Australian Government
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Nepean Blue Mountains Primary Health Network

Needs Assessment

2024

Wentworth Healthcare
Blue Mountains | Hawkesbury | Lithgow | Penrith

phn
NEPEAN BLUE MOUNTAINS
An Australian Government Initiative

NARRATIVE

Introduction

The Nepean Blue Mountains Primary Health Network (NBMPHN) is pleased to present our 2024 needs assessment, detailing the health and service needs of the Nepean Blue Mountains (NBM) region.

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 needs in the region. Our needs assessment is developed with a focus on meeting the PHN's 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 2024 needs assessment has been informed by previous needs assessments and the outcomes of the monitoring and evaluation of previous activities and programs by NBMPHN, captured within our annual activity plans and reports. In 2024 we have continued to build on consultation to inform the needs assessment through the valuable insights of our advisory committees and other stakeholders. Additionally, we launched our first Community Health and Wellbeing Survey. This survey comprised over 100 questions to gather feedback from our local community on their health and health services priorities We received an excellent response to the survey from right across the region.

About the Nepean Blue Mountains region

The Nepean Blue Mountains (NBM) region comprises four local government areas (LGA) with diverse geographical characteristics. It has a current population of 391,809, projected to reach 452,747 by 2041. The region has a higher proportion of Aboriginal and Torres Strait Islander residents compared to the NSW average. The region faces socio-economic disparities, with some areas experiencing extreme disadvantage, especially affecting access to health services.

Each LGA has its unique characteristics and demographics, which impact health and access to services in the NBM region.

Blue Mountains LGA

The Blue Mountains LGA has a population of 78,121 and encompasses a mix of residential, tourist and rural areas. 74% of the LGA is covered by World Heritage National Park. Major population centres include Katoomba and Springwood. More than half of resident's commute outside the LGA for work, and the primary mode of transport is by car.

Hawkesbury LGA

The Hawkesbury LGA has large areas of state and national parks and covers 2,800 sq km and is home to 67,207 residents. The LGA is divided by five river systems. Major population centres are Windsor and Richmond. Almost half of residents commute outside of the LGA for work, with more than half driving.

Lithgow LGA

National parks and state forests make up nearly two-thirds of the LGA. The LGA is predominately rural with mining activity, especially coal mining. Lithgow has the region's smallest population with 20,842 residents. Townships include Lithgow, Portland, and Wallerawang. 76% of residents work locally and the primary mode of transport to work is by car.

Penrith LGA

The Penrith LGA features residential, rural, and industrial areas. Most of the population lives along the Great Western Highway and the Western railway corridor. Penrith has the region's largest population with 217,664 residents. The region includes commercial and industrial areas, as well as agricultural land. The LGA has two major commercial centres, Penrith, and St Marys. Many residents commute outside the LGA for work, with the primary mode of transport being car. The construction of the Western Sydney Aerotropolis is expected to place higher demands on health services, particularly in Penrith LGA.

Summary of the needs assessment process

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

Data collection and analysis

- Demographic and epidemiological data, as well as social and economic determinants of health, inform data collection and analysis.
- De-identified data from general practices is aggregated to identify key population health gaps.
- MBS data is used to pinpoint service gaps in primary care, particularly in preventative health assessments and unmet need for primary mental healthcare services delivered by primary healthcare providers, GPs, specialists and for specific population groups such as Youth.
- Data from PHN commissioned mental health services is accessed via the Primary Mental Health Care – Minimum Data Set (PMHC-MDS).
- Data from PHN commissioned drug and alcohol treatment services is accessed at a regional level via the AOD Treatment Services National Minimum Data Set.
- Service and workforce mapping considers primary health workforce types and their linkages across health services, encompassing general practice, after-hours GP services, specialists, allied health, mental health, and drug and alcohol services.
- Workforce considerations focus on local primary healthcare professionals, with an emphasis on general practitioners, general practice nurses, allied health professionals, Aboriginal and Torres Strait Islander and Torres Strait Islander Health Workers, and specialists. This assessment also includes access, equity, quality, and service appropriateness.
- Research commissioned by NBMPHN, local council, and universities is used to inform local health needs and priority areas. State and National level research is used to support and compare local data, or to inform the priority areas where local data is not available.

