPV virus, not abnormal cells.
<p>Access to cervical screening among Refugee women and women from vulnerable groups</p>	<p>Poor access to cervical cancer screening among newly arrived Refugee women</p>	<p>Consultations with local service provider stakeholders have highlighted the following issues relating to poor access to cervical cancer screening among newly arrived Refugee women, women who have experienced trauma and women from vulnerable groups in the NBM region, in particular those settling or living in the Penrith LGA [34]:</p> <ul style="list-style-type: none"> • Limited number of primary care providers that understand and provide trauma informed care • Poor knowledge of screening programs among Refugee women

Outcomes of the service needs analysis – General Population Health, Priority Theme 2: *Cancer Screening and Prevention*

	<p>Poor access to cervical cancer screening among women who have experienced trauma or are from vulnerable groups</p>	<ul style="list-style-type: none"> • Limited number of providers who are sensitive to patient histories, have awareness of cultural issues and are perceived as culturally aware and safe (e.g. for Aboriginal and Torres Strait Islander women) • Limited access to female cervical screening providers • Limited use of interpreters within primary care to assist with comprehensive and thorough histories • Limited provision of health promotion among primary care providers that targets health issues for women from CALD backgrounds • Limited provision of long consultations in primary care in particular for addressing women’s health issues including cervical screening
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CHRONIC AND PREVENTABLE CONDITIONS

Outcomes of the service needs analysis – General Population Health, Priority Theme 3: <i>Chronic and Preventable Conditions</i>		
Identified Need	Key Issue	Description of Evidence
Asthma Use of chronic disease planning items for persons with asthma is under utilised	Significant proportions (67.6%) of adults with asthma in the NBM region are not accessing chronic disease planning items by General Practitioners.	Data from 64 of 131 (49%) of local general practices in the NBM region indicates that within the previous 12-months, of those patients diagnosed with asthma aged 16 years and older [35]: <ul style="list-style-type: none"> • 32.4% had a GP Management plan • 27.6% had team care arrangements • 18.4% had their GP management plan or team care arrangements reviewed. This data indicates a significant proportion of patients with asthma in the NBM region may be eligible for but are not accessing available MBS chronic disease planning items, coordinated by their general practitioner to assist management of their condition.
Bowel screening Access to colonoscopy services	Identified service issues relating to patient access to colonoscopy services in the NBM region indicate clear opportunities for enhancing service provision and integration between primary and tertiary levels of healthcare.	The HealthPathways Gastroenterology Clinical Working Group identified the following service issues and needs relating to patient access to colonoscopy services and the interface between primary and tertiary care settings [36]: <ul style="list-style-type: none"> • Lack of standardised GP referral protocols for colonoscopy (HealthPathways to address) • Need for secure messaging to allow electronic referrals to colonoscopy services for both public and private specialists (Redesign need) • There are no systems in place to recall public patients for colonoscopy (Redesign need) • Need for timely reports back to GPs, ideally by secure electronic means (Redesign need) • Need for GPs software to measure FOBT rates, recall patients for FOBT 2-yearly and effectively record patients who should be excluded from screening (Education need)
Cardio vascular disease (CVD) General practice assessment of absolute cardiovascular risk is limited	The proportion of NBM patients who have not had their CVD risk assessed according to recommended preventive guidelines is: <ul style="list-style-type: none"> • 46.7% of age-relevant adults • 64.6% of age-relevant Aboriginal Torres Strait Islander people 	Assessment of absolute CVD risk combines known risk factors to calculate the probability that an individual will develop a cardiovascular event, such as a myocardial infarction or stroke, or other vascular disease within a specified time frame (usually five years). Guidelines for preventive activities in general practice [37] recommend targeted screening and treatment for absolute CVD risk assessment at least every 2-years for all adults aged 45-74 years, and Aboriginal and Torres Strait Islander peoples aged 35 years and older, who are not known to have CVD or to be clinically determined to be at high risk. The National Heart Health report [38] suggests there is widespread under-treatment of CVD risk and poor routine incorporation in routine general practice. This is reflected in NBM general practice data [35], which indicates that among 64 of 131 (49%) of general practices in the NBM region, 46.7% of patients aged 45-74 years and 64.6% of Aboriginal and Torres Strait Islander patients aged 35-74 years had not had their CVD risk measured or recorded within the previous 2-years.

Outcomes of the service needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

<p>Cardio vascular disease (CVD)</p> <p>Use of chronic disease planning items for persons with CVD are under utilised</p>	<p>Significant proportions (51%) of people with CVD in the NBM region are not accessing chronic disease planning items by General Practitioners.</p>	<p>Data from 64 of 131 (49%) of local general practices in the NBM region indicates that within the previous 12-months, of those patients diagnosed with CVD and aged 18 years and older [35]:</p> <ul style="list-style-type: none"> • 49.0% had a GP Management plan • 46.0% had team care arrangements • 32.9% had their GP management plan or team care arrangements reviewed. <p>This data indicates a significant proportion of patients with CVD in the NBM region may be eligible for but are not accessing available MBS chronic disease planning items coordinated by their general practitioner, to assist management of their condition.</p>
<p>Chronic Obstructive Pulmonary Disease (COPD)</p> <p>General practice management of COPD is limited</p>	<p>Clear opportunities exist for improved management of COPD within NBM general practices, including:</p> <ul style="list-style-type: none"> • Measurement of spirometry • Timely pneumococcal vaccination • Uptake of written GP management plans 	<p>Local data from 13 COPD 'Collaborative' (vs. 51 non-'Collaborative') General Practices in the NBM region encompassing 911 patients indicates that the following services were used [35]:</p> <ul style="list-style-type: none"> • 32.5% (vs. 9.0%) of patients with a coded diagnosis of COPD had a spirometry result recorded • 41.3% (vs. 35.3%) of patients with a coded diagnosis of COPD are up to date with their pneumococcal vaccinations • 96.7% (vs. 93.5%) of patients with a coded diagnosis of COPD have had their smoking status recorded • 56.5% (51.1%) of patients with a coded diagnosis of COPD have a written GP management plan in place to manage their condition <p>This data illustrates future opportunities for improved management of patients with COPD among general practices in the NBM region.</p>
<p>Chronic Obstructive Pulmonary Disease (COPD)</p> <p>COPD services are limited within the Hawkesbury region</p>	<p>Lack of existing Pulmonary Rehabilitation services and resources in the Hawkesbury region</p>	<p>Previous consultations with service providers across the NBM region have indicated that patients with COPD in the Hawkesbury LGA have very few options available for hospital avoidance in times of acute exacerbation – the 'safest' option is to present to the local Emergency Department [39, 40].</p> <p>The following issues have been identified:</p> <ul style="list-style-type: none"> • Lack of preventative intervention services for COPD. • Lack of a broad range of local conservative management options (no pulmonary rehabilitation service), or post-discharge support available at Hawkesbury District Health service (HDHS) for patients with COPD • Challenges in collaboration across acute and primary health settings. • Difficulties experienced by patients accessing services due to distance and no public transport links available to connect with other services (i.e. Nepean Hospital in Penrith). • No dedicated COPD community health services in the Hawkesbury region.

Outcomes of the service needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

	<p>Timely access and better use of existing spirometry is needed within primary care.</p> <p>Care coordination and self-management for patients with COPD could be enhanced to reduce potentially preventable presentations to ED.</p>	<ul style="list-style-type: none"> • Perception of COPD rehabilitation as a hospital rather than health promotion/ prevention service. • Lack of access to supported/funded post-acute rehabilitation programs due to HDHS private hospital status. • Very little to no public allied health services are available or delivered for chronic and complex patients in the Hawkesbury • No private Allied Health services (Physiotherapy, Exercise Physiology or other) currently deliver services for COPD patients in Hawkesbury • Inability of the HDHS team to discharge COPD patients earlier from hospital due to a lack of supports available post-discharge. • General practitioners in Hawkesbury report being unable to refer their patients with COPD to education support programs which are accessible. <p>Throughout the region timely access to spirometry services and capacity within primary care nurses to use and interpret existing spirometry to full effect could be enhanced. Up to 50% of local General Practices in Hawkesbury indicate they offer spirometry, however others indicate limitations in time and capability to complete patient spirometry assessments. Availability of local spirometry services is limited in Hawkesbury with current availability through Nepean Hospital Respiratory Services (with extreme travel/distance barriers for patients) and private Respiratory Physicians with associated wait times and costs.</p> <p>Care coordination services for patients with COPD are limited, resulting in patients attending ED for aspects of care that could otherwise be addressed in part through increased connection to services and aspects of self-management.</p>
<p>Chronic Obstructive Pulmonary Disease (COPD)</p> <p>Regional COPD service redesign is required</p>	<p>Identified service issues and needs for effective COPD management in the NBM region indicate clear opportunities for enhancing service provision and integration between primary and tertiary levels of healthcare.</p>	<p>The HealthPathways COPD Clinical Working Group identified the following service issues relating to effective management of COPD patients between primary and tertiary care settings [41]:</p> <ul style="list-style-type: none"> • The need for improved interpretation and quality of spirometry in General Practice (GP and Practice Nurse Education, Redesign, and HealthPathways to address) • Lack of public respiratory outpatient departments at Lithgow, Blue Mountains or Hawkesbury hospitals (Redesign). • Long wait times for COPD patients to see specialist at Nepean respiratory outpatient department (HealthPathways – clear referral criteria and transfer back to GP guidelines for shared care). • Need for availability of GP advice for patient exacerbations (Redesign/HealthPathways) • Poor communication between primary and tertiary services in particular at transfers of patient care (Redesign) <ul style="list-style-type: none"> - GPs not able to access the hospital records system (CERNA) - Hospital/GP/Community records are not linked

Outcomes of the service needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

		<ul style="list-style-type: none"> - No alerts provided to GPs for patient admissions or on discharge from hospital • Insufficient smoking cessation services / need for smoking cessation clinics in all areas (Redesign) • Need for respiratory training for community nurses (Education) • Need for GP supports when discussing the move from active management to palliative care with patients and their families – difficult discussions (Education) • Erratic arrival of the flu vaccine at GP clinics (Redesign)
Chronic Pain	Indications there may be sub-optimal management of non-specific low back-pain in general practice compared to clinical guidelines.	<p>A recent survey by local Medical students revealed the following differences between management of nonspecific low back pain (NSLBP) and guideline recommendations within general practices in Greater Western Sydney [42]:</p> <ul style="list-style-type: none"> • Low overall adherence to guidelines for the use of imaging, pharmacological and non-pharmacological treatment. • Most (80%) participants used imaging as part of their diagnostic approach (not indicated by guidelines) • More than half (53.3%) had previously prescribed opioids as first-line treatment (not indicated by guidelines). • Bed rest was recommended by almost half (46.7%) of participants despite strong recommendations against this by guidelines. • One third (33.3%) of respondents did not use any guidelines to assist in their management of NSLPB. • Participant-reported barriers to effective management included cost of allied-health services, presence of comorbidities, and patient beliefs/expectations about back pain management (that immediate treatment is required).
Overweight and obesity Assessment of overweight and obesity in general practice is limited	A significant proportion of general practice patients in the NBM region have never had their body mass index (62.5%) or waist circumference (91%) assessed, according to recommended preventive guidelines.	<p>Guidelines for preventive activities in general practice recommend that body mass index (BMI) and waist circumference should be measured every two years and recorded in the medical record for all adults aged 18 years and older [37].</p> <p>Analysis of local data from 64 of 131 (49%) of general practices in the NBM region however indicates that 62.5% of active patients aged 18+ years had never previously had their body mass index (body mass and height) assessed at their general practice [35]. A further 91.2% of male patients and 91.9% of female patients aged 18+ years had never previously had their waist circumference assessed. This compares to estimates showing that 64% of adults in the NBM region were overweight or obese in 2017. This data indicates a significant proportion of persons attending general practices in the NBM region who are overweight or obese are likely to have missed opportunities for assessment of their BMI and waist circumference, and offered appropriate support (such as individual lifestyle education and skills training) or referral (such as for self-management support) to assist weight loss according to recommended preventive guidelines.</p>
Overweight and obesity	Identified service issues and needs for effective obesity	The HealthPathways Obesity Clinical Working Group identified the following service issues and needs relating to effective management of obese patients between primary and tertiary care settings [43]:

Outcomes of the service needs analysis – General Population Health, Priority Theme 3: *Chronic and Preventable Conditions*

<p>Obesity management across health sectors is limited</p>	<p>management in the NBM region indicate clear opportunities for enhancing service provision and integration between primary and tertiary levels of healthcare.</p>	<ul style="list-style-type: none"> • General Practitioner and Practice Nurse training in strategies for effective management of obese patients is needed (education) • MBS GP Management Plan / Team Care Arrangements items do not currently recognise obesity as a ‘chronic disease’ that can be used to access Allied Health services subsidised by Medicare (system change) • Limited access to publicly funded dietitians / allied health professionals (for example there are 2.5 FTE funded dietitian positions for the entire NBM region) (Redesign) • Private services such as those providing education, exercise &/or healthy eating advice are not known to GPs (HealthPathways) • The newly operating Nepean Metabolic Service at Nepean Hospital already has long waiting times for its services (currently 12-months to access if ‘low risk’ but obese). GPs need information to help these patients while waiting for clinic appointments (HealthPathways to provide clear referral criteria and transfer patients back to GP for shared care). • No electronic referral forms available for the Family Obesity clinic – GPs are time poor and reluctant to complete clinic specific referrals that are not electronic (HealthPathways). • Existing inclusion criteria for the Family Obesity clinic are complicated (HealthPathways) • Access to the Family Obesity clinic is limited to business hours – difficult for employed people to attend (Redesign) • Need for a multidisciplinary approach for obesity management in the community (Redesign) • Need for upskilling of allied health professionals (e.g. Physiotherapists, Exercise Physiologists, Dietitians, Psychologists) with current evidence-based information (Education). <p>Further research is needed to explore the approaches to obesity assessment, prevention and management across primary care providers. Investigation needs to assess the tools used, models of care and the range of service providers involved.</p>
<p>Service integration between primary and tertiary care is limited</p>	<p>A lack of existing capacity across the NBMPHN and NBMLHD to address redesign initiatives the joint NBM HealthPathways initiative.</p>	<p>Recommendations from Clinical Working Group meetings taking place as a part of the local NBM “HealthPathways” initiative frequently identify system issues between primary and tertiary levels of healthcare that require well-funded and well-supported ‘redesign’ initiatives or projects, with dedicated staff at both the NBM Primary Health Network and Local Health District to be successfully addressed [44]. This capacity does not currently exist and if available, would provide an important enabler for driving successful primary and tertiary healthcare redesign, integration and local system reform.</p>

CULTURAL AND DEMOGRAPHIC FACTORS INFLUENCING HEALTH STATUS

Outcomes of the service needs analysis – General Population Health, Priority Theme 4: <i>Cultural and Demographic Factors Influencing Health Status</i>		
Identified Need	Key Issue	Description of Evidence
Culturally appropriate services	Poor access to culturally appropriate and assertive follow-up services for newly arrived refugees in primary care	<p>Common health needs among humanitarian arrivals include mental health issues including trauma from issues of torture, and physical health issues including diabetes, dental health, women’s sexual and reproductive health, diet related issues such as malnutrition and changing food patterns post-migration leading to obesity. Interviews with service providers who provide health, mental health, and community and settlement services to Syrian and Iraqi refugees settling in the NBM region identified significant challenges in meeting the complex needs of the diverse populations [50]. Some of the issues raised through this research include:</p> <p>Barriers to health seeking:</p> <ul style="list-style-type: none"> • Poor awareness of physical and mental health issues, and lack of seeking physical and mental health services • Lack of cultural appropriateness or modification to meet the needs of refugee communities among some services • Cases of breaches in client confidentiality by interpreters • Fear of being diagnosed with a mental illness • Cost (MBS gap fees) <p>Health service provision:</p> <ul style="list-style-type: none"> • Existing health service staff under constant pressure, overworked and understaffed • Under resourcing a reason for lack of modification of services to increase outreach and engagement with refugee communities • Most services provided in English and limited use of interpretation services • Poor cultural awareness among General Practitioners and lack of awareness of settlement services for referral purposes • Poor patient follow-up and mechanisms for recording patient background information • Poor communication and engagement among service providers • Need to identify General Practitioners who are committed and interested in working closely with refugees
	High cost of Interpreter services	Interpreter services for accessing Allied Health services is not funded by any source. Service providers who can access a funded priority line include GPs, Pharmacists and Real Estate Agents. It is therefore cost-prohibitive to access Allied Health services by persons who do not speak English well or do not speak English at all [68].