Consultations with key stakeholders

- Consultation with local communities provide valuable qualitative insights.
- The Community Advisory Committee, representing each LGA in the region, offers essential feedback and consultation throughout the year and on a range of topics.
- Our GP Clinical Council and Allied Health Clinical Council serve as valuable sources of advice and consultation.
- Working groups, committees, and consultative groups from both community and clinician perspective provide qualitative insights and feedback.
- Collaboration with the NBM LHD mental health directorate and the Suicide Prevention Collaborative helps identify regional mental health and suicide prevention needs.
- Consultation with external bodies, in including the NSW Ministry of Health, NSW Mental Health Commission, Cancer Institute NSW, local councils, local schools, non-government organisations and commissioned service providers, offer specific feedback on population health and service gaps.

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 24-25 annual plan for the region. Staff throughout the PHN are consulted and have input into their areas of responsibility and expertise.

Summary of Key Issues

Within this section, we present an overview of the key findings in each area of focus, as detailed in the needs assessment.

General Population

Cancer Screening and Prevention

Bowel cancer screening rates in NBM have decreased to 37.0% as of 2023, below the NSW average of 37.5%. A significant portion of bowel cancer cases are identified at advanced stages. Both breast and cervical cancer screening participation remains lower than NSW averages, especially in the Blue Mountains and Penrith LGAs. Aboriginal and Torres Strait Islander women and culturally and linguistically diverse women show particularly low participation rates in breast screening, with rates below the state average. While tobacco smoking rates have generally decreased, daily smoking among pregnant women remains higher than the NSW average. There has been a noticeable increase in electronic cigarette use in the broader population. Despite lower smoking-related hospitalisations, smoking remains a leading preventable health risk.

Chronic and Preventable Conditions

Cardiovascular disease continues to pose a significant health challenge in the NBM region, with death rates above the state average. Adult obesity prevalence is high, with disparities between Aboriginal and Torres Strait Islander population and the broader population. Diabetes remains prevalent, with hospitalisations higher in Lithgow and Penrith than the Blue Mountains or Hawkesbury. The region's potentially preventable hospitalisation rates are notably higher than NSW averages. Childhood immunisations rates align with or surpass state levels, though coverage varies by LGA, with the Blue Mountains showing improvement.

Domestic Family and Sexual Violence, including Child Sexual Abuse

The NBM region faces significant challenges with domestic, family, and sexual violence, with rates of reported incidents exceeding state averages, particularly in Lithgow and Hawkesbury. These areas have seen increased rates of domestic violence related assaults, with the region experiencing higher rates of sexual assault incidents against females than the NSW average. Barriers to accessing support services, especially for culturally and linguistically diverse women and Aboriginal and Torres Strait Islander women, compound the impact of these incidents. Improved access to culturally sensitive, trauma informed care is identified as essential to support victim-survivors.

Healthy Ageing

Palliative Care

The demand for palliative care in the NBM region is projected to rise. Deaths per year are expected to increase from 2,240 in 2022 to 3,500 by 2041. Major challenges remain in the coordination of palliative services, with limited capacity and capability in the healthcare workforce, frequent delays in referrals, and a lack of integrated electronic shared care plans. Key finding from recent consultations with stakeholders highlight the need for earlier engagement in palliative care and better accessibility to GP services. Additionally, a low rate of advance care planning documentation in residential aged care homes (RACHs) contributes to gaps in care coordination.

Older Persons

The NBM region's ageing population is set to grow significantly, with projections indicated that 22% of the population will be aged over 65 by 2041, a trend that necessitates enhanced primary care coordination and a substantial increase in RACH bed capacity. Dementia, now the second leading cause of death, is expected to increase, particularly among Aboriginal and Torres Strait Islander populations, amplifying the need for dementia specific services and workforce training. Additionally, barriers to service access, such as limited public transport and high health costs, compound the challenges faced by older residents, especially those with disabilities and mobility limitations.