END OF LIFE CARE

Outcomes of the service needs analysis – General Population Health, Priority Theme 5: <i>End of Life Care</i>		
Identified Need	Key Issue	Description of Evidence
End of Life Care	<p>End of Life Care (EoLC) discussions often commence at a time of crisis</p> <p>Poor coordination of EoLC across the region</p> <p>Capacity and capability of health workforce to support end of life care is limited throughout the region</p>	<p>Consultations with health service providers and other stakeholders in the NBM region highlighted that EoLC discussions often commence at a time of crisis, rather than when there are initial signs that a person is entering the final phase of their life [51].</p> <p>Key drivers for this issue identified during consultations include:</p> <ul style="list-style-type: none"> • Many GPs lack training in EoLC • Many health professionals are uncomfortable talking about EoL • Lack of ability to recognise the dying • Junior staff are usually the first contacts with acute patients • Carers are frequently unprepared for or not supported to provide EoLC • Advanced care plans are often given to patients and carers along with other material required by Residential Aged Care Facilities <p>Consequences of this issue identified during consultations include:</p> <ul style="list-style-type: none"> • Advanced care plans are often developed in a time of crisis and in a rush • Frequent kneejerk reactions to crisis, referrals of patients to hospital without understanding of what the hospital can and cannot do • Patients turn up to Emergency Care with little information to guide Emergency Care clinicians • Information provision around Advanced Care Plans are often incorrect • Patients distressed and confused • Unnecessary use of resources
	Limited availability, quality, and use of Advance Care Plans when needed	<p>Consultations with health service providers and other stakeholders in the NBM region also highlighted poor communication and coordination practices exist with the use of Advance Care Plans between care providers, RACFs, carers and patients including [51]:</p> <ul style="list-style-type: none"> • Poor communication across agencies and often working in isolation. • RACF's have a vested interest in their own documentation, leading to inconsistencies in format and quality across Advanced Care Plans. • Advanced Care Plans are often given to patients and carers along with other material required by the RACF, with information provided often incorrect.

Outcomes of the service needs analysis – General Population Health, Priority Theme 5: *End of Life Care*

	<p>Advance care plans are patient driven on My Health Record, often leaving out health care providers in the development and viewing of the ACP</p>	<ul style="list-style-type: none"> • EoL information given to patients and carers at RACFs is often provided by junior Nurse / someone not skilled or sufficiently experienced to discuss the issues that the document may raise for the patient and or their carers. <p>Consequences of this issue identified during consultations include:</p> <ul style="list-style-type: none"> • Discussions about EoL are often late, handled poorly and based on incorrect information. • Advanced Care Plans often being completed far too late and EoL discussions commencing at a time of crisis. • Delays in patient care, or patients being taken to hospital unnecessarily. • Difficulties in providing best care and correct understanding of medications and allergies by care providers. • Stress for patients and families • Unnecessary use of resources <p>Advance care plans are available through the My Health Record, however they are patient driven and currently must be uploaded by patients and are not able to be viewed by hospitals. GPs are also not alerted to their existence unless the patient advises. This can leave GPs and other health care providers unaware of the existence of the ACP when required.</p>
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OLDER PERSONS

Outcomes of the service needs analysis – General Population Health, Priority Theme 6: <i>Older Persons</i>		
Identified Need	Key Issue	Description of Evidence
<p>Older Persons</p> <p>Limited access to health services</p>	<p>Indications that access to services is hindered due to transport issues, cost of transport, waiting lists and operating hours of service.</p> <p>Poor knowledge of local health services and difficulty obtaining information.</p>	<p>Consultations and review of the previous NBM Medicare Local needs assessment 2014 indicate [69-71]:</p> <p>Poor access due to</p> <ul style="list-style-type: none"> • long wait lists for ACAT/ CHC’s • long wait times, lack of service availability and high demand for: domestic assistance, personal care and respite services • Limited parking availability and parking costs • unsuitable and high costs of public transport, in particular private bus company services in Lithgow LGA • limited North-South public transport available between Hawkesbury and Penrith LGAs • unreliable community transport – frequent cancellations due to a lack of drivers • lack of after-hours and weekend services • difficulties navigating available services, including knowledge of who providers are, where they go, eligibility criteria • not having Information Technology (IT) or being IT literate
<p>Older Persons</p> <p>Residential Aged Care</p>	<p>The number of beds in residential aged care is inadequate for projected population growth</p>	<p>The NBM region has 28 Residential Aged Care Facilities (RACF) with capacity for around 2,550 residents. If ageing projections are fulfilled, there will not be enough RACF beds or GPs working within RACFs to cater for the needs of the ageing population [60, 72]. The number of RACFs and available beds/places in each LGA is:</p> <ul style="list-style-type: none"> • Blue Mountains – 7 facilities; 672 beds • Hawkesbury – 6 facilities; 450 beds • Lithgow – 3 facilities; 171 beds • Penrith – 13 facilities; 1260 beds <p>Comparison of service data indicates there are relatively fewer places available per 1,000 people in residential care for the NBM population 70 years and older (67.5) compared to the NSW state (77.5) and nationally (75.9). Service data further indicates fewer NBM residents (40.0) per 1,000 population aged 65 years and older accessed residential care to June 2018 compared to NSW (47.6) and Australia (46.4) [72]. While further research is needed to explore why fewer NBM residents accessed residential care compared to state and national rates, local anecdotal evidence indicates a relative shortage in places available (supply) is a contributing factor.</p>
	<p>Poor access to, representation and utilisation of General Practitioner services</p>	<p>Currently attracting a workforce of general practitioners to support the care of RACF residents is also an identified challenge. Interviews with RACF service providers in the NBM region have revealed a number of issues around poor access to and utilisation of General Practitioner services within RACFs [73]. These include:</p> <ul style="list-style-type: none"> • Poor access to General Practitioner services

Outcomes of the service needs analysis – General Population Health, Priority Theme 6: *Older Persons*

	among Residential Aged Care Facilities	<ul style="list-style-type: none"> • Under-utilisation of General Practitioner preventive health services, for example low rates of immunisations • Lack of 24-hour access to nursing care and support due to lack of available nursing staff after hours • Increasing patient presentations to hospital ED for minor issues such as wound care, due to shortages in skilled nursing workforce available after hours
Dementia	<p>Diagnosis and services are limited for People with dementia</p> <p>Identified issues relating to effective service provision for persons with dementia in the NBM region include:</p> <ul style="list-style-type: none"> • Lack of early diagnosis • Variability in GP skills and knowledge for identifying dementia & practitioner barriers to coordinating care • Gaps in dementia care across the NBM region • Inequity in access to care 	<p>Key issues and needs identified by primary care professionals relating to effective service provision and care for persons with dementia in the NBM region include [63]:</p> <p>Lack of Early Diagnosis:</p> <ul style="list-style-type: none"> • Many carers, in particular those among the older population lack awareness of services available for early care, diagnosis and support for persons with dementia, increasing the risk for avoidable hospital admissions. • Persons with dementia, their carers or family members need improved access to early diagnosis and early intervention care. <p>Variability in GP skills and knowledge for identifying dementia &/or barriers to coordinating care:</p> <ul style="list-style-type: none"> • Variability in general practitioner’s knowledge, skills and protocols for identifying and addressing dementia early. • Variable skills among GPs and other primary care clinicians regarding knowing when and where to refer on. • GPs currently experience difficulties accessing telephone support (e.g. from specialist services) and make limited referrals to Geriatrician services. <p>Poor morbidity experienced among dementia patients:</p> <ul style="list-style-type: none"> • Commonly held view among many providers and the broader public that dementia patients are unable to make functional gains, however this may delay dementia patients accessing the services they need (that would have beneficial outcomes). <p>Gaps in dementia care across the NBM region:</p> <ul style="list-style-type: none"> • Lack of adequate supports currently available for carers of persons with dementia. • Persons with dementia do not always get their other basic health needs met such as dental care, with difficulties in providing informed consent a barrier. • The importance of a Medical Admissions Unit within hospital for people with dementia to have as a “back door” entry to hospital, however such a unit is not available within 3 of the NBM region’s hospitals (currently available only at Nepean hospital). • Many dedicated professionals working in the sector are not well supported to perform their role. <p>Inequity in access to care:</p>

Outcomes of the service needs analysis – General Population Health, Priority Theme 6: *Older Persons*

		<ul style="list-style-type: none">• Limited dedicated services for people with dementia outside of the Penrith LGA.• Poor access to services for Aboriginal people with dementia, due to fear of services and the need for improved cultural competence among service providers.• Poor access to services among LGBTI people with dementia, in particular due to heightened stigma around both dementia and their sexuality combined.
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Primary Mental Health Care (including Suicide Prevention)

SUICIDE PREVENTION

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>		
Identified Need	Key Issue	Description of Evidence
Referral Pathways	Wide variation in referral pathways for people at risk of suicide.	<p>The perceived barriers and problems concerned with referral for people at risk of suicide include [91, 117]:</p> <ul style="list-style-type: none"> • Lack of easily understood and accessible clinical referral pathways. • Lack of easily understood and accessible community program referral pathways. • Lack of utilisation in some regions of Psychological Therapy Services “Seek Out Support” for mild to moderate suicidality.
Gaps And Barriers To Service Provision	There are a number of key barriers to accessing appropriate services to support people in the community, who have a history of self-harm, suicide ideation or suicide attempt.	<p>Limited or absent support in the community for people at risk of suicide has been identified at all levels of primary care. This includes inadequate support after discharge from hospital due to limited service availability coupled with long waiting lists. Overall stakeholders perceive the absence of appropriate community based support for people at risk of suicide either due to too few services with long waiting lists, or needed services that are not provided, or inappropriate services.</p> <p>Previous stakeholder consultation has identified the following concerns regarding barriers to service provision for suicide prevention [91, 118-119]. Further investigations are needed to clarify the range of service models needed and where they may be located.</p> <ul style="list-style-type: none"> • Lack of support in the community following discharge from MH inpatient unit. • Limited access to community MH programs due to waiting lists. Lack of appropriate community programs in the region. • Lack of interventions for people who repeatedly self-harm or attempt suicide e.g. similar to Early Psychosis Intervention program for young people. • Lack of long-term interventions for young people who are engaged with homelessness services or with previous foster care and/or family breakdowns. <p>In 2018, NBMPHN commissioned NBMLHD to deliver a peer-led service to connect people to ongoing supports upon leaving hospital after an attempt to end their own life. This is being delivered out of Plains Access (Nepean Hospital) and Blue Mountains Access (Blue Mountains Hospital), and commenced in September 2018. The service offers a 6-week program for</p>

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>		
		people who are leaving hospital after an attempt to end their own life. The primary aim of this service is to connect people with their (or a suitable) GP, as well as other ongoing supports, such as family and friends, or psychological therapy services.
Culturally Safe Suicide Prevention For Aboriginal People	Appropriate and culturally safe suicide prevention programs are very limited within the NBM region.	<p>Previous stakeholder feedback indicated that suicide prevention programs that involve Aboriginal people in service provision are needed to support Aboriginal people at risk of suicide [91,120]. It has been widely acknowledged by stakeholders that suicide prevention programs run by Aboriginal people are generally absent from the NBM region.</p> <p>In 2018, NBMPHN commissioned the Blue Mountains Aboriginal Resource Centre to deliver the Young Strong and Deadly program in 2017-18, a region-wide early intervention service focusing on connection to culture. The program aims to address crystal methamphetamine use, suicide risk and mental illness among young Aboriginal people at risk of mental illness, suicide and alcohol and other drugs addiction. Further investigation is necessary to establish the range and type of services still required.</p>
Skills And Training Capacity	<p>Appropriate skills and training for suicide prevention and follow up support is generally regarded as inadequate throughout the NBM region.</p> <p>The need for specialised skills has been identified to support suicide prevention amongst especially vulnerable populations, including Aboriginal people, youth and CALD populations.</p>	<p>Stakeholders previously indicated that skills and training for suicide prevention are generally inadequate and further investigation is required on models of care, skills required and different options for capacity building through training support.</p> <p>Stakeholders have indicated that [91]:</p> <ul style="list-style-type: none"> • Suicide prevention training and capacity amongst primary healthcare providers is unclear. • Need for education and training for non-clinical workers who have contact with high-risk people e.g. police, ambulance. • Lack of DBT (Dialectical Behaviour Therapy) training and services in the region. • Lack of relevant staff and training in youth specific mental health first aid at local schools. • Lack of cross-cultural suicide training for workers. <p>In 2017-18 and 2018-19, NBMPHN commissioned Black Dog Institute to deliver continuous professional development (CPD) training to GPs, GP registrars and practice nurses across the region. This training was intended to increase the capacity of primary care providers to support people at risk of suicide or self-harm. NBMPHN also commissioned Wesley Community Services in 2017-18 to deliver their LifeForce suicide prevention education in each of the NBM region's four LGAs. This was for identified people who may have a 'community gatekeeper' role (such as teachers, sports coaches, service volunteers and workers, counsellors, clergy, pharmacists, family and friends, crisis line staff and other community members). The education aimed to build participants' capacity to identify and support people at risk of suicide or self-harm.</p>
Continuity and Transfer Of Care	Barriers to follow up and support subsequent to assessment for people at risk	Stakeholders have identified barriers to follow up and support between hospital discharge and the community based Access teams [91, 117]. There are concerns that these services are unable to accommodate the demand for services within the region. Further investigations are required to fully assess the nature of these barriers to continuity of care.

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Suicide Prevention</i>		
	of suicide indicate breakdowns in continuity of care, and the likely need for formalised care coordination across suicide prevention services.	<p>Preliminary stakeholder engagement has indicated the following concerns:</p> <ul style="list-style-type: none"> • Lack of follow-up from Access teams, which is likely due to time constraints and difficulty in contacting people. • People discharged from Access teams may not have a GP, aren't followed up by a GP or don't make an appointment. • Lack of support for family members when people are discharged from hospital into their care.
Absence Of Quantitative Evidence To Support Analysis Of Demand For Services	Access to current data to support analysis of demand for suicide prevention services is poor.	<p>Research to date indicates that potentially important data to support planning for suicide prevention is not available. Stakeholders have indicated that it would be particularly important to analyse the extent to which vulnerable populations such as Aboriginal people, adult men and youth, utilise telephone services [91].</p>
General Population Awareness Of Support For Suicide Prevention	Community awareness of suicide and risks is perceived as inadequate at the regional level. Poor community awareness may result in hidden prevalence of suicidal behaviors.	<p>Preliminary stakeholder consultations indicate that the actual prevalence of suicidal behaviours and risk is likely to be underestimated because the general population is not sufficiently aware of the presentations and behaviours that indicate risk and the opportunities to support people who are at risk [91]. Stakeholders have indicated that there is:</p> <ul style="list-style-type: none"> • Lack of community engagement and understanding of suicide - prevalence is hidden. • Lack of education and awareness to reach people who don't access mental health services. Some national public health campaigns are not localised.
Evaluation Of Service Models	Existing models of care provided to the community to prevent suicide and support people at risk may not be properly evaluated to evaluate if they are meeting the needs of the community.	<p>Preliminary stakeholder consultation has indicated a lack of evaluation of existing service models for suicide prevention and support services [91].</p>
Support for suicide prevention	Limited Post suicide prevention support services available for young people	<p>Local service provider consultations indicate there is a lack of post suicide prevention support services available for young people, particularly in the Lithgow LGA [121-122]. However, local community consultations also indicate that young people are most likely to seek support from their friends, then parents and relatives. It is viewed that only a small proportion (e.g. 5-10%) of young people who may be at risk of suicide seek out support from agencies. Consideration of the broader range of health, social and cultural factors for young people and what else is going on in their lives was recommended, as was moving towards peer support and online programs for supporting young people. In addition, as private counselling and community organisations including the headspace Youth service do not provide long-term follow-up, it was recommended that programs consider how they are viewed to be relevant, affordable and accessible by young people.</p>

Outcomes of the service needs analysis – Primary Mental Health Care: *Suicide Prevention*