Workforce

The NBM region faces a critical workforce shortage, particularly among GPs, nurses, specialists, and allied health professionals. Currently the GP-to-patient ratio is strained, and an estimated 193 additional GPs will be required by 2036 to maintain the current levels of service. Recruitment challenges persist, especially in rural and peri-urban areas like Lithgow and the Upper Blue Mountains, where attracting healthcare professionals is difficult despite DPA classification. Nursing workforce shortages are also anticipated nationally by 2025, which could impact chronic disease management programs that rely heavily on practice nurses. The heavy reliance on International Medical Graduates and an ageing GP workforce further complicates staffing stability in the region.

After Hours Care

The demand for after-hours healthcare services in the NBM region exceeds the national average, particularly among elderly and working-age populations who often rely on these services. The Upper Blue Mountains lacks a medical deputising service provider due workforce shortage, and in areas like the Hawkesbury after-hours services have been reduced. Many residents must travel to urban centres or rely on emergency departments for after-hours care. Local surveys indicate that while some residents believe after-hours services are sufficient, Lithgow residents report unmet needs.

Digital Health

Digital Health tools, particularly telehealth, My Health Record and electronic prescriptions have significantly improved healthcare accessibility in the NBM region. Telehealth use surged during the COVID-19 pandemic, with sustained utilisation across various demographics. However, digital literacy and internet access remain barriers, especially for older adults and rural residents. My Health Record adoption is strong in general practices, though uptake in residential aged care homes and allied health remains limited due to interoperability issues. Electronic prescriptions are now widely accepted across pharmacies, although infrastructure gaps persist in some rural areas.

Primary Mental Health Care

Suicide prevention

Suicide rates in the NBM region fluctuate with Lithgow Mudgee SA3 showing the highest rates. Self-harm hospitalisations remain higher for females, particularly those aged 15-24, with a significant disparity in rates among Aboriginal and Torres Strait Islander populations.

Mental health

It is projected that in 2024-2025, more than 66,000 individuals in the region will need mental health services. The prevalence of mild, moderate, and severe mental illness has grown, with the highest burden observed in Penrith and Lithgow. Psychological distress rates have increased. Mental health related hospitalisations are notably high among Aboriginal and Torres Strait Islander populations. Service fragmentations and limited access to psychiatric care further impede necessary and consistent treatment.

Psychosocial support for people with severe mental illness

Isolation and limited mental health knowledge impede community participation for Aboriginal, CALD and homeless populations in NBM. Co-morbidities with substance use and chronic physical conditions are prevalent. Culturally appropriate services are lacking, with language barriers and mental health stigma limiting access to essential care.

Alcohol and Other Drugs

Alcohol, methamphetamine, and cannabis remain the primary substances of concern among clients seeking treatment at NBM commissioned AOD services. Methamphetamine use has risen significantly along with hospitalisation rates due to methamphetamine use. Prescription drug misuse persists, particularly among young people, who face complex AOD needs and limited access to specialised services. Aboriginal and Torres Strait Islander people experience disproportionately high rates of substance use, with cannabis and methamphetamine posing significant challenges. Systematic barriers, including transportation challenges and a lack of local detoxification services, particularly affect access for rural and remote residents.

Disaster and Emergency Management

The NBM region experiences increasingly frequent and severe climate related events, including extreme heat, bushfires, and floods. Penrith and surrounding areas frequently surpass 50 degrees during summer. Bushfires have drastically impacted respiratory health due to hazardous air quality. Floods and storms have contributed to water contamination, mould issues, and injuries particularly impacting rural communities reliant on tank water. Mental health challenges including anxiety and trauma are prevalent in communities repeatedly impacted by such disasters.

Additional Data Needs and Gaps

The PHN has identified the following data needs and gaps:

- The availability of more data at a localised level (LGA or SA3) would enable better targeted analysis of the unique needs of different parts of the region.
- Our participation in the Right Care First Time Where You Live program will allow for better mental health service mapping particularly for youth.
- Enhancing analysis of de-identified, aggregated clinical data from general practices to better assess local needs.
- Identifying service gaps or inappropriate models of care is an ongoing challenge due to limitations in workforce data collection. However, our involvement in the Greater Western Sydney Workforce Strategy Working Group seeks to rectify this.

Additional comments or feedback

The availability of additional resources from the Department of Health and Aged Care and AIHW will support future needs assessments 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. Better availability of more up to date/real time data would also aid in the identification of needs and service outcomes.