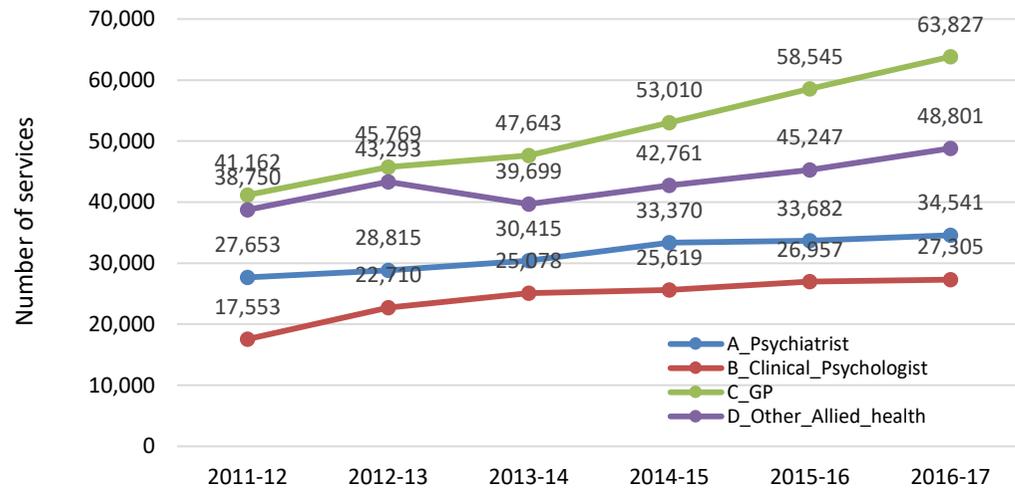
		<p>In 2018, NBMPHN commissioned NBMLHD to deliver a peer-led service to support people to connect to ongoing supports, upon leaving hospital after an attempt to end their own life. This is managed and implemented through the Access teams at the Nepean and Blue Mountains Hospitals, and commenced in September 2018.</p>
<p>Short term psychological intervention</p>	<p>Access to the Psychological Therapy suicide prevention and support services is varied across the NBM region.</p>	<p>The NBMPHN funded, psychological therapy suicide prevention service has to date been utilised to its full funding capacity and is a well-regarded and supported service among GP referrers and allied health providers. This service fills a previous regional gap by providing a GP referral pathway for people at mild to moderate risk of suicide in accessing targeted, quick response short term psychological therapy services within the primary care sector. However, it is noted that referrals for this service are uneven across the region and high demand requires careful funding allocation and management of demand capacity amongst Providers.</p>

MENTAL HEALTH – Adults with Moderate to Severe Mental Illness

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (<i>Adults with Moderate to Severe Mental Illness</i>)																							
Identified Need	Key Issue	Description of Evidence																					
Demand for Commonwealth funded Mental Health Services	Positive trends can be identified in the uptake of Commonwealth funded MBS mental health service items by GPs, allied health and psychiatrists.	<p>Analysis of Medicare Australia MBS data for mental health service items shows that 40,482 patients (10.9% of the NBMPHN population in 2017) residing in NBMPHN accessed a total of 174,474 Commonwealth funded MBS mental health services in 2016-17 [18, 127]. Both the number of people residing in NBMPHN who accessed Commonwealth funded MBS mental health services and the total number of Commonwealth funded MBS mental health services delivered for NBMPHN residents increased every year between 2011-12 and 2016-17 at a roughly linear rate. The number of mental health MBS services claimed by NBMPHN residents increased by 6.1% between 2015-16 and 2016-17, from a total of 164,431 to 174,474 services. These increases appear to be similar to the trends seen across Australia during this time period, and likely reflect increases in population size and demand for Commonwealth funded mental health services.</p> <p>Figure 14: Total of Commonwealth funded MBS Mental Health services delivered - NBMPHN vs. Australia, 2011-12 to 2016-17</p> <table border="1"> <caption>Data for Figure 14: Total of Commonwealth funded MBS Mental Health services delivered - NBMPHN vs. Australia, 2011-12 to 2016-17</caption> <thead> <tr> <th>Year</th> <th>Nepean Blue Mountains</th> <th>Total - Australia</th> </tr> </thead> <tbody> <tr> <td>2011-12</td> <td>125,118</td> <td>7,856,762</td> </tr> <tr> <td>2012-13</td> <td>140,587</td> <td>8,441,693</td> </tr> <tr> <td>2013-14</td> <td>142,835</td> <td>8,973,147</td> </tr> <tr> <td>2014-15</td> <td>154,759</td> <td>9,709,446</td> </tr> <tr> <td>2015-16</td> <td>164,431</td> <td>10,543,370</td> </tr> <tr> <td>2016-17</td> <td>174,474</td> <td>11,054,730</td> </tr> </tbody> </table> <p>The largest growth in Commonwealth funded MBS mental health services claimed between 2015-16 and 2016-17 by service type was by: GPs (9.0%), followed by “Other Allied Health” (Better Access items) (7.9%), psychiatrists (2.6%) and clinical psychologists (1.3%).</p>	Year	Nepean Blue Mountains	Total - Australia	2011-12	125,118	7,856,762	2012-13	140,587	8,441,693	2013-14	142,835	8,973,147	2014-15	154,759	9,709,446	2015-16	164,431	10,543,370	2016-17	174,474	11,054,730
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Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (Adults with Moderate to Severe Mental Illness)

Figure 15: Service uptake of Commonwealth funded MBS Mental Health items by service type in the NBMPHN region, 2011-12 to 2016-17 [127]



Geographic access to Medicare mental health-specific services in the NBMPHN

The uptake of MBS funded mental health-specific services appear to be highest in the Penrith and Blue Mountains SA3 areas.

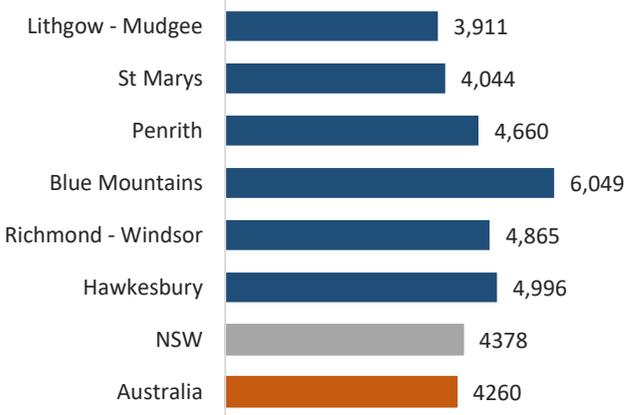
In 2016-17, the number and proportion of patients receiving MBS funded mental health-specific services in the NBM region by SA3 local area was highest in the Penrith followed by Blue Mountains and are summarised below [128]. However aged-standardised data (not currently available) is required to interpret the relative utilisation of MBS funded mental health services by patients across the NBMPHN catchment, to account for potential differences in the size and age-structure of the population within SA3 local areas.

- Blue Mountains: 8,713 people (24% of patients)
- Hawkesbury: 2,312 people (6.6% of patients)
- Richmond-Windsor: 3,749 people (10.3% of patients)
- Lithgow-Mudgee: 1,664 people (4.6% of patients)
- St Marys: 5,250 people (14.4% of patients)
- Penrith: 13,648 people (37.5% of patients)

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

<p>Mental health care provided by General Practitioners</p>	<p>Increasing proportion of general practice encounters (12.4%) that were mental health-related and number of GP MBS mental health-related services</p> <p>The most common mental health-related issues managed by GPs were for: depression (32.1%), anxiety (16.6%) and sleep disturbance (12.1%).</p>	<p>Analysis of BEACH study data across Australia estimated that 12.4% of all GP encounters in 2015-16 were mental health related (18.0 million estimated GP encounters) [129]. This was much higher than the number of mental health-specific MBS subsidised GP services provided (3.2 million services in 2015-16) and means that only 1 in 6 (18.1%) of the estimated GP encounters that were mental health-related were billed using mental health-specific MBS items in 2015-16. It is suggested the remaining mental health related GP encounters were billed as general MBS items. Therefore, estimates of GP mental health item utilisation are likely an underestimate of the total activity for mental health care services provided by GPs. The most common mental health-related issues in 2015-16 managed by GPs were: depression (32.1%), anxiety (16.6%) and sleep disturbance (12.1%).</p> <p>In the NBMPHN region, GPs provided 36.6% (63,827) of all MBS mental health-specific services in 2016-17, an increase of 9.0% in the number of GP MH-specific services compared to 2015-16. These services were provided to 34,353 patients, at an average of 1.9 services per patient [127].</p>																
<p>General Practice Mental Health Treatment Plans</p>	<p>Increasing demand for GP Mental Health Treatment Plans in the NBM region.</p>	<p>Of the MBS mental health-specific services delivered by GPs in the NBMPHN region in 2016-17, more than one-third (26,511 or 41.5%) were for the preparation or review of a mental health treatment plan. This was an increase of 6.5% for these service items from the previous year in 2015-16 [130].</p> <p>Table 16: Medicare Benefits Schedule services delivered under GP mental health treatment items in NBMPHN, FY 2016-17</p> <table border="1" data-bbox="826 807 1800 1070"> <thead> <tr> <th>MBS Reporting Group</th> <th>MBS item(s)</th> <th>No. of patients</th> <th>No. of services</th> </tr> </thead> <tbody> <tr> <td>Preparation of a GP Mental Health Treatment Plan</td> <td>2700, 2701, 2715, 2717</td> <td>19,458</td> <td>19,477</td> </tr> <tr> <td>Review of a GP Mental Health Treatment Plan</td> <td>2712</td> <td>6,067</td> <td>7,034</td> </tr> <tr> <td>GP Mental Health Treatment Consultation</td> <td>2713</td> <td>17,816</td> <td>33,332</td> </tr> </tbody> </table>	MBS Reporting Group	MBS item(s)	No. of patients	No. of services	Preparation of a GP Mental Health Treatment Plan	2700, 2701, 2715, 2717	19,458	19,477	Review of a GP Mental Health Treatment Plan	2712	6,067	7,034	GP Mental Health Treatment Consultation	2713	17,816	33,332
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	<p>General practice involvement in mental health plan development and review is widely variable across the NBM region.</p>	<p>The age-standardised rate of services for the preparation of a mental health treatment plan by general practitioners in 2013-14, by SA3 local area level were [131]:</p> <ul style="list-style-type: none"> • Blue Mountains: 6,049 people per 100,000 (in the top decile for Australia) • Hawkesbury: 4,996 people per 100,000 • Richmond-Windsor: 4,865 per 100,000 • Lithgow-Mudgee: 3,911 people per 100,000 • St Marys: 4,044 per 100,000 																

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (Adults with Moderate to Severe Mental Illness)

		<ul style="list-style-type: none"> Penrith: 4,660 people per 100,000 <p>The underlying drivers for this variability across the NBMPHNs catchment need further exploration.</p> <p>Figure 16: Age-standardised rate of MBS funded services for preparation of a mental health treatment plan by SA3 local area in Nepean Blue Mountains, 2013-14</p>  <table border="1"> <thead> <tr> <th>SA3 Local Area</th> <th>Rate (per 100,000)</th> </tr> </thead> <tbody> <tr> <td>Lithgow - Mudgee</td> <td>3,911</td> </tr> <tr> <td>St Marys</td> <td>4,044</td> </tr> <tr> <td>Penrith</td> <td>4,660</td> </tr> <tr> <td>Blue Mountains</td> <td>6,049</td> </tr> <tr> <td>Richmond - Windsor</td> <td>4,865</td> </tr> <tr> <td>Hawkesbury</td> <td>4,996</td> </tr> <tr> <td>NSW</td> <td>4,378</td> </tr> <tr> <td>Australia</td> <td>4,260</td> </tr> </tbody> </table>	SA3 Local Area	Rate (per 100,000)	Lithgow - Mudgee	3,911	St Marys	4,044	Penrith	4,660	Blue Mountains	6,049	Richmond - Windsor	4,865	Hawkesbury	4,996	NSW	4,378	Australia	4,260
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<p>Lifestyle interventions as a part of routine mental health care</p>	<p>Poor incorporation of lifestyle interventions for preventing and managing chronic conditions into routine care for people with a mental health condition, within primary and tertiary care settings.</p>	<p>The Royal Australian and New Zealand College of Psychiatrists recommends incorporating health promotion programs such as smoking cessation, weight management and exercise interventions as core elements of mental health service delivery [132]. Anecdotal evidence from local stakeholders indicates that lifestyle interventions are poorly incorporated within routine care of mental health patients in the NBM region within both primary and tertiary care settings. Further research is required to further examine this issue. Regular mental health assessments in primary care for people with chronic physical conditions are recommended by the Royal Australian College of General Practitioners [133-134].</p>																		
<p>Antipsychotic PBS Prescriptions Dispensed For Mental Health Patients</p>	<p>There appears to be relatively high rates of antipsychotic medicines dispensing across almost all NBM SA3 locations across all age-groups.</p>	<p>Review of available data indicates the following [135]:</p> <ul style="list-style-type: none"> The rate of prescribing antipsychotic medicines to persons 17 years and under is relatively high compared to state averages in St Marys, Richmond-Windsor, Lithgow-Mudgee and Penrith SA3 areas. The rate of prescribing antipsychotic medicines to persons 18-64 years is relatively high compared to state averages in Lithgow-Mudgee, Blue Mountains, St Marys and Penrith SA3 areas. The rate of prescribing antipsychotic medicines to persons 65 years and older is relatively high compared to state averages in all Nepean Blue Mountains SA3 areas. 																		

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

Mental Health Nurse Incentive Program (MHNIP clients)	Positive trends identified in the uptake of MHNIP services in the NBM region.	The number of patients receiving MHNIP services is 182 in 2018/19 compared to 168 in 2017/18.																														
	Unmet need: the number of MHNIP clients in the NBM PHN region is low relative to the regional MHNIP benchmarks.	MHNIP MDS data indicates there were 182 (85 new referrals) MHNIP clients in the NBM PHN in 2018/19 [136]. Comparing the distribution of these individuals across NBM LGAs compared to those specified in the <i>MHNIP Evaluation Report</i> (0.58% of the 18-64-year-old population) implies there was a shortfall between the MHNIP benchmark target clients and current MHNIP clients [137]. These were: <table border="1" data-bbox="824 497 2020 767"> <thead> <tr> <th>LGA</th> <th>Referrals for MHNIP clients</th> <th>Referrals as a proportion per 100,000 people</th> <th>Target MHNIP clients for the NBM region</th> <th>Shortfall between actual clients and benchmark clients</th> </tr> </thead> <tbody> <tr> <td>Blue Mountains</td> <td>74</td> <td>75</td> <td>270</td> <td>196</td> </tr> <tr> <td>Hawkesbury</td> <td>46</td> <td>78</td> <td>230</td> <td>184</td> </tr> <tr> <td>Lithgow</td> <td>15</td> <td>42</td> <td>70</td> <td>55</td> </tr> <tr> <td>Penrith</td> <td>47</td> <td>20</td> <td>710</td> <td>663</td> </tr> <tr> <td>Total</td> <td>182</td> <td>215</td> <td>1,280</td> <td>1098</td> </tr> </tbody> </table>	LGA	Referrals for MHNIP clients	Referrals as a proportion per 100,000 people	Target MHNIP clients for the NBM region	Shortfall between actual clients and benchmark clients	Blue Mountains	74	75	270	196	Hawkesbury	46	78	230	184	Lithgow	15	42	70	55	Penrith	47	20	710	663	Total	182	215	1,280	1098
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Penrith	47	20	710	663																												
Total	182	215	1,280	1098																												
The Mental Health Nurse Incentive Program (MHNIP), delivered by mental health nurses in association with GPs, is a major source of clinical support to people with severe and persistent mental illness	GPs on the Clinical Council have previously stated that MHNIP services are valued by GPs but overall there are insufficient services available and the distribution of available services is unequal across the region [138]. Consultation with mental health nurses who provide MHNIP services have raised the following issues [139]: <ul style="list-style-type: none"> • The therapeutic relationship and intervention between the consumer and mental health nurse is crucial to successful service delivery. • Long term therapeutic relationship (using a variety of evidence based therapy modes) can keep consumers out of hospital and off Community Treatment Orders. • Consumers with complex trauma/post-traumatic stress disorder may not engage well with LHD community mental health services but may benefit from an ongoing therapeutic relationship with a mental health nurse. • In addition to the therapeutic role mental health nurses also provide clinical care co-ordination, ongoing monitoring of mental state, contribute to medication reviews and monitor effects of medications and consider physical health needs. As such they are in a key position to meet the needs of certain clients on a number of levels. • For some consumers, long term therapy supports them to manage their own lives in a better way. • Mental health nurses provide ongoing stability and continuity of care which is important for this cohort and assists them in managing their mental health condition better. 																															