HEALTH AND SERVICE NEEDS

POPULATION HEALTH

Health Needs

Nepean Blue Mountains Population Profile [1]

The NBM region has a population of 391,809, with a population density of 42.69 persons per square kilometre. Of this population, 49.4% are male and 50.6% are female.

The NBM region has experienced population growth across various age groups from 2016 to 2021, particularly among families with young children, retirees, and seniors. The region's population of babies, primary and secondary schoolers is growing steadily, reflecting a stable influx of young families. However, the young adult demographic (18 to 34 years) is underrepresented compared to Greater Sydney, suggesting that many may leave the area for education or employment opportunities. The population of older adults and retirees is increasing significantly. The elderly aged (85+ years) remain a smaller proportion of the population compared to Greater Sydney.

NBM is one of the faster growing regions in NSW, driven by population growth in Penrith as a part of the expansion of Greater Western Sydney. The estimated residential population (ERP) in NBM region was 387,496 in 2022 and is estimated to grow to 452,747 by 2041.

Within the NBM region, 17,906 individuals identify as Aboriginal and Torres Strait Islander, making up 4.7% of the total population. Projections from the Australian Bureau of Statistics (ABS) in 2019 suggest that the Aboriginal and Torres Strait Islander population in New South Wales is expected to grow between 1.8% and 2.1% per year. This growth rate is higher than the projected growth for the total Australian population, which is estimated to be between 1.3% and 1.7%.

The distribution of the Aboriginal and Torres Strait Islander population within the NBM region varies by Local Government Area (LGA). In the Blue Mountains, 2,107 people identify as Aboriginal and Torres Strait Islander, representing 2.7% of the LGA's population and 11.76% of the NBM's total Aboriginal and Torres Strait Islander population. In the Hawkesbury, there are 3,257 individuals (4.8% of the LGA population), accounting for 18.19% of the NBM's Aboriginal and Torres Strait Islander population. Lithgow has 1,614 people (7.7% of the LGA population), contributing 9.01% to the total. Penrith has the highest number, with 10,928 individuals (5% of the LGA population), comprising 61.04% of the Aboriginal and Torres Strait Islander population in the NBM region.

Notably, Aboriginal and Torres Strait Islander people under the age of 25 make up 51.8% of the total Aboriginal and Torres Strait Islander population in the NBM, compared to 32.8% for the non-Aboriginal and Torres Strait Islander population.

The region also has a diverse cultural makeup. In 2021, 19.7% of residents were born overseas, lower than the state average of 29.3% for New South Wales. The top five countries of origin for residents from predominantly non-English speaking backgrounds were India, the Philippines, China, Malta, and Fiji, with India accounting for the largest group at 2%. The Penrith LGA has the highest

proportion of overseas-born residents at 23.3%, followed by Blue Mountains (17.4%), Hawkesbury (13.3%) and Lithgow (10.1%).

English language proficiency varies across the NBM region. Penrith LGA has the highest proportion of residents who report that they "speak English not well" or "not at all" (2.2%). According to ABS data, individuals with limited English proficiency face greater challenges in accessing healthcare, employment, education, and other essential services.

An estimated 1,181 people are homeless, with the majority (66%) residing in Penrith, followed by Hawkesbury (20%), Blue Mountains (10%), and Lithgow (2%).

The region's Socio-Economic Indexes for Areas (SEIFA) scores indicate levels of disadvantage: Lithgow has the highest level of disadvantage with a score of 935, followed by Penrith (991), Hawkesbury (1026), and the Blue Mountains (1048). 42% of respondents to the NBM Community Health and Wellbeing survey indicated that their living conditions impact their health [2].

Life Expectancy [3]

Nationally, Aboriginal and Torres Strait Islander males born between 2020 and 2022 have a life expectancy of 71.9 years, while females are expected to live to 75.6 years. In comparison, non-Indigenous males are expected to live to 80.6 years, and non-Indigenous females to 83.8 years. Furthermore, Aboriginal and Torres Strait Islander individuals living in lower socio-economic areas have a life expectancy approximately four years shorter than those in the highest socio-economic areas. In the lowest socio-economic areas, life expectancy decreases to around 68 years for males and 73 years for females, compared to 72 years for males and 77 years for females in the highest socio-economic areas (AIHW, 2020).