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

<p>Continuity Of Care After Discharge From Acute Services</p>	<p>Consultations indicate that there are possible breakdowns in the continuity of care for patients discharged from acute mental health services.</p>	<p>Further investigations are required to examine possible sources of breakdowns in continuity of care. Stakeholders have previously expressed the following views [138, 140-142, 163]:</p> <ul style="list-style-type: none"> • Referring GPs do not consistently receive discharge information for acute mental health inpatient stays; the Nepean Hospital Triage and Assessment Centre does not provide any discharge or follow up letter to referring GPs • Lack of consistent approach to discharge planning including lack of coordinated follow up after discharge (unless consumer is on a Community Treatment Order). • People discharged from Mental Health Inpatient Unit do not always make a follow up appointment with their GP. • Aftercare teams often receive limited information about requirements for patient follow-up • Consumers need to be offered active support at time of discharge in particular consumers who lack appropriate family support would benefit from personal and practical support (e.g. peer support workers) at time of discharge. • Regular follow up phone calls with consumers and carers after discharge from hospital can positively support and influence adjustment period after discharge. <p>In September 2018, Nepean Blue Mountains Local Health District commenced a Supported Transfer Model of Care (funded by NSW Ministry of Health), implemented by Peer Workers. The service offers a 6-week program for persons following discharge from the acute mental health inpatient unit. It aims to connect identified persons with a range of community supports, assist them with stepping up and down to relevant services and provide appropriate follow-up during this period. This service is intended to complement the Peer led Aftercare service for persons who have made an attempt on their life, following acute discharge (funded by NBMPHN).</p>
<p>Coordination Of Care</p>	<p>Mental health services across the region appear to be impacted by fragmentation of service provision between different providers and between acute and primary care. This is likely to represent a care coordination issue.</p>	<p>Preliminary stakeholder consultation indicates a wide range of issues that may be sourced back to fragmentation of service delivery. Stakeholders have expressed the following views that may be related to fragmentation of services [117, 140, 142-144]:</p> <ul style="list-style-type: none"> • Episodic nature and lack of effective coordination, integration and follow up between acute and primary mental health care. In particular, lack of care coordination, referral pathway coordination and case management (including public and private sector and clinical as well as nonclinical services) to support consumer centered care based on consumer need rather than available service options. • Lack of service coordination and linkages to support seamless step up or step down from services. • Consumers with complex trauma need access to long-term integrated care between GP, psychiatrist, mental health nurse and psychologist (or equivalent) to support recovery journey. • Significant number of consumers are not connected to GP and do not have a ‘medical home’.

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

		<ul style="list-style-type: none"> • Significant number of consumers without a carer - they are especially vulnerable, particularly in the older age group, and in need of care coordination. • Lack of coordination between outreach areas and Nepean Hospital for acute mental health issues. • Lack of coordination and sharing of information/results of regular screening for physical health issues between GPs and Community Mental Health. • Need for clinical multidisciplinary approach to care and sharing of information between public and private sector. • Lack of access to consumer mental health information by NGOs. • The availability of multiple entry points for patients to access care within the tertiary mental health system other than through a GP, potentially erodes continuity of care and provision of appropriate follow-up of care by GPs post discharge. In particular, this frequently presents a challenge for GPs in identifying: <ul style="list-style-type: none"> ○ The point at which patients are discharged. ○ If adequate follow-up care is / isn't being provided. ○ Lines of responsibility for follow-up care. ○ The point at which care should be transferred back to GPs. • Need for case workers or capacity for case management to assist patients / consumers accessing care, in particular their physical health care. • Need for a "Passport of care" to assist patients / consumers navigate the required steps up and or down
<p>Service Gaps Psychiatry</p>	<p>There is a perceived lack of specialist psychiatric services in the NBM region.</p>	<p>Further investigation of the number of specialist psychiatrist positions in the NBM region is required. Stakeholders have indicated the following concerns regarding access to specialist psychiatric services [138-140, 143-144]:</p> <ul style="list-style-type: none"> • Lack of psychiatric services across the region. • Lack of sufficient bulk-billing by private psychiatrists (long waiting lists for those who do bulk-bill). • Long waiting lists to access public psychiatrists. • Limited access to psychiatrists are perceived to be a significant barrier for patients to access the services they need by local GPs.

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

<p>Gaps In Service Provision</p>	<p>Fragmentation of mental health service provision may be further indicated by stakeholder perceptions of gaps in service provision.</p>	<p>Further research is needed to map existing mental health services in the region with perceived gaps in services. Stakeholders have previously expressed the following concerns [138, 140, 142-143, 145-146]:</p> <ul style="list-style-type: none"> • Lack of awareness of other services in the community among many service providers, a lack of understanding of the role of different mental health services and if and how these are integrated, and lack of knowledge about the role of mental health clinical and support services among service providers and community members. This makes referral pathways problematic and results in duplication of some services. • Lack of evidence based treatment services for consumers with complex trauma (often diagnosed with personality disorders). • Lack of step down facilities from acute to sub- or non-acute care, and lack of stepdown services from severe to moderate mental illness. • Lack of appropriate integrated service options (including between LHD and primary care) for consumers with dual mental health and D&A diagnosis. • Lack of sufficient subsidised group work (e.g. mindfulness based stress reduction) • Inconsistent provision of psychosocial services and appropriate social support to support consumers at all stages of their recovery journey across the region (particularly Blue Mountains, Lithgow and Hawkesbury). • Lack of community based specific post-natal depression services available. • Need for advance statements for Mental Health which can be uploaded to MyHealth Record – this will help avoid consumers having to retell their story over and over again (which can lead to reliving trauma) when engaging with new clinical services. • Need for approaches that enable consumers and carers to have a broad and clear understanding and visibility of services available across the system, what they do and their referral or access pathways.
<p>Gaps And Barriers To Accessing Housing And Accommodation</p>	<p>Access to housing and accommodation for people with mental illness is inadequate across the NBM region.</p>	<p>Relevant research and stakeholder feedback indicates that there is a lack of housing options for people with mental illness in the region and that this is having negative consequences for the wellbeing and ongoing treatment of people with mental health problems. Stakeholders have raised the following concerns [139-140, 142-143, 145]:</p> <ul style="list-style-type: none"> • Lack of appropriate accommodation for homeless people results in discharged from hospital to unstable accommodation and increases likelihood of re-admission. • Lack of available accommodation for homeless people can result in unnecessary longer hospital stay (social admission). • Lack of stable long term quality accommodation which is socially supported and economically sustainable and takes into account the special needs of consumers (e.g. HASI type services). • Lack of mental health outreach services for homeless people in the region. • Insufficient emergency accommodation.

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (*Adults with Moderate to Severe Mental Illness*)

<p>Capacity Building To Support Carers And Consumers</p>	<p>Respite care and other types of support for carers and consumers may be inadequate in the NBM region.</p>	<p>Stakeholders have raised the following concerns [140, 142-143]:</p> <ul style="list-style-type: none"> • Carers and families not sufficiently included and not receiving sufficient support (e.g. respite options). • Carers and families not adequately informed about the mental health condition of the person they care about so they can stay safe and supportive in their own environment. • Lack of support for financial management – consumers accumulate debts which jeopardise payment for accommodation and living expenses, increases anxiety and can contribute to homelessness. • Insufficient education of consumers about prescribed medications including side effects. • Need for local mental health care support groups for carers &/or consumers
<p>Workforce Capacity Including Skills And Training</p>	<p>There is a general view that workforce capacity for mental health in the region could be substantially improved with training and skills development.</p>	<p>Further research is needed to examine the potential sources of the issues raised by stakeholders to develop appropriate options. Concerns previously raised by stakeholders include [140, 142-143]:</p> <ul style="list-style-type: none"> • Increase GPs knowledge of available clinical and non-clinical services and their referral pathways. • Increase GP capacity to identify early if consumer needs more intensive treatment (not provided through Psychological Therapy Services or Medicare) such as MHNIP. • Need for trauma education for health professionals. • Lack of GP Education dual diagnosis drug and alcohol & severe mental illness. • Insufficient dual diagnosis support and supervision for private therapists. • Lack of GP education in relation to depression in the elderly. • Lack of peer workers to help increase consumer health literacy, understanding of treatment and psycho-social support options and to provide support for people while in acute care and in the community – identified as a high need by consumer group. • Lack of support workers who are available after hours and on weekends. • Need to develop a set of referral options or services algorithm for Allied Health professionals (other than psychologists, e.g. Pharmacists) to increase Allied Health capacity to discuss appropriate referral or local service options with clients / consumers with mental health concerns.
<p>Psychosocial support for people with severe mental illness: (<i>National Psychosocial Support measure</i>)</p>		
<p>Community Managed Organisations Operating Psychosocial Program in the NBM region</p>	<p>Currently available local psychosocial programs operated by community managed organisations are prone to market forces in the current climate of reform. Unstable short term funding cycles impact on</p>	<p>The spectrum of psychosocial disability is complex with variable presentations and stages on the recovery journey. This complexity is reflected in the psychosocial service system with a suite of different programs and clinical options to cater to consumer need. However, this diversity means the service system is fragmented and difficult for consumers and health professionals alike to navigate. An outline of currently available psychosocial program in the NBM region is presented below.</p>

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (Adults with Moderate to Severe Mental Illness)

	<p>staff retention, quality of service delivery and strategic workforce planning.</p> <p>There are additional psychosocial supports that are only accessible for under an approved NDIS support plan. This assessment looks at the cohort with psychosocial needs that are currently not supported by the NDIS</p>	<p>The below diagram gives a current snapshot of the geographic reach of psychosocial programs and lead agencies as at November 2019. The limited funding, unstable / short term nature of funding cycles adds to the complexity with implications on staff retention, quality of service delivery and strategic workforce planning.</p> <div data-bbox="891 331 1944 1018" data-label="Diagram"> </div>
<p>Systems reform</p>	<p>Significant opportunities for (and barriers to) system reform exist to assist health professionals and consumers identify appropriate psychosocial referral options, such as:</p> <ul style="list-style-type: none"> • Simplification of referral criteria 	<p>Examination of available evidence and local consultations highlight the following issues across the local service system [275, 296]:</p> <ul style="list-style-type: none"> • Psychosocial service system is fragmented and confusing for health professionals and consumers alike. GPs are unsure what clinical presentations are suitable for what psychosocial service. • Referral criteria is confusing and there is not central triage point with system expertise and reach. • Consumers have to retell their story as psychosocial services not connected to clinical care in meaningful ways • Transitional policies and short funding cycles of psychosocial services leads to operational scaling up and winding down in rapid succession. This is not conducive to therapeutic relationships and does not give services opportunity to mature.

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (<i>Adults with Moderate to Severe Mental Illness</i>)		
	<ul style="list-style-type: none"> Creation of a central triage point with system expertise and reach 	
Peer Work	Inadequate resourcing and lack of strategic investment in peer work from statutory organisations and CMOs in the region.	<p>A lack of strategic investment in peer work in the region is identified, including [297-298]</p> <ul style="list-style-type: none"> Inadequate resourcing for the development of peer work in the region. Lack of strategic investment in peer work from statutory organisations and CMOs.
Aboriginal identified staff and culturally safe services	Lack of investment in Aboriginal staff in both clinical settings and psychosocial services.	<p>A lack of investment in the local Aboriginal workforce is identified, including [275, 283, 299]</p> <ul style="list-style-type: none"> Lack of Aboriginal staff in both clinical settings and psychosocial services Lack of cultural engagement frameworks and best practice solutions to attracting and retaining Aboriginal staff
Overall lack of mental health support services	Limited resourcing, long waiting lists and poor demand management strategies for psychosocial programs.	<p>Consumer consultations indicate an overall lack of local mental health support services, specifically [275]</p> <ul style="list-style-type: none"> Limited government resources for psychosocial programs Long waiting lists and poor demand management strategies Short funding cycles leading to reduced quality of care
Barriers to access	Identified need to create consumer-oriented pathways to accessing services, such as a soft entry hub model / drop in centre.	<p>Identified barriers to accessing local services include [145, 275, 280, 300-301]</p> <ul style="list-style-type: none"> Referral is system oriented and not consumer oriented Soft entry via a hub model/drop in centre was identified across all LGAs Transport as a geographic barrier to service remains an issue across all LGAs
Access to GP services	High proportion of NBM residents without a usual GP or place of care, reduced access to bulk billed GPs and longer waiting times to see a GP in Blue Mountains are significant barriers to accessing clinical care for people in mental health crisis.	<ul style="list-style-type: none"> A higher proportion of patients in the NBM region (3.6%) than nationally (2.5%) don't have a usual GP or a usual place of care, equivalent to an estimated 13,399 people [239]. There has been reduced access to bulk billed GPs in the Blue Mountains over the last 18-30 months as well as longer waiting times to see a GP [240]. Such barriers are likely to exclude many mental health consumers from their primary source of clinical care, and be highly detrimental to their wellbeing at times when experiencing a mental health crisis and in high need of access to clinical care.
Out of Hours Access	Limited access to afterhours GP services is perceived to be a	<ul style="list-style-type: none"> Consumers perceive limited access to GP services and support after hours [145]. Ex operational hours is often the time consumers seek help and present to acute care settings

Outcomes of the service needs analysis – Primary Mental Health Care: Mental Health (<i>Adults with Moderate to Severe Mental Illness</i>)		
	barrier by consumers to receiving timely clinical care.	
Broader system needs capacity building and education around mental health	Identified need for basic mental health training for mainstream services, including Centrelink, Housing, Police, employers and community organisations.	Basic mental health training for mainstream services such as Centrelink, Housing, Police, employers and community organisations to make them more inclusive [275].
Psychosocial support for people with severe mental illness: (<i>Continuity of Support</i>)		
Community Managed Organisations Operating CoS in the NBM region	<p>The previous Providers of PIR, D2DL and PHaMs in the NBM region undertook the service provision of CoS as of 1 July 2019.</p> <p>This program provides less funding per head than the previous PIR, D2DL and PHaMs programs and has a fluctuating caseload due to the nature of entry into the program.</p> <p>Resources and Funding Streams</p> <p>The reporting requirements via the MDS portal has created a new challenge for the Providers.</p>	<p>Whilst the Providers of CoS in the NBM region (Aftercare, Parramatta Mission and Flourish) have established rapport with the CoS participants due to them being the previous service providers for the Commonwealth funded programs that ceased on 30 June 2019, operational challenges exist due to service model requirements of CoS.</p> <p>CoS participant numbers fluctuate as people enter the program if they are found ineligible for the NDIS via the National Psychosocial Support measure 2 extended (NPS2). Providers report difficulty in predicting and allocating staffing with varying NDIS transition rates.</p> <p>Providers have reported the difficulties providing services with the same non-clinical supports, which focus on the same capacity building and stability goals under two different funding streams.</p> <p>The reporting requirements of CoS via the MDS portal have also created a reported administrative burden to the organisations. Providers mentioned ‘paperwork fatigue’ with the data required to be collected for the portal. Their in-house databases have also required development to extract and upload this information correctly.</p> <p>The compulsory use of K10 (as required by the Primary Mental Health Care Minimum Data Set) has been a highlighted concern of Providers stating; <i>“The outcome measure has a clinical feel and negative questioning style which could be quite distressing for a person to complete. If the findings are concerning or are a trigger for the client they are not in a clinical setting to be supported” NBM CoS Provider</i></p>

MENTAL HEALTH OF ABORIGINAL PEOPLE

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Mental Health (Mental Health of Aboriginal People)</i>		
Identified Need	Key Issue	Description of Evidence
Service Gaps	Lack of culturally safe mental health services available to Aboriginal people in the region.	<p>Mental health services provided to Aboriginal people in the region are generally not regarded as culturally secure and supportive of the needs of Aboriginal people. The following issues have previously been identified via community consultations with Aboriginal people held in 2014 and 2016 [147]:</p> <ul style="list-style-type: none"> • Lack of indigenous programs run by Aboriginal people. • Lack of culturally appropriate services and lack of Aboriginal workers in identified roles, including community programs, psychiatrists and psychologists. • Lack of focus and provision of early intervention services and programs • No Aboriginal Controlled Medical Service available in Lithgow, Hawkesbury and Blue Mountains LGAs • Need for improved and enhanced dual diagnosis mental health and D&A services. <p>Further consultation with Aboriginal community members in each of the region’s LGA confirmed previously stated concerns and in addition raised the following issues [91, 117, 140, 148-150]:</p> <ul style="list-style-type: none"> • Need for regular Aboriginal health clinics &/or forums in local hospitals and Community health centres • Need for alternative, complimentary programs/services that build on cultural strengths to engage and support people in developing positive coping strategies. • Need for people centred approaches (i.e. to examine issues from the whole person’s perspective to identify appropriate solutions). • Need to develop partnerships and pool resources with other non-health sectors (e.g. police, education, housing, sport and recreation). • Intergenerational trauma needs to be recognised and addressed through innovative, locally developed and coordinated programs. • Address and eradicate systemic, institutionalised racism in health services – this will help develop trust with Aboriginal communities. • Increase the number of preventative services to address underlying issues before people reach crisis, particularly for children and young people. • Lack of dual diagnosis (mental health and alcohol/other drugs) unit means people bounce between detox and psychiatric units. • Short funding cycles for services do not allow for trust to be built. • Need for Aboriginal Community hubs in each LGA to provide a safe meeting space.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Mental Health of Aboriginal People)*

		<ul style="list-style-type: none"> • Need for Aboriginal controlled health services in each LGA. • Need for culturally appropriate services which take a holistic and whole of family approach to emotional health and well-being.
<p>Workforce Training And Capacity Building</p>	<p>Widely perceived lack of awareness of Aboriginal mental health needs from service providers coupled with an inadequate number of designated Aboriginal specific clinical and non- clinical positions in the NBM region.</p>	<p>Stakeholders have indicated a general lack of awareness of the needs of Aboriginal people with mental illness, as well as the need to develop programs to target those needs. Further investigations will seek to assess the need for workforce cultural safety training, targeted program development, mental health literacy in Aboriginal communities and capacity building for Aboriginal mental health professionals. The concerns raised by stakeholders in preliminary consultations included the following [140, 147] :</p> <ul style="list-style-type: none"> • Mental health services need willingness to engage with Aboriginal communities and need proper guidance from community members (Elders) to build trust. • Need to increase designated Aboriginal specific clinical positions in mental health. • Lack of understanding of stressors affecting the mental health of Aboriginal people, particularly intergenerational trauma and associated PTSD. • Lack of Aboriginal mentors for people undergoing treatment and therapy. • Need to increase mental health literacy in Aboriginal communities. <p>Consultations with Aboriginal community members in Penrith, Hawkesbury, Blue Mountains and Lithgow and with Aboriginal workers in Penrith and Lithgow confirmed the points stated above and in addition raised the following [150-153] :</p> <ul style="list-style-type: none"> • Communities have higher expectations of professionals in Aboriginal identified positions than of mainstream mental health workers. • There are insufficient Aboriginal workers in dedicated health and mental health positions – this puts a lot of pressure and strain on existing Aboriginal health workers. • The experience of Aboriginal workers is too often discounted when they do not have health or allied health qualifications. • Aboriginal health workers need to be accepted as integral members of clinical teams, with the importance of these positions to the Aboriginal communities recognized. • There is insufficient gender mix of Aboriginal health workers. • Community expect support from Aboriginal health workers which often does not fit the narrower and often inflexible expectations of the employer; i.e. workers are expected to get involved in all sorts of issues which is outside their designated job description. This can create stress and tension in Aboriginal workers. • There is a high expectation from community that Aboriginal Health Workers have skills and capacity to provide a wide range of supports and services at the one place.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Mental Health of Aboriginal People)*

		<ul style="list-style-type: none">• There is a need for more Aboriginal workers who can act as cultural translators and support community members to navigate and access mainstream services.• There is a lack of cultural supervision and mentoring to support Aboriginal workers.• There is an ongoing need for cultural awareness and competency training for all non-Aboriginal health service providers to improve cultural safety for Aboriginal people accessing services.• Issues of burnout are common among Aboriginal health service providers, in particular due to significant demand placed upon Aboriginal health and social workers with limited support or staffing capacity to meet expectations.
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RURAL AND REMOTE AREAS AND OTHER UNDERSERVED AND/OR HARD TO REACH POPULATIONS

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Mental Health (Rural and Remote Areas and Other Underserved and/or Hard to Reach Populations)</i>		
Identified Need	Key Issue	Description of Evidence
Service accessibility among CALD Communities	Lack of targeted support for CALD populations across a range of mental health service needs.	<p>A range of service support needs have been identified for CALD populations including suicide prevention, outreach services, and specialist services include post-natal support for depression. Further research and consultation is required to establish the main CALD groups of concern and options for enhancing existing services or providing additional services. A positive finding of the 3BU project was that most participants viewed their GP as the first point of contact to provide a referral to a psychologist or the mental health service system. The concerns raised by stakeholders include the following [112, 140, 143, 148]:</p> <ul style="list-style-type: none"> • Lack of appropriate transcultural services in suicide prevention in all LGAs. • Lack of mental health outreach services for CALD people. • Lack of culturally appropriate psychiatric and psychological services, and poor level of cultural competency among mental health service providers in general. • Lack of CALD clinicians, e.g. counselling services in own language. • Lack or poor use of interpreters, or poor skills in the use of interpreter services • Lack of post-natal support/services for people suffering post-natal depression • Need to support people from CALD communities who remain isolated in their own homes and remain hesitant to access mental health services. • Stigma of mental illness and denial of mental health issues within some CALD communities hamper early intervention. • Lack of mental health literacy. • Unfamiliarity with health and mental health systems and lack of knowledge how to navigate system. • Reluctance to use medications by some CALD communities. • Services limited by criteria which do not meet need of CALD communities • Absence of CALD focused performance indicators and accountability standards.
Workforce Training And Capacity Development For CALD Populations	Need for enhanced workforce training to support special needs of CALD populations with mental illness.	<p>A range of workforce issues have been identified for CALD populations. These include awareness of support services for CALD populations (translator services) and transcultural competency. Further research and consultation is required to establish the main CALD groups of concern and options for providing enhanced training and support to the workforce.</p> <p>The concerns raised in previous stakeholder consultations include the following [112, 140, 148]:</p> <ul style="list-style-type: none"> • More education is needed for clinicians in relation to the high number of psychosomatic disorders within the CALD community.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Rural and Remote Areas and Other Underserved and/or Hard to Reach Populations)*

		<ul style="list-style-type: none"> • GP's need more education in working with CALD communities in relation to their mental health – lack of cultural understanding • Lack of training provided to GP's / Allied Health in using Telephone Translation Services. • Lack of transcultural competency in workforce. • Lack of bi-lingual health/mental health clinicians • Education, information and mental health literacy for CALD community organisations on existing mental health services so they can support their communities adequately.
Communication For CALD Populations	Inadequate communication for CALD populations regarding mental health service information and resources.	<p>A range of communication issues have been identified for CALD populations. These include awareness of support services in relevant languages, mental health educational resources and the need for CALD specific directories of services. The concerns raised in stakeholder consultations include the following [112, 148]:</p> <ul style="list-style-type: none"> • Lack of easy to access services outside the clinical setting • Lack of education in relation to stigma and discrimination with regards to mental health in CALD communities • Lack of awareness on how to navigate the mental health system and what supports are available • Lack of local mental health related resources in different languages.
Homelessness And Mental Health	Inadequate referral pathways between clinical and social support services for mental health patients with housing and accommodation problems.	<p>The problems confronting many people with mental illness in relation to housing and accommodation are well known and have been the subject of various government initiated reviews and evaluations [154]. Recent changes to NSW government housing support (HASI packages) have provided additional options to people with mental illness. However concerns continue to be raised by NBM stakeholders regarding the difficulties encountered by people with mental illness in relation to housing [148]. These include:</p> <ul style="list-style-type: none"> • The inadequacy of the number of HASI packages and the criteria for eligibility. • Lack of mental health skills amongst homelessness assertive outreach workers. • Lack of referral pathways between clinical and non-clinical mental health service providers for people who are homeless. <p>Further research and consultation is required to establish the key issues concerning people with mental illness in the NBM region.</p>
Service Needs For Prisoners On Release	Prisoners transitioning to the community have higher than average incidence of mental health and D&A problems,	In 2018, 14% of Australian prison discharges surveyed reported high or very high psychological distress. 40% of prison entrants reported that in the past they have been told (by a doctor, psychiatrist, psychologist or nurse) that they had a mental health condition, including alcohol and other drug use disorders at some stage in their life. Correctional services stakeholders from the NBM region have indicated that the mental health needs of former inmates are not currently being met in a

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Rural and Remote Areas and Other Underserved and/or Hard to Reach Populations)*

	<p>typically have complex needs, and require access and strong links to a broad range of services (40%).</p>	<p>substantive or systematic way post-release. The NBMPHN Clinical Council and NBMLHD Aboriginal Health workers have additionally raised there is currently a lack of and poor-quality of aftercare for persons newly released from prison, in particular in the Lithgow LGA [138, 152].</p>
<p>Regional Variation In The Provision Of Services</p>	<p>Inadequate mental health services in outer LGAs of NBM region: Lithgow and Hawkesbury LGAs.</p>	<p>Stakeholders have indicated concerns specific to the outer areas of the NBM region, in particular Lithgow and Hawkesbury LGAs. Further research is required to identify referral pathways and service mapping of the type of services currently available to people with mental illness in these LGAs, and the potential impact of any lack of service provision. Stakeholder consultations have raised a wide range of issues, including the following [140, 143, 152, 164]:</p> <p>Lithgow and Hawkesbury –</p> <ul style="list-style-type: none"> • The majority of mental health consumers in Lithgow and Hawkesbury are unable to afford the gap for Medicare-subsidised (private) psychology services. • Social isolation in outer regional areas particularly Lithgow and Hawkesbury LGAs. <p>Hawkesbury –</p> <ul style="list-style-type: none"> • Minimal mental health support – Nepean hospital is main MH inpatient unit which often has bed block. • Lack of a drop-in space for mental health consumers to get help or information, or for family members to seek help • No psychiatrist or medication review consultations are available for non-acute patients • Ongoing staffing capacity challenges at the Community Mental Health team in Windsor. <p>Lithgow –</p> <ul style="list-style-type: none"> • Social determinants such as housing, transport, lack of finances and lack of employment are significant barriers for having good mental health • There is a lack of crisis support • The geographical location of Lithgow being “the end of the train line” is challenging for mental health service provision and how far people travel to access services • Limited and poor access to psychiatrists and clinical psychologists, with waiting lists / times, gap payments and transport (for those who sought specialist care in areas outside of Lithgow) identified as key barriers. • Limited availability/location of specialist mental health clinical services – Katoomba hospital is the closest MH inpatient unit for MH patients from Lithgow. • A perception that LHD specialist mental health services are difficult to access due to a focus on severe mental illness, and services not being available for less serious patients.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Rural and Remote Areas and Other Underserved and/or Hard to Reach Populations)*

		<ul style="list-style-type: none"> Limited awareness of support service options (including employment access, training, welfare and housing support) for people with a mental illness, and concern these services often work beyond their skills and capacity due to a lack of access to specialist mental health services in the areas. No mechanisms for escalating clients with deteriorating mental health because of difficulties in accessing more specialist clinical mental health care.
Service accessibility among LGBTI Communities	Lack of services for LGBTI people with mental illness	Mental Health services working specifically with the LGBTI community are limited in NBM. Previous consultations have strengthened this view, indicating that LGBTI people living in the NBM region may not be receiving adequate support for mental illness [143, 157]. However, a number of local social and support groups exist for adult and young LGBTI people in particular in Katoomba, the Blue Mountains and Penrith. Clinical services including medical, nursing and social work are provided through the Sexual Health and HIV Clinic at Blue Mountains and Nepean (Penrith), and the NBMLHD Health Promotion team provide health promotion, education and referral services relevant to the NBM LGBTI communities.
Short Term Focused Psychological Interventions	<p>Major barriers to accessing NBMPHN coordinated Psychological Therapy Services include:</p> <ul style="list-style-type: none"> The need to have a health care card / or access to practitioners that bulk bill Limited capacity of psychologists and allied mental health professionals Current exclusion of young people under 25 years to the Extended referral stream 	<p>The NBMPHN Psychological Therapy Services (formerly known as ATAPS) provide short-term support to people who have mild to moderate mental health concerns and identify with one or more under-served groups. Under this service, individuals can have up to 10 sessions in a calendar unless otherwise noted below. Therapeutic services available are for community members who identify within 1 of 9 streams [158].</p> <p>Available data indicates that 1,232 people, or 331.0 per 100,000 persons of the NBM population received one or more episodes of psychological therapy service care between 1/07/18 and 30/06/19 [159]. This was an increase from 1,097 people, or 294.7 per 100,000 persons between 1/07/17 and 30/06/18, indicating that a relatively higher proportion of residents accessed these services compared to the previous year.</p> <p>Service provider feedback to NBMPHN indicates that the existing service structure stream has led to the following gaps in services:</p> <ul style="list-style-type: none"> The majority of streams require the participant to hold a health care card, yet there is a need for individuals to have cost effective access to psychological intervention in times of temporary or sporadic financial crisis. As many in the situation do not have a health care card they do not qualify and therefore need to find a Practitioner that will bulk bill. Availability of psychologists and AHPs in the region is limited, with long wait times and a lack of those that bulk bill. The introduction of the Extended referral stream allowed those with moderate to severe mental illness with added complexity inclusive of trauma, to receive 25 hours of support over a 12 month period. This stream is for people over the age of 25 yet there have been a number of referrals requesting this service for people under the age of 25. This extended service has also contributed to the demand capacity issues of the AHP offering the service in the region.