In the Blue Mountains LGA, males born in 2020 are expected to live to 83 years, while females are expected to live to 86.2 years. In the Hawkesbury, the life expectancy for males born in 2020 is 82.2 years, and for females, it is 85.9 years. In Lithgow, males are expected to live to 81.6 years and females to 85.9 years. In Penrith, the life expectancy for males is 80.9 years, while for females, it is 85 years.

Fertility Rates [4-6]

The total fertility rate (TFR) for the NBM region has shown some variation from 2001 to 2022 but has generally remained above the average TFR for NSW during this period. In the early 2000s, the TFR for the Nepean Blue Mountains PHN was consistently at or above 2.0, peaking at 2.2 in 2007. This is higher than the average for NSW, which hovered around 1.8 to 1.9 during the same period.

From 2008 onwards, the TFR in the NBM region slightly fluctuated between 1.9 and 2.1, demonstrating relative stability. In contrast, the overall TFR for NSW showed a gradual decline, dropping from 1.9 in 2008 to 1.6 by 2022.

In recent years, from 2017 to 2022, the NBM region's TFR declined to 1.9 in most years, with a brief increase back to 2.0 in 2021 before returning to 1.9 in 2022. This remains above the NSW average, which has fluctuated between 1.6 and 1.7 in the same period.

In 2022, the proportion of women giving birth at age 19 or younger is highest in Lithgow LGA (4%), significantly above the NSW average of 1.4%. This indicates a higher prevalence of teenage births in this LGA. Penrith LGA follows with 2.1%, also above the state average, while Hawkesbury has 0.8% and the Blue Mountains has the lowest proportion at 0.3%. Women aged 20-34 years constitute most births in all LGAs and is most prominent in Hawkesbury (82.3%), Lithgow (79.2%), and Penrith (77.5%), all of which are higher than the NSW average of 70.8%. The Blue Mountains has the lowest proportion of births in this age group (68.7%) within the NBM region, falling below the NSW average. The Blue Mountains has the highest percentage of women giving birth at 35 years or older (31%) in the NBM region, significantly above the state average of 27.8%. In contrast, Hawkesbury, and Lithgow both have the lowest proportions at 16.8%. Penrith has a slightly higher proportion (20.4%) but remains below the state average.

In the NBM region, the percentage of Aboriginal babies born with a healthy birth weight generally improved over the decade, starting at 88.3% in 2012 and reaching a peak of 93.6% in 2018. Despite some fluctuations, such as a decline to 89% in 2020, the percentage rose again to 91.2% in 2022. This upward trend indicates progress toward achieving the National Agreement on Closing the Gap target, which aims for 91% of Aboriginal babies to be born with a healthy birth weight by 2031. As of 2022, the region is on track to meet this target.

For non-Aboriginal babies, the percentage of those born with a healthy birth weight has consistently been higher, ranging from 93.1% to 94.7% over the same period. In 2022, the percentage stood at 94.4%, reflecting a stable and slightly increasing trend over the years.

The difference in healthy birth weight outcomes between Aboriginal and non-Aboriginal babies highlights ongoing disparities, although the data indicates improvement for Aboriginal infants in recent years. The factors influencing these outcomes include social, cultural, and environmental determinants, as well as health-related behaviours such as smoke-free pregnancies, early and regular antenatal care, and healthy lifestyle choices during pregnancy.

Health Literacy

Low health literacy levels can negatively affect health outcomes. CALD communities often have lower health and digital health literacy, which impacts their ability to understand health information, manage health conditions, and engage with digital health services such as telehealth or online booking systems. Low health literacy is a risk factor for poor health as it influences an individual's capacity to make informed decisions about their health and healthcare [7].

The latest survey on health literacy conducted by the Australian Bureau of Statistics in 2018 found that [8]:

- 4.2% of people did not feel supported or understood by their healthcare provider.
- 2.8% reported insufficient information to manage their health.
- 8.5% did not feel that they were actively managing their health.
- 17.2% felt unable to adequately appraise health information.

The likelihood of encountering health literacy barriers is higher among people who speak English as a second language, those with lower educational attainment, individuals with disabilities, and people with low incomes [9].