MENTAL HEALTH – CHILDREN & YOUTH

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Mental Health (Children & Youth)</i>		
Identified Need	Key Issue	Description of Evidence
Gaps In Services and Barriers to Accessing Services For Children And Youth	Inadequate paediatric and adolescent service provision in psychiatry and mental health.	<p>There are indications that the apparent increase in mental illness amongst children and adolescent over recent decades has not been met in the NBM region by increasing the range and number of services targeting this population. Previous stakeholders consultations have raised the following concerns in regard to gaps in services and barriers to service provision for this population [140, 143, 148, 160]:</p> <ul style="list-style-type: none"> • Lack of psychiatric services for children and young people. • Lack of general intervention programs for children under 12 to support complex needs. • Difficulty in finding services for 18-25 year olds, and no provision for people under 18 to be admitted to Nepean Hospital Mental Health Unit. • Inadequate sessions available through Medicare subsidised and PHN-funded psychological therapy services, in particular for persons with long-term moderate to severe mental illness / support needs, who often use up the available services quickly within the calendar year. • Costs of services for those with moderate to severe and complex mental illness who are not in crisis are perceived to be prohibitive outside the public health system. • Limited availability of online information for public mental health services to assist young people determine if the service is able to meet their needs. • Limited skills among health practitioners &/or capacity within public services to effectively assist young people with multiple diagnoses &/or complex conditions, such as eating disorders and borderline personality disorder. • Safety checks (to identify those who may be at risk of suicide) completed by Community teams are often very basic and not viewed as adequate. • Unwillingness of less acute services to continue to provide support for young people who identify they have attempted suicide, self-harm or experienced suicide ideation. This interrupts service continuity for the range of supports needed by young people to maintain mental wellbeing.
Services For Vulnerable Groups Within Young Populations	The overall perceived lack of services for young people in the region appears to be aggravated for young people in vulnerable groups.	<p>Stakeholders have indicated that children and young people who are especially vulnerable have unmet service needs. Further research is required as part of broader mapping of services to children and young people. Stakeholders raised the following concerns [138, 140, 143, 148]:</p> <ul style="list-style-type: none"> • Need for better connection for young people in and out of Home Care, Juvenile Justice, FACS, Health and NGOs, through sharing data and information to support integrated care with clinical in-reach. There are many services but little or no communication feedback loops. • Lack of service provision for children high on the Autism Spectrum.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Children & Youth)*

		<ul style="list-style-type: none"> • Lack of support for young people identifying as LGBTI. • Lack of Aboriginal and CALD youth/child mental health services. • Limited service provision for young mothers with children who are experiencing symptoms of anxiety and depression, and antenatal services for young mothers with perinatal depression. • Lack of appropriate support for homeless youth.
Adequacy Of Supported Accommodation Available For Young People With A Mental Illness	Supported accommodation available for young people with a mental health illness are inadequate and or not fit for purpose	<p>Stakeholders have raised the following issues [152]:</p> <ul style="list-style-type: none"> • Inadequacy of housing available, in particular for young people with a mental health illness. • Limited places available in care facilities that cater for people with a mental illness and which are age-appropriate for young people. • Care facilities are poorly equipped to provide appropriate support for people with a mental illness • Lack of safe and secure care facilities available for young people with a mental illness
Regional Variation In Provision Of Services	The perceived lack of service provision for children and youth may be aggravated in the upper Blue Mountains and Hawkesbury	<p>Stakeholders have identified the potential for poorer service availability in locations where there are higher proportions of young people. Concerns raised by stakeholders included the following [140, 143, 148]</p> <ul style="list-style-type: none"> • Lack of mental health services in the Upper Mountains and Hawkesbury. • Lack of Youth acute services available in Hawkesbury • Lack of outreach services across all 4 LGAs. • Lack of tertiary mental health unit for children and youth in the region. • Lack of GP's who can take children/youth. • Lack of Headspace services in Upper Blue Mountains and Hawkesbury.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Children & Youth)*

<p>headspace Services Within Region</p>	<p>There are two headspace centres in the region, located in Penrith and Lithgow</p> <p>Geographic access to headspace services for youth is localized; there is an unmet need for Headspace services in Upper Blue Mountains and Hawkesbury LGAs.</p>	<p>headspace Penrith has been in operation since May 2013 to deliver services addressing mental health, physical and sexual health, drug and alcohol and vocational issues for young people aged 12-25 years in the region. Since 2014 headspace Penrith also operates a headspace Youth Early Psychosis Program as a spoke of the western Sydney hub and spoke model. Concerns have been raised that headspace is not well integrated with GPs and that GPs do not always receive feedback when they have made a referral [138]. In 2018, NBMPHN commissioned Parramatta Mission to offer an additional Youth Severe service at the Penrith headspace centre, with outreach to Hawkesbury and Blue Mountains. The service targets young people aged 12-25 years at risk of or with a severe (non-psychotic) mental illness, and is intended to provide wrap-around services with clearly defined clinical care.</p> <p>In 2017/18 financial year, 64.1% of all clients of the Penrith headspace center resided in the Penrith LGA. 19.2% of clients resided in the Blue Mountains LGA. 7.5% of clients resided in the Hawkesbury LGA. No clients resided in the Lithgow LGA. A small proportion of clients (9.2%) resided outside the region [161]. In theory headspace Penrith is open to any young person regardless where they live. However, distance and transport issues prevent most young people from accessing headspace unless they live in the Penrith LGA or lower Blue Mountains. In addition, the NBMPHN commissioned headspace satellite service, operated by Marathon Health Ltd. was launched in August 2019. The service targets young people aged 12-25 years with low to mild mental health needs, and was launched in August 2019. Marathon Health is also delivering an additional Youth Severe service in Lithgow.</p> <p>The lack of and need for headspace type services in upper Blue Mountains and Hawkesbury has been raised at various stakeholder consultations [138, 140, 143].</p>
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LOW INTENSITY

Outcomes of the service needs analysis – Primary Mental Health Care: <i>Mental Health (Low Intensity)</i>		
Identified Need	Key Issue	Description of Evidence
Community Wide Communication To Support People At Risk Of Mental Illness	Enhanced and targeted communication methods are required to engage and inform the general population about the risks of mental illness and available supports	<p>Stakeholders previously raised the following concerns regarding community wide engagement and education concerning mental health, risks and wellbeing [117, 138, 140]:</p> <ul style="list-style-type: none"> • Need for resources and education that promote mental wellbeing. • Lack of service navigation website or tool to find appropriate services and interventions across the stepped care model. • Lack of guidance available to access appropriate, evidence-based digital interventions. • Need for support to use e-health interventions in the home. • Need for early intervention and access to low intensity services for high school and university students to start intervention before there is significant illness. <p>The Commonwealth Department of Health launched <i>'Head to Health'</i> the new digital mental health gateway for low intensity mental health services in October 2017 [162]. Some of the stakeholder concerns regarding lack of a service navigation tool have been addressed through the development and launch of NBMPHN's <i>'Mental Health Help'</i> website, a new regional Mental Health Navigation Tool.</p> <p>In 2018, NBMPHN commissioned Neami to offer an 8-week psycho-education group program (named "Optimal Health Group Program") and Live Life Get Active to deliver an outdoor physical exercise program targeting people with emerging mental health issues or who are risk of developing mild to moderate mental illness. These programs became available in the Penrith and Hawkesbury LGAs (Optimal Health Group Program) and Blue Mountains, Hawkesbury, Penrith and Lithgow LGAs (Live Life Get Active Program) in the 2018-19 financial year.</p>
Services To Support People With Low Intensity Mental Health Needs	Local 'bricks and mortar' services are available but they are not 'joined up' into a network and awareness of their capacity amongst GPs and other relevant service providers (e.g. emergency departments) is limited	<p>There is a broad range of services available within the NBMPHN catchment that include counselling and advice services. These comprise [157]:</p> <ul style="list-style-type: none"> • General counselling • Family counselling (or family support services) • Financial counselling, information, advice, education and referral services • Mental health advocacy services • Legal information and advice.

Outcomes of the service needs analysis – Primary Mental Health Care: *Mental Health (Low Intensity)*

		<p>In 2019, NBMPHN commissioned Beyond Blue to deliver the NewAccess mental health coaching service to provide an early intervention and self-referral program. The program offers in-person or phone support for setting practical and effective goals, and skill development for managing life pressures over six sessions. NewAccess is currently available only in the Hawkesbury and Lithgow regions.</p>
	<p>On-line services to support people with low intensity mental health needs are increasingly available; details on awareness and use of these services needs exploration.</p>	<p>There is a high awareness of Lifeline but this is focused on supporting people in crisis. There is a need to promote e-mental health services to stakeholders. It is expected that Australia’s national digital mental health gateway ‘Head to Health’ will facilitate access to digital mental health services as well as complementary face-to-face therapies. It will be important to create awareness of locally based ‘bricks and mortar’ services when promoting the new Commonwealth digital gateway.</p>

Alcohol and Other Drug Treatment Needs

ALCOHOL AND OTHER DRUGS: GENERAL POPULATION

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population																				
Identified Need	Key Issue	Description of Evidence																		
AOD treatment	<p>High and increasing demand for local drug and alcohol treatment service provision in the NBM region.</p> <p>Characteristics of and trends in local service provision: Publicly funded drug and alcohol treatment services.</p> <p>35 AOD treatment agencies delivered publicly funded services in the NBMPHN region</p> <p><i>Highest rate of closed AOD treatment episodes among the five metropolitan PHN regions in NSW - 66.1% of these occurring in non-residential treatment facilities</i></p>	<p>Analysis of Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS) related to specialist, publicly funded drug and alcohol treatment providers in the NBM region in 2017-18 includes [194]:</p> <p>Utilisation of AOD treatment services:</p> <ul style="list-style-type: none"> 2,861 closed AOD treatment episodes were provided in NBM in 2017-18. NBM had the <i>highest rate</i> of closed treatment episodes for AOD treatment services among <i>metropolitan</i> PHN regions in NSW, 2017-18. This indicates relatively high demand for NBM AOD treatment services compared to similar metropolitan NSW regions. Additionally, the per 100,000 population rate of closed treatment episodes increased by 44.7% between 2016-17 and 2017-18, indicating significantly growing demand for local AOD treatment services over this 12-month period. <p>Figure 17: Closed treatment episodes, NBMPHN A) 2017-18, and B) 2016-17 to 2017-18</p> <table border="1"> <caption>Data for Figure 17A: Closed treatment episodes per 100,000 people (2017-18)</caption> <thead> <tr> <th>Region</th> <th>Rate per 100,000 people</th> </tr> </thead> <tbody> <tr> <td>Nepean Blue Mountains</td> <td>890.9</td> </tr> <tr> <td>South Western Sydney</td> <td>568.7</td> </tr> <tr> <td>Central and Eastern Sydney</td> <td>489.5</td> </tr> <tr> <td>Western Sydney</td> <td>467.2</td> </tr> <tr> <td>Northern Sydney</td> <td>372.2</td> </tr> </tbody> </table> <table border="1"> <caption>Data for Figure 17B: Closed treatment episodes per 100,000 people (2016-17 vs 2017-18)</caption> <thead> <tr> <th>Year</th> <th>Rate per 100,000 people</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>615.8</td> </tr> <tr> <td>2017-18</td> <td>890.9</td> </tr> </tbody> </table> <p>AOD Treatment Delivery Setting</p> <ul style="list-style-type: none"> There were 35 AOD treatment agencies that delivered publicly funded services in the NBMPHN region. The majority (66.1%) of closed AOD treatment services occurred within non-residential treatment facilities, with a smaller number of services occurring in residential treatment facilities (29.5%) or by outreach (3.2%). 	Region	Rate per 100,000 people	Nepean Blue Mountains	890.9	South Western Sydney	568.7	Central and Eastern Sydney	489.5	Western Sydney	467.2	Northern Sydney	372.2	Year	Rate per 100,000 people	2016-17	615.8	2017-18	890.9
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Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

	<p>1,638 clients in NBM received AOD treatment with Indigenous persons were over-represented at 20.1%</p> <p>Highest proportion were aged 30-39 years (28.8%),</p> <p>Clients/family members primary source of referral to treatment services</p>	<ul style="list-style-type: none"> Between 2014-15 and 2017-18, there was growth in the number of closed AOD treatment services held within non-residential (rising from 1,165 to 1,892 treatment episodes) and residential treatment facilities (rising from 579 to 845 treatment episodes). <p>AOD treatment type:</p> <ul style="list-style-type: none"> More than one third (37.2%) of closed AOD treatment episodes were counselling. This was followed by assessment only (24.0%) and withdrawal management (18.1%). The number and proportion of counselling closed treatment episodes increased significantly between 2014-15 and 2016-17 in particular compared to other treatment types, rising from 600 to 1,188 episodes, before falling to 1,064 episodes in 2017-18. <p>Source of referral: AOD Treatment</p> <ul style="list-style-type: none"> The primary source of client referrals to AOD treatment services was by clients/family members (64.7%), followed by health service referrals (14.8%). The proportion of NBM client/family member referrals to AOD treatment services (64.7%) was significantly greater than the total for Australia (39.5%). The greatest change in source of referrals to NBM AOD treatment services between 2015-16 and 2017-18 was from corrections, increasing from 33 (1.4% of all referrals) to 123 (4.3% of all referrals). <p>Client demographics:</p> <ul style="list-style-type: none"> An estimated 1,638 clients in NBM received AOD treatment services in 2017-18. Of these, 93.9% of clients received treatment for their own alcohol and other drug use, 6.1% received treatment for other's alcohol and other drug use. The highest proportion of clients were aged 30-39 years (28.8%), 20-29 years (22.9%) and 40-49 years. Indigenous persons were over-represented, with 20.1% of NBM clients identifying as an Indigenous person. <p>Local stakeholders expressed concerns around the accuracy and limited interpretation of data possible from analysis of this AODTS minimum dataset, including [197]:</p> <ul style="list-style-type: none"> The view that the dataset is not representative of the full range of local service providers providing AOD treatment services, due to the lack of data included from private providers such as pharmacies and private rehabilitation services. Highlighting trends in treatment services by delivery setting is a direct reflection of government policy and funding requirements, rather than indicative of current service capacity or the most effective treatment options available. Presentation of data by closed treatment episodes does not provide any insight into the number or quality of treatment sessions / services actually provided to clients.
AOD treatment services	Minimal options for local access to AOD treatment.	NBMPHN preliminary investigation and consultations to date have not supported the view that certain people wish to access AOD treatment services outside their local area. By and large NBM community consultations have indicated a strong

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

	<p>Opioid treatment programs (OTP) are primarily provided by NBMLHD in all LGAs except Hawkesbury. The Hawkesbury Health Service operated by St John of God Hospital does not provide an opioid treatment program.</p> <p>Identified need for alcohol and other drug education and awareness raising with the whole community, including of local services available.</p> <p>There are no community based OTP prescribers identified as accredited and with current clients in the Lithgow LGA.</p> <p>There are no community based OTP prescribers in NBM region with capacity to take new clients.</p>	<p>preference for the provision of these services locally, particularly where families are involved. For example, services for youth, men and women with children at home.</p> <p>Lack of specialised addiction support services was the top reason cited among Lithgow survey respondents who said they would not feel comfortable in accessing a local AOD service &/or recommending a service to another person [25]. Other reasons included not aware of local service network and not accessible / long waiting list. The need for alcohol and other drug education and awareness raising with the whole community, including of local services available was highlighted.</p> <p>Preliminary mapping of AOD services undertaken below has been limited to local services in response to these findings [9, 29]. Additions will include services primarily aimed at providing mental health that also provides some AOD support with counselling.</p> <p>Opioid treatment programs [218]: Review of accredited and active OTP prescribers indicate that excluding prescribers employed by NBMLHD, there are eight community based OTP prescribers accredited who have current clients in the NBM region.</p> <ul style="list-style-type: none"> • 3 x Penrith LGA • 3 x Hawkesbury LGA • 2 x Blue Mountains LGA. <p>NBMPHN Commissioned AOD Treatment Services, 2019-20</p> <ul style="list-style-type: none"> • Aftercare/treatment for relapse prevention: targeting clients recovering from alcohol and/or other drugs addiction involving assessment and one-on-one aftercare. <ul style="list-style-type: none"> ▪ Making Choices Program based at Katoomba and Lithgow and operated by Lives Lived Well. This program targets adults including people recently released from prison. ▪ Aftercare Outreach Program based at Penrith and Hawkesbury LGAs and operated by ONE80TC. This program targets adults including people recently released from prison. ▪ WHOS Penrith Hub: Day Rehabilitation including specialist liaison support for General Practitioners in Penrith LGA ▪ Ted Noffs Foundation: Penrith Street University with targeted early intervention for young people involved in risky behaviours especially ice. This program includes outreach to young people in upper Blue Mountains and Lithgow. ▪ Lives Lived Well: Day rehabilitation for women with dual diagnosis based in Katoomba ▪ Lives Lived Well: Professional development for general practice staff regarding alcohol and other drugs.
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Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

<p>Detoxification services</p>	<p>NBM local detoxification services:</p> <p>Shortage of local detoxification services relative to population density one local public and one local private detoxification</p> <p>Significant travel time to the singular public and private service is identified as a key barrier, in particular for residents in outlying areas.</p>	<p>NBM local detoxification services [219]:</p> <ul style="list-style-type: none"> • <i>NBM Drug and Alcohol Service, Penrith:</i> Men, women and youth. Inpatient and outpatient detoxification. Supports drug use in pregnancy and opioid substitution. • <i>St John of God, Richmond (Private Hospital):</i> Men and women. Detoxification for all drugs. Provides medicated detoxification, group and individual counselling, aftercare program. 3 week in-patient rehabilitation. Psychiatrist’s referral with assessment report preferred. GPs may also refer. <p>Key issues relating to availability and access to local detoxification services include:</p> <ul style="list-style-type: none"> • Only one local public detoxification service located in the Penrith LGA is available to NBM residents. Significant travel time to this service is at least 2.5 hours one way for residents of Lithgow LGA and 0.5 to 1-5 hours for residents of Hawkesbury and Blue Mountains LGAs. • Only one local private detoxification is available to residents of NBM region. This is located within the Hawkesbury LGA with travel time ranging from 2.5 hours to 0.5 hours, one way. • Lengthy travel time is a barrier to inpatient detoxification and is also likely to be barrier to participants with family who need to stay in touch during an inpatient program. • Stakeholders have reported a noticeable shortage of localized detoxification services relative to the size of NBM region and population density [191]. • A range of metropolitan services are available outside the NBM region that would require considerable train or road travel. A number of these services are private hospitals requiring private hospital health insurance coverage.
<p>Outpatient detoxification-counselling and non-residential rehabilitation services</p>	<p>NBM local services:</p> <p>Shortage of local outpatient detoxification &/or non-residential rehabilitation services for Hawkesbury and Lithgow (for men only) LGAs.</p> <p>Lack of culturally secure services exist for Aboriginal people in the NBM region.</p> <p>NBMPHN funded WHOS Penrith Hub Day Rehabilitation</p>	<p>NBM Local services [219]:</p> <ul style="list-style-type: none"> • <i>Dianella Cottage, Katoomba:</i> commissioned by NBMPHN. For women only. Payment by donation if affordable. This is a non-residential day program with group work, 1:1 work, drop in facilities, access to SMART recovery meetings. • <i>Dianella Cottage, Lithgow:</i> commissioned by NBMPHN, this service provides non-residential day rehabilitation for men and women (now mixed gender compared to women-only previously). • <i>Woodlands Clinic: Blue Mountains Hospital:</i> Comprehensive medicated assisted treatment program for opioid dependence as an outpatient service. • <i>WHOs West, Penrith:</i> Men and women. WHO’s West offers assessment, referral services and residential supported care for individuals from the NBM districts. There are 6 transitional housing beds located in Penrith and 7 residential care beds located at the Roselle Campus. • <i>Pathways Penrith (NBMAOD):</i> Men, women and youth. Inpatient and outpatient detoxification, drug use in pregnancy, and opioid substitution. • <i>A range of State Community Health Centres:</i> provide youth and adult counselling, and other AOD support services. These services are located at the Nepean Campus (Opioid Treatment Program and Outreach), Penrith Community

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

	<p>established 2019-20 delivers culturally safe services in collaboration with Marrin Weejali. All group work is conducted with one non Aboriginal facilitator and one Aboriginal facilitator.</p>	<p>Health Centre, St Mary's Community Health Centre, Cranebrook Community Health Centre and Katoomba Community Health Centre.</p> <p>Key issues relating to availability and access to services include:</p> <ul style="list-style-type: none"> • The main regional outpatient service is provided by NBMLHD at Penrith and Katoomba locations. • A range of metropolitan services outside NBM are available that would require considerable train or road travel. A number of these services are private hospitals requiring private hospital health insurance coverage. • Lengthy travel time is a barrier to ambulatory detoxification and is also likely to be barrier to participants with family who need to stay in touch during an inpatient program. • There are no culturally secure services identified in the region areas that provide specialised AOD services for Aboriginal people, according to reports accessed. However just outside the regional boundaries, Marrin Weejali, an ACCHO is located on the eastern border near to Penrith.
<p>Residential rehabilitation & therapeutic communities</p>	<p>NBM Local Services:</p> <p>Highly selective criteria to access local residential rehabilitation in or close to NBM region – for young men or adult men at risk of or homeless only.</p>	<p>NBM Local Services [219]:</p> <ul style="list-style-type: none"> • <i>ONE80TC (formerly teen challenge), Richmond:</i> Males only 18-35 years. Long term (12 month) residential rehabilitation. Detoxification needed prior to entering program. Living skills programs, life skills management. May take co-morbid clients on case by case basis. • <i>WHOs West, Penrith:</i> Men and women. WHO's West offers assessment, referral services and residential supported care for individuals from the NBM districts. There are 6 transitional housing beds located in Penrith and 7 residential care beds located at the Rozelle Campus. <p>Key issues relating to availability and access to services include:</p> <ul style="list-style-type: none"> • The identified state funded residential rehabilitation beds for the NBM region are not located in the region. They are located in a specialist facility approximately 1 hour drive from eastern border of the region and Penrith. • One NGO provides residential rehabilitation in the NBM region. This is a long term (3 & 12 months) residential rehabilitation, with beds open to men based on selective criteria delivered by ONE80TC. • Adele House is located at Werrington and borders on the NBM region to the east, for men only. This is a 9-12 month program for adult men at risk of or homeless with MERIT beds. This program is likely to cease delivering services during 2019-20 due to funding issues. • Similar to other AOD treatment categories, a range of metropolitan residential rehabilitation services are available that would require considerable train or road travel. A number of these services are private hospitals requiring private hospital health insurance coverage. Lengthy travel time is a barrier to participants with family who need to stay in touch during a residential program.

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

		<ul style="list-style-type: none"> There are no reported self-indicated culturally secure residential rehabilitation beds for Aboriginal people in metropolitan Sydney or NBM region.
Other specialist services	Significant travel time to youth specialist services and specialist women's service in regions bordering NBM is identified as a key barrier, in particular for residents in outlying areas.	<p>NBM Local Services [219-220]:</p> <ul style="list-style-type: none"> <i>Family Drug Support, Leura (Bridging the Divide):</i> Primarily volunteer programs to offer support to families impacted by substance use. Bridging the Divide builds partnerships with treatment services and other relevant communities and organisations to improve client engagement with services and increase effectiveness of treatment. It also aims to improve service integration between treatment providers and community service providers. <i>Bernado's Penrith, Cranebrook:</i> Temporary accommodation, crisis intake. Child and family support. <i>NBMLHD Youth Drug and Alcohol Service</i> has been expanded to deliver services across the region with specialist support for young people with complex needs including social worker, family and paediatric support. <p>Key issues relating to availability and access to services include:</p> <ul style="list-style-type: none"> Two youth specialist services and one specialist women's service operate in western Sydney and regions bordering NBM. Travel time for NBM residents would range from 1 to 4 hours, one way. One specialist youth service supports non-specialist counselling for Aboriginal people in the adjoining region of Western Sydney. <p>NBMPHN funded Ted Noffs Foundation established 2019-20 to deliver early intervention for Aboriginal young people across the region. Deadly Dreaming is delivered in high schools and juvenile justice remand centre. This program is supported by culturally safe case management and counselling support.</p>
Poor access to rehabilitation services for women	Improved access to services for women and particularly women with children was identified as the highest priority	<p>NBMLHD D&A program for Substance Use in Pregnancy has been expanded for the Penrith LGA and is expected to outreach to other LGAs including Blue Mountains; Lithgow and Hawkesbury.</p> <p>Community consultations in Blue Mountains 2010 [198]:</p> <ul style="list-style-type: none"> Improved access to services for women and particularly women with children was identified as the highest priority by a large proportion of respondents. <p>Respondents recommended the following interventions:</p> <ul style="list-style-type: none"> Community based options for detoxification in safe environments for women with children Intensive support, service co-ordination and case management for women with children, possibly using a mobile-outreach model Coordinated support for pregnant substance users Child care for recovery groups

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

		<ul style="list-style-type: none"> • Outreach to Blue Mountains women’s services • Capacity development of community based workers. <p>ONE80TC has recently established its women’s residential facility in Kurmond (Hawkesbury LGA), however the service does not accept women with children.</p> <p>IMPACT:</p> <ul style="list-style-type: none"> • NBMPHN funds specialized dual diagnosis day rehabilitation services for women in Katoomba only (Dianella Cottage) • NBMLHD has expanded Substance Use in Pregnancy program
Early intervention and shared care	Inadequate service models for early intervention and shared care between the regional drug and alcohol service and general practice.	<p>Preliminary consultation with service providers indicate that [221]:</p> <ul style="list-style-type: none"> • Drug and alcohol presentations represent approximately 20% of all presentations to ED. • It is likely that one in four inpatients could meet criteria for D&A treatment however most of these patients are not aware that they have a problem. • Excluding detoxification - drug and alcohol related hospital separations are one of the top 5 medical DRGs with an average of 80 separations per month. • There are difficulties obtaining D&A consultations for patients presenting to ED and other hospital services. • There are currently no mechanisms or links for shared care or advice between the regional drug and alcohol service and general practice. <p>IMPACT:</p> <ul style="list-style-type: none"> • NBMPHN has funded a general practice liaison service based at the WHOS Penrith Hub established in 2019-20.
Early intervention, counselling and aftercare services	<p>Strong indications that access to early intervention, counselling and aftercare is fragmented and inadequately resourced.</p> <p>Poor access due to limited service hours and availability of counselling</p>	<p>Post-care or aftercare is recognised as important to prevent relapse following treatment. NADA (2013) reported that there is currently no systematic approach or dedicated funding to AOD services for the provision of post care programs across the sector.</p> <p>Consultation and review of Drug and Alcohol services indicate [222-223]:</p> <ul style="list-style-type: none"> • Limited after hour services particularly for youth (12-20 yrs) • Lack of addiction medicine specialists in community setting • Low staffing levels and long wait lists • Very limited outreach clinics for youth (12-20yrs) • Limited GP experience in dealing with D&A clients • Poorer access for Aboriginal clients

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population		
		<ul style="list-style-type: none"> • Drug and alcohol services are poor due to hours of service operation, inadequate staffing levels and difficult for youth and Aboriginal clients
Coordination of Care	D&A services operate independently of mental health services, largely operate independently of each other, have limited focus on clients holistic well-being and the 'whole of family' approach has not been adopted.	<p>Consultation and review of D&A services indicate [222-224]:</p> <ul style="list-style-type: none"> • Prevalence of dual diagnoses with mental health and D&A clients • Absence of service co-location with mental health services • Absence of service integration between AOD treatment services, including services delivered by NBMLHD, commissioned by NBMPHN and local NGO services • Poor focus on holistic care / physical well being • Lack of 'whole of family' approach in treatment plan and therapy • Greater need identified for services that support co-morbid AOD and mental health <p>Further research is required to explore models of care that incorporate holistic management.</p> <p>IMPACT:</p> <ul style="list-style-type: none"> • NBMLHD has funded St Vincent's to deliver care coordination for aftercare in NBM region. Established 2019-20.
Child and Youth D&A Services	Lack of appropriate detoxification service for young people for drug or alcohol withdrawal.	<p>Stakeholders have raised the following concerns [142, 147]:</p> <ul style="list-style-type: none"> • There is need for specific detoxification services to support the withdrawal of young people from long term drug or alcohol substance use. Further research is required to examine existing detoxification treatment options for young people in the NBM region. • Lack of provision for young people within the detox facility at Nepean Drug and Alcohol Service, with regards to being in the same environment as adults. <p>IMPACT:</p> <ul style="list-style-type: none"> • NBMLHD Youth Drug & Alcohol service has been expanded to provide specialist support for young people with complex needs. • NBMLHD Youth Drug and Alcohol service supports young people for inpatient detoxification at Nepean facility from 16 years of age.
Corrections Drug Treatment Programs	Corrections NSW drug treatment programs provide some post discharge access to support. This is limited to the location and availability of staff.	<p>The Corrections NSW program for 6-8 months and using Open Rolling groups to deliver more individualized treatment [191]. The first part of the program looks at Real Understanding of Self Help (RUSH). RUSH provides skills and works on minimising drug use.</p> <p>Additional post discharge support for ex-prisoners is now provided via NBMPHN Aftercare programs at Kingswood, Katoomba and Lithgow.</p>

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD general population

<p>Community Wide Communication For Youth: D&A</p>	<p>Enhanced and targeted communication methods are required to engage and inform young people about the use of drugs and alcohol.</p>	<p>Stakeholders have raised the following concerns regarding community wide engagement and education of young people [142, 147]:</p> <ul style="list-style-type: none"> • Lack of D&A services within the community to help engage and educate young people. • Lack of education for young people in relation to the effects of Drug and Alcohol. • Lack of community education and understanding of ICE.
<p>Workforce Capacity of primary care sector</p>	<p>There is a general view that workforce capacity for drug and alcohol services in the region could be substantially improved with training and skills development.</p> <p>Primary barriers to providing AOD treatment and care among NBM primary care providers include:</p> <ul style="list-style-type: none"> • Availability of support services for patients • Awareness of and access to pathways in and out of specialised treatment • Lack of timely feedback from services GPs refer to <p>Need for improved access to information, resources, training and a specialist &/or peer support framework for GPs providing AOD treatment and care.</p>	<p>Further research is needed to examine the potential sources of the issues raised by stakeholders to develop appropriate options. The concerns raised by stakeholders were [139, 142]:</p> <ul style="list-style-type: none"> • Poor or no engagement of persons who use drugs by local general practitioners • Increase GPs knowledge of available clinical and non-clinical services and their referral pathways. • Increase GP capacity to identify early if consumer has substance use problems • Need for trauma education for health professionals. • Lack of GP Education dual diagnosis drug and alcohol & severe mental illness. • Insufficient dual diagnosis support and supervision for private therapist. • Lack of support workers who are available after hours and on weekends. <p>Recent consultations with NBM primary care providers including GPs and pharmacies to better understand how a “Communities of Practice” framework for AOD treatment could work indicated [225]:</p> <ul style="list-style-type: none"> • GPs with greater interest and experience working with AOD issues still experienced similar barriers and challenges as their colleagues with less experience and interest. • Primarily these were around: inadequate access to local support services for their patients (including pharmacies who will does under OTP and the Pain Clinic), noting GPs are not equipped to solely manage a continuum of care for patients requiring AOD treatment and care. • Pathways in and out of specialized treatment, including community-based counselling and treatment services or more intensive interventional treatments such as Pain Clinics and withdrawal management, OTP or residential services, are not accessible to GPs nor do they have the time or resources to chase them up. The way these external services worked was not clear to the GPs consulted. • Time and patient engagement issues complicate GPs confidence and ability to provide consistent care and contribute to reluctance to take on people who have complex presentations. • GPs saw AOD as an important part of their work and indicated that improved access to information, resources and training as well as a specialist &/or peer support framework would be of benefit.

ALCOHOL AND OTHER DRUGS: ABORIGINAL PEOPLE

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD services for Aboriginal people		
Identified Need	Key Issue	Description of Evidence
Indigenous corporations – community services	The NBM region has a number of active Aboriginal corporations, especially in the Blue Mountains region to support Aboriginal community engagement with AOD regional planning for Aboriginal people.	<p>NBM region [219]:</p> <ul style="list-style-type: none"> • <i>Cawarra Women’s Refuge Aboriginal Corporation, Kingswood:</i> Provides accommodation and counselling support • <i>Indigenous Disability Advocacy Services, Penrith:</i> Disability services. • <i>Merana Aboriginal Community Association for the Hawkesbury, Richmond:</i> Community development, support, programs and resources. • <i>Blue Mountains Aboriginal Cultural and Resource Centre, Katoomba:</i> Cultural services including advocacy and resources. • <i>Gundungurra Aboriginal Heritage Association Inc., Lawson:</i> Cultural services, awareness programs and recording sacred sites. • <i>Gundungurra Tribal Council Aboriginal Corporation, Katoomba:</i> Cultural services, representing Gundungurra people. • <i>Katoomba Indigenous Outreach, Katoomba:</i> Drop in information, advisory and advocacy service. • <i>Muru Mittigar Aboriginal Education and Resource Centre, Castlereagh:</i> Employment services supporting Aboriginal people and cultural awareness.
Mainstream (NGO) programs with Aboriginal workers	The NBM region has access to a number of NGOs with Aboriginal liaison and community workers to support Aboriginal community engagement with AOD regional planning for Aboriginal people.	<p>NBM Region [219]:</p> <ul style="list-style-type: none"> • <i>Blue Mountains Youth Accommodation and Support Service Inc, Springwood:</i> Assisting homeless youth. • <i>Nepean Community and Neighbourhood Services, South Penrith:</i> Community development. • <i>Miimali Aboriginal Community Association, St Mary’s:</i> Supporting Aboriginal youth 12-18 years. • <i>Greater Western Aboriginal Health Service (GWAHS) established an AMS in Penrith during 2019.</i> <p>NBMLHD and NBMPHN Joint Aboriginal Advisory Committee for AOD and mental health:</p> <ul style="list-style-type: none"> • Established in 2016, has successfully provided ongoing input and feedback from Aboriginal communities across the region. • Has been responsible for the co-design of newly commissioned Aboriginal specific AOD and mental health programs for the NBM region. • These programs support all LGAs and target complex needs of Aboriginal people with dual diagnosis, early intervention for Aboriginal young people, and capacity building of Aboriginal workforce for AOD and mental health. <p>IMPACT OF NBMPHN COMMISSIONED AOD SERVICES:</p> <ul style="list-style-type: none"> • NBMPHN has commissioned GWAHS to provide Social Emotional Wellbeing (SEWB) services for the Penrith LGA together with linkages between the AMS and Day Rehabilitation service at Penrith. This service will assist integration of