In 2022, Wentworth Healthcare introduced the Health Literacy Framework to advance the vision of ensuring that people in the Nepean Blue Mountains region receive information and advice about their healthcare that is easy to understand, enabling them to make informed decisions.

46% of respondents to the NBM Community Health and Wellbeing survey indicated that their GP explains things in a way they can understand extremely well, whilst 27% reported that their GP sometimes explains things well. However, 65% of respondents who saw an allied health professional reported that their health professional explains things extremely well and a further 27% reported that their allied health professional sometimes explains things well [2].

75% of respondents reported that they get their healthcare information from a healthcare professional, whilst 42% reported using the internet as a source of information [2].

Service Needs

Culturally appropriate care [9]

Consultations and reviews of access to health services for Aboriginal and Torres Strait Islander people in the NBM region reveal a significant lack of culturally appropriate care. Inequitable access to health services is a persistent issue, particularly in the Hawkesbury and Lithgow LGAs, where there is a shortage of Aboriginal and Torres Strait Islander Health Workers. The lack of adequate transportation further limits access for individuals, especially those with disabilities, mobility issues, or multiple chronic conditions who do not have personal transport. Health services that are not culturally sensitive or competent create distrust and deter Aboriginal and Torres Strait Islander people from seeking care, particularly if they have previously had negative experiences. 45% of respondents to the NBM Community Health and Wellbeing survey, that identify as Aboriginal and Torres Strait Islander indicated that healthcare services are only sometimes sensitive to their cultural needs, whilst 39% responded that health care services are always sensitive to their cultural needs.

The inconsistency in the availability and appropriate use of interpreters also contributes to this issue. Some health providers rely on family members for interpretation, which is problematic due to confidentiality and accuracy concerns. Even when professional interpreters are available, they may sometimes provide inaccurate translations or give inappropriate personal advice. Of those who indicated that they speak a language other than English at home in the NBM Community Health and Wellbeing Survey, 91% indicated they can easily access health information in their own language, 38% indicated that translator services are not or only sometimes available when needed. 44% indicated they can easily access translator services. 51% of respondents that speak a language other than English at home reported that healthcare services are either never or only sometimes sensitive to the respondents cultural needs [2].

Challenges are also identified in services for refugees settling in the NBM region. Service providers face difficulties in meeting the complex health needs of these populations, which include mental health issues related to trauma, physical health conditions like diabetes, dental health problems, women's sexual and reproductive health concerns, and diet-related issues such as malnutrition and post-migration obesity.

Barriers to accessing healthcare among these communities include poor awareness of health issues, a lack of culturally adapted services, breaches of confidentiality by interpreters, fear of mental illness diagnoses, and the cost of services, including MBS gap fees.

Health services are under-resourced, leading to overworked staff and a lack of modifications needed for effective outreach and engagement with refugee communities. Most services are provided in English, with limited use of interpreter services, highlighting a lack of cultural awareness among General Practitioners and other healthcare providers. There is also inadequate patient follow-up, poor communication between service providers, and a lack of mechanisms for recording patient background information.

Additionally, there is no funding for interpreter services for accessing allied health services, making it cost-prohibitive for non-English speakers to access these services. Only certain service providers, such as GPs, pharmacists, and real estate agents, have access to funded priority interpreter lines further limiting the accessibility of health services for individuals who do not speak English well or at all.

Transport

The NBM region faces significant challenges regarding transportation and access to services, particularly in its more isolated and rural areas such as Lithgow and Hawkesbury. The region's geographical diversity and inadequate public transport options exacerbate these issues, making it difficult for many residents to access essential health services. Only 52.9% of NBM residents work within the region, and 44% live and work in the same Local Government Area (LGA), indicating a reliance on local resources. The data shows that 47.3% of NBM residents travel to work by car compared to 34.2% in Greater Sydney, highlighting a greater dependence on private vehicles due to the limited availability of public transport options. In contrast, only 2.3% of NBM residents use public transport, significantly lower than Greater Sydney's 5.5%. Lithgow LGA shows a heavy reliance on cars (63.2%) with minimal use of public transport (0.5%) [10].

Consumers have reported inadequate transport options due to either high costs or lack of suitable services, particularly in regional and remote areas like Hawkesbury and Lithgow. Public transport is often unavailable after hours, and long waiting times for services are common. In Lithgow, for example, the high costs of travel to Nepean Hospital further complicate access to essential services. The Hawkesbury LGA faces issues with limited North-South transport options and no direct trains to Westmead Hospital, affecting access to specialist care. Additionally, poor infrastructure such as limited parking and inadequate footpaths, as reported by residents with disabilities, further restricts mobility and access within the community [11].

These challenges are particularly burdensome for culturally and linguistically diverse communities, newly arrived individuals, and women, who may not have access to private vehicles. Health consumers in the NBM have also cited problems such as the high number of connections required for travel, poor availability of transport for individuals with mobility issues, and frequent cancellations of community transport services due to a lack of drivers [12]. Seniors in the Blue Mountains also highlighted infrequent train services and limited bus routes, making it challenging for those without personal vehicles to attend medical appointments or social activities [13].

Research by the NBMPHN identified that 10,438 residents reported difficulty or inability to travel due to transportation barriers over a 12-month period. Special needs groups, including Aboriginal and Torres Strait Islander people and those with serious health conditions like cancer, are particularly disadvantaged by these transportation issues, which can deny them access to necessary health services [9].

Cost

Cost is a barrier to accessing healthcare services for NBM residents. Consumer feedback indicated that high out-of-pocket expenses and a lack of bulk billing options present financial barriers, especially for those not eligible for Medicare. Refugees and asylum seekers are particularly affected due to unemployment and Medicare ineligibility [12].

In the NBM region, the bulk billing rate for the 2023-24 financial year is 83.2%. This represents a slight decline of 1.4% from the previous year, where the rate was 84.6%. Despite this decrease, the Nepean Blue Mountains PHN still maintains a bulk billing rate higher than the overall NSW average, which is 76.8% for 2023-2024, down from 78.0% in 2022-2023. Compared to other PHNs across NSW, Nepean Blue Mountains PHN's bulk billing rate remains among the higher end, just behind South Western Sydney (86.4%) and Western Sydney (85.2%). In contrast, regions like Central and Eastern Sydney (74.0%) and Northern Sydney (66.3%) have much lower bulk billing rates [14].

In addition to declining bulk billing rates, patients in Nepean Blue Mountains region are facing increasing out-of-pocket expenses. The average patient contribution per service has risen from $87.51 in 2023-23 to $89.58 in 2023-24. This figure is higher than the average patient contribution in NSW, which has also increased from $81.37 to $84.57 over the same period. The higher out of pocket costs in NBM suggest that while the region has been able to maintain higher bulk billing rates, the financial burden on patients is increasing. This is consistent across NSW region like Western Sydney ($98.52) and Central and Eastern Sydney ($95.94) have some of the highest out of pocket costs. Areas like South Eastern NSW ($73.15) and North Coast ($68.23) have lower patient contributions but also experience lower bulk billing rates [14].

In the Nepean Blue Mountains region, the GP Non-Referred Attendance (NRA) bulk billing rate for the 2023-24 financial year is 91.1%. This represents a decline of 1.9% from the previous year, where the rate was 92.9%. Despite this decrease, the Nepean Blue Mountains PHN still maintains a bulk billing rate higher than the overall NSW average, which is 81.9% for 2023-24, down from 84.2% in 2022-23 [14].

Compared to other PHNs across NSW, Nepean Blue Mountains PHN's GP NRA bulk billing rate remains among the highest, slightly behind South Western Sydney (94.0%) and Western Sydney (93.3%). Central and Eastern Sydney (78.0%) and Northern Sydney (71.3%) have the lowest bulk billing rates in NSW [14].

The average patient contribution per service has risen from $38.26 in 2022-23 to $41.25 in 2023-24. This figure is lower than the average patient contribution in NSW, which has increased from $42.23 to $44.65 over the same period [14].

Penrith has the highest rate of bulk billing practices, representing 44.7% of all practices in the Nepean Blue Mountains region. It also has a smaller percentage of mixed billing (9.1%) and private billing practices (1.5%). Blue Mountains and Hawkesbury contribute similarly to the region, with mixed billing practices being more common (14.4% and 17.4%, respectively), and each LGA contributes 3.0% of the bulk billed practices. Neither has private billing practices. Lithgow has an almost equal representation of bulk billing and mixed billing practices,

contributing 3.0% and 2.3% respectively, to the region. It also has a small number of private billing practices, making up 0.8% of the region's total [15].