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD services for Aboriginal people

		services between AMS and day rehabilitation and will support culturally safe wholistic care for Aboriginal people in the primary care setting.
Provision of services for Aboriginal people	Inadequate service models for early intervention and effective support and treatment	<p>In addition to the 2016 consultation with service providers indicated the same findings as for the general population (p17). Preliminary consultation with service providers indicate that [226]:</p> <ul style="list-style-type: none"> • Drug and alcohol presentations represent approximately 20% of all presentations to ED • There are insufficient numbers of Aboriginal health workers in drug and alcohol services <p>IMPACT OF NBMPHN COMMISSIONED AOD SERVICES:</p> <ul style="list-style-type: none"> • Commissioned training for Aboriginal people to obtain Diploma in Mental Health specializing in AOD. June 2019 - 9 Aboriginal students graduated from the Poche Program and are currently working in the NBM region. These graduates have more than doubled the number of trained Aboriginal workforce for AOD and mental health. • Commissioned Ted Noffs Foundation to deliver early intervention to Aboriginal young people via two linked programs. Program Deadly Dreaming delivers early intervention to high schools across the region. Program 2 Case Management & Support follows Deadly Dreaming to support Aboriginal young people and families that have been identified at risk. Preliminary results indicate that 50-80% of Aboriginal young people in NBM high schools are at high risk for substance use and self-harm.
Provision of services for Aboriginal people	Inadequate access to culturally secure detoxification and rehabilitation and aftercare services in the region.	<p>Previous 2010 service provider concerns and recommendations for improving access to services for Aboriginal people involved in substance use include [198]:</p> <ul style="list-style-type: none"> • Concerns regarding lack of aftercare to support people who were living in an environment with other substance users and experienced peer pressure to resume substance use following rehabilitation. • Training for service providers to improve awareness of the link between substance use and Stolen Generation issues • Strategies to reach young people who may be at the crossroads of substance use and substance addiction • Soft entry options for access to AOD treatment when AOD issues arise in the context of other service provision • Post treatment support for Aboriginal people who have been through residential rehabilitation programs • A culturally secure drop in centre with male and female Aboriginal workers. <p>IMPACT OF NBMPHN COMMISSIONED AOD SERVICES:</p> <ul style="list-style-type: none"> • WHOS Penrith Hub for day rehabilitation has been established in collaboration with Marrin Weejali Aboriginal Corporation who deliver and support 2 trained Aboriginal workers to this service. Marrin Weejali is located in Western Sydney and without this service collaboration could not deliver culturally safe services directly to NBM Aboriginal residents.

Outcomes of the service needs analysis – Alcohol and Other Drugs: AOD services for Aboriginal people

Capacity of Services For Aboriginal People	Inadequate capacity of service capacity within primary health to respond to Aboriginal health needs.	<p>2015 Aboriginal community consultations in each LGA identified the importance of building service capacity to meet a broad range needs for Aboriginal health service provision, including [206].</p> <ul style="list-style-type: none"> • Inadequate knowledge of health services: The primary concern is one of knowledge and lack of access to relevant information to support equitable and necessary access to health services. This prevents Aboriginal people from attempting to access a range of services. • Lack of trust in mainstream service providers was identified as a barrier to access by each of the community groups. • Cultural safety: Inadequate supply of culturally safe drug and alcohol services within the region. Additional services are needed especially to support Aboriginal people with mental health problems, and for culturally safe detoxification services or a dedicated facility. • Mental Health: There is need for more appropriate follow up and support for dual diagnosis substance abuse and mental health issues. The importance of mentoring was identified as part of a culturally safe response to mental health issues. • Engagement with services by Aboriginal people: there are no clear mechanisms for Aboriginal people to become involved in the governance of health services in the NBM region. The broad issues raised were the need for information, forums, engagement with identified providers to facilitate access and linkages to other services. <p>IMPACT OF NBMPHN COMMISSIONED AOD SERVICES</p> <ul style="list-style-type: none"> • Commissioned GWAHS SEWB Linkworker program (described above also) to support the broad range of primary health needs for Aboriginal people living in Penrith LGA.
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Indigenous Health (including Indigenous chronic disease)

Outcomes of the service needs analysis – Indigenous Health (including Indigenous chronic disease)																														
Identified Need	Key Issue	Description of Evidence																												
<p>Use of the Indigenous health check MBS item</p>	<p>Relatively poor uptake of the Indigenous Health Assessment (MBS item 715) amongst primary care providers in the NBM region compared to Australian and NSW state average.</p> <p>Possible indication of reduced capacity among NBM general practices to deliver and improve access to culturally appropriate primary healthcare services.</p>	<p>MBS item 715 is an Indigenous specific health-check performed by a general practitioner. The item available once in a 12-month period and involves assessment of the patient’s physical, psychological and social wellbeing. It also assesses what preventive health care, education and other help should be offered to the patient to improve their health and wellbeing [182].</p> <p>Despite growth in the utilisation rate of Indigenous-specific assessments (MBS item 715) in the NBM region between 2012-13 and 2017-2018 (from 12.6% to 17.5%), the proportion of NBM Indigenous persons undertaking a health assessment (17.5%) were lower than for Australia and in NSW in 2017-18 (28.5% and 25.1% respectively). In addition, the rate of growth in utilisation of health assessments was lower in NBM than for Australia and NSW in this time period. This means a higher proportion of NBM Aboriginal and Torres Strait Islander people are likely to be missing out on regular health assessments and treatment for chronic conditions for which they are eligible. This may be an indicator of lower capacity among general practices in the region to deliver culturally appropriate primary healthcare services &/or to improve access for Aboriginal people to mainstream primary healthcare services.</p> <p>Within the NBM region, the lowest utilisation of Indigenous-specific assessments were for Blue Mountains (13.3%), Richmond-Windsor (14.4%) and Hawkesbury (14.7%) SA3 locations.</p> <p>Table 17: MBS item 715 data, for selected geographical areas (Australia, NSW, NBMPHN and NBM SA3 locations), 2017-18 [182]</p> <table border="1"> <thead> <tr> <th>Geographical area</th> <th>Number of patients, MBS item 715</th> <th>Aboriginal population estimate</th> <th>Rate of service use (% of Aboriginal population)</th> </tr> </thead> <tbody> <tr> <td>Australia</td> <td>235,303</td> <td>826,941</td> <td>28.5</td> </tr> <tr> <td>New South Wales</td> <td>66,752</td> <td>265,685</td> <td>25.1</td> </tr> <tr> <td>NBM PHN</td> <td>2,832</td> <td>16,152</td> <td>17.5</td> </tr> <tr> <td>SA3 – St Marys</td> <td>545</td> <td>2,600</td> <td>21</td> </tr> <tr> <td>SA3 – Lithgow-Mudgee</td> <td>669</td> <td>3,320</td> <td>20.2</td> </tr> <tr> <td>SA3 – Penrith</td> <td>1,200</td> <td>6,539</td> <td>18.4</td> </tr> </tbody> </table>	Geographical area	Number of patients, MBS item 715	Aboriginal population estimate	Rate of service use (% of Aboriginal population)	Australia	235,303	826,941	28.5	New South Wales	66,752	265,685	25.1	NBM PHN	2,832	16,152	17.5	SA3 – St Marys	545	2,600	21	SA3 – Lithgow-Mudgee	669	3,320	20.2	SA3 – Penrith	1,200	6,539	18.4
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Outcomes of the service needs analysis – Indigenous Health (including Indigenous chronic disease)

SA3 – Hawkesbury	123	835	14.7
SA3 – Richmond-Windsor	347	2,413	14.4
SA3 – Blue Mountains	292	2,195	13.3

Figure 18: Utilisation of the Indigenous Health Assessment MBS item 715 for selected geographical areas (Australia, NSW, NBMPHN and NBM SA3 locations), 2017-18 [182]

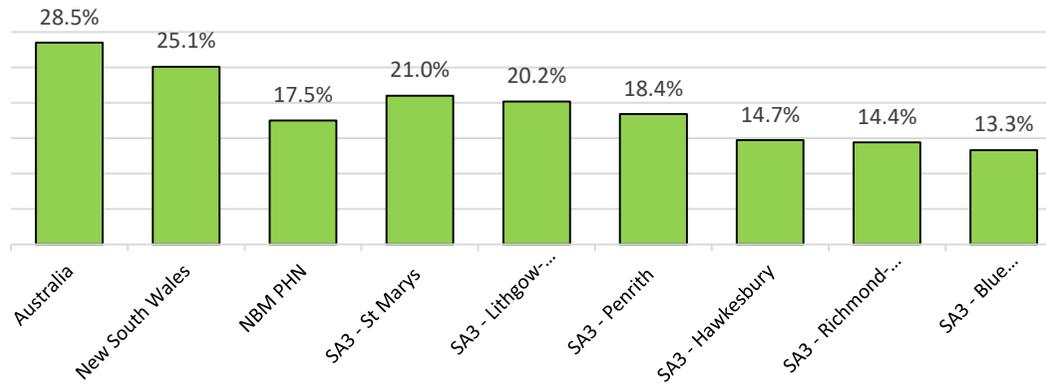
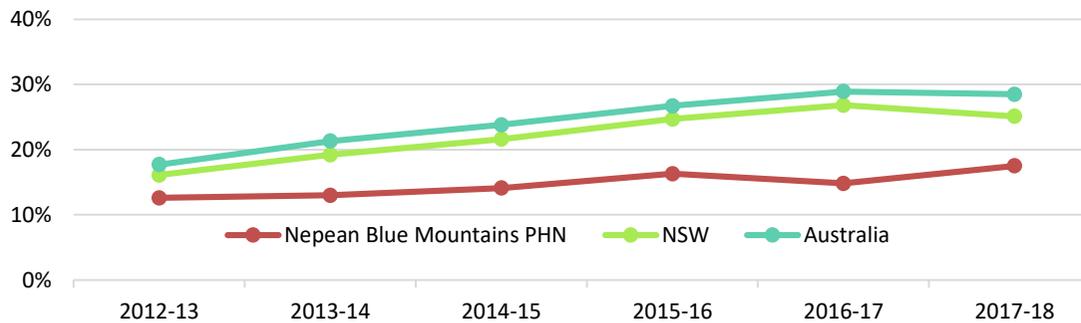


Figure 19: Utilisation of the Indigenous Health Assessment MBS 715 item, Nepean Blue Mountains PHN vs. NSW and Australia, 2012-13 to 2017-18 [182]



Outcomes of the service needs analysis – Indigenous Health (including Indigenous chronic disease)

Use of the Indigenous follow-up care MBS items

Lowest rate of Indigenous-specific follow up services within 12 months of an Indigenous health check in NBM (12.0%) among NSW PHN regions.

MBS item numbers 10987 and 81300 to 81360 are Indigenous-specific follow up items. These checks are aimed at supporting MBS item number 715, as individual health-checks alone have a limited capacity toward improving overall health outcomes. MBS item 10987 is provided by a practice nurse or registered Aboriginal Health Worker on behalf of a GP after a health check. Visits are a maximum of 10/calendar year. MBS items 81300-81360 are allied health follow-up services after a health check to a maximum of 5/calendar year [182].

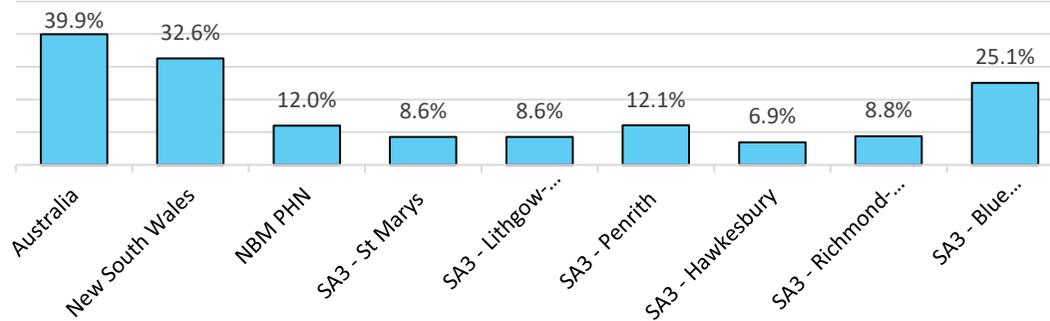
The proportion of NBM Aboriginal and Torres Strait Islander people who received an Indigenous-specific follow-up service within 12 months of an Indigenous-specific health check (12.0%) was the lowest among PHNs in NSW, and the second lowest rate among PHNs in Australia. This may be an indicator of practitioners' lack of awareness of item number, staffing issues, ineffective use of clinical information systems (for patient recall and reminders), communication and transport challenges for patients, and billing against Indigenous specific items. Within the NBM region, the lowest rate of follow-up services were for Hawkesbury (6.9%), St Marys (8.6%) and Lithgow-Mudgee (14.7%) SA3 locations.

Table 18: MBS data for items 10987 and 81300 to 81360 for selected geographical areas (Australia, NSW, NBMPHN and NBM SA3 locations), 2016-17 [182]

Geographical area	Number of follow up patients, MBS items 10987, 81300-81360	Number of health check patients	Rate of follow-up (% of health check patients)
Australia	84,365	211,508	39.9
New South Wales	19,757	60,575	32.6
NBM PHN	260	2,167	12.0
SA3 – St Marys	34	392	8.6
SA3 – Lithgow-Mudgee	43	497	8.6
SA3 – Penrith	101	830	12.1
SA3 – Hawkesbury	7	105	6.9
SA3 – Richmond-Windsor	28	318	8.8
SA3 – Blue Mountains	62	247	25.1

Outcomes of the service needs analysis – Indigenous Health (including Indigenous chronic disease)

Figure 20: Utilisation of Indigenous health MBS follow-up service items 10987 and 81300 to 81360 for selected geographical areas (Australia, NSW, NBMPHN and NBM SA3 locations), 2016-17 [182]



General practice assessment of absolute cardiovascular risk

Suboptimal routine assessment of absolute CVD risk in general practice for Aboriginal patients (64.6% of age-relevant Aboriginal patients have not had their absolute CVD risk assessed)

RACGP Guidelines for preventive activities in general practice recommends targeted screening and treatment for absolute CVD risk assessment at least every 2-years for Aboriginal and Torres Strait Islander peoples aged 35 years and older, who are not known to have CVD or who are clinically determined to be at high risk [37]. NBM general practice data indicates that among 64 of 131 (49%) general practices in the NBM region, 64.6% of Aboriginal and Torres Strait Islander patients aged 35-74 years had not had their CVD risk measured or recorded within the previous 2-years [35].

Barriers to Accessing Health Care

Lack of culturally appropriate access to health care

Social and cultural determinants of health impacting on Indigenous peoples ability to access care include [184]:

- Poverty – making it difficult to afford transportation to, or of the costs of obtaining healthcare services
- Lack of basic communication infrastructure within some communities, such as telephones to access healthcare guidance and advice
- Unemployment and lower levels of education

Issues raised through consultation and review of access to services for Aboriginal people indicate [185-187]:

- There is an ongoing unmet need for Aboriginal community controlled primary healthcare services for NBM Aboriginal community members living in Lithgow LGA, Hawkesbury LGA and Blue Mountains LGA (in particular mid to upper areas).
- A lack of culturally appropriate services delivered via NBMLHD.

Outcomes of the service needs analysis – Indigenous Health (including Indigenous chronic disease)

		<ul style="list-style-type: none">• Inequitable access to health services.• Defunding and discontinuation of the Healthy for Life Service for Aboriginal persons living in the Blue Mountains LGA. This service has not yet recommenced delivery to date through Greater Western Aboriginal Health Service (GWAHS)• There is a severe and chronic shortage of Aboriginal Health Workers in the NBM region, in particular in the Hawkesbury and Lithgow LGAs.• Inadequate levels of support, mentoring and career development available for Aboriginal Health Workers in the Lithgow area, which are needed to promote a sustainable local Aboriginal Health Workforce.• Poor access for transport to health services, particularly for Aboriginal people living in the Hawkesbury and Lithgow LGAs without access to personal transport &/or with disability, mobility issues &/or multiple chronic health issues.
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