The estimated percentage of people aged 18 years and over with private health insurance hospital cover in 2019-20 was 55.1% across the NBMPHN region, compared to 56.5% in Australia (ABS 2021b). Although there is no more recent data at SA3 level, the breakdown by LGA for 2014-2015 was as follows: 58.7% in Blue Mountains, 54.0% in Hawkesbury LGA, 39.3% in Lithgow LGA and 44.9% in Penrith LGA [9].

CANCER SCREENING AND PREVENTION

Health Needs

Tobacco Use [16]

The Reporting for Better Cancer Outcomes insight report (Cancer Institute NSW 2024) for the Nepean Blue Mountains Primary Health Network highlights the daily smoking rate in the region has increased from 8.0% in 2022 to 11.2% in 2023. This rate is just below the NSW average of 11.7%, but NBMPHN has the third highest daily smoking rate of all NSW PHN regions. The occasional smoking rate has decreased slightly, from 3.0% in 2022 to 2.7% in 2023, and NBMPHN now has the lowest occasional smoking rate among all NSW PHNs. 48.5% of respondents to the NBM Community Health and Wellbeing Survey reported that have used tobacco products with 88% having used cigarettes and 29% using vapes. The highest prevalence for cigarette use is found in the 70-84 age group, whilst use of vapes is found most predominately in the 25–34-year age group. 51% of respondents reported that they believe smoking has negatively impacted their health, whilst a further 16% were unsure. 84% reported having tried to quit smoking previously, with 80% of those able to quit permanently. 90% of respondents who smoke are aware of programs and resources available to assist with quitting [2].

In 2022, 40.6% of pregnant women who smoked quit during pregnancy, a figure higher than the NSW average of 37.7%. Among Aboriginal women who were pregnant smokers, 25.3% quit smoking, slightly below the NSW average of 25.9%. The daily smoking rate for Aboriginal and Torres Strait Islander adults in 2023 is 21.9%, a slight increase from 21.8% in 2022. Additionally, 82.9% of Aboriginal and Torres Strait Islander households are now smoke-free.

The report also shows a significant increase in electronic cigarette use across NSW. The rates of people who have used e-cigarettes at least once have risen from 9.7% in 2020 to 19.3% in 2023, while current use has grown from 2.1% in 2020 to 8.5% in 2023. Among Aboriginal and Torres Strait Islander adults, the rates of people who have used e-cigarettes at least once increased from 13.2% in 2019-2020 to 30.5% in 2022-2023, with current use rising from 2% to 14.8% over the same period. In NSW, young people aged 16-24 have the highest rates of e-cigarette use, with males more likely to try and use e-cigarettes (21.5% vs 15.8% for those who have used at least once). Adolescents who perceive e-cigarettes positively or have family and friends who vape are more likely to be curious or susceptible to use [17].

The proportion of regular clients with a smoking status recorded in their GP clinical record is 60.0%, which is the lowest rate among all NSW PHNs and below the Australian average of 65.1%. NBMPHN also recorded a Quitline NSW inbound call rate of 4.4 per 1,000 smoking population in 2023, a decrease from 2021 and well below the NSW average rate of 8.4 per 1,000.

In the Nepean Blue Mountains region, the rate of smoking-attributable hospitalisations has decreased over time, from 577 per 100,000 in 2013/14 to 475.2 per 100,000 in 2021/22. The highest rate recorded was in 2016/17 at 603.10 per 100,000. Similarly, in NSW the rate has decreased from 630.2 per 100,000 in 2013/14 to 563.3 per 100,000 in 2021/22. Nepean Blue Mountains has consistently recorded slightly higher rates than NSW, but both display downward

trajectory. Males have the highest smoking-attributable hospitalisations rates compared to females, 556.3 per 100,000 vs 405 per 100,000 in 2021/22 [18].

National Cancer Screening Programs

Bowel Cancer Screening [16]

Bowel cancer screening in the Nepean Blue Mountains (NBM) region was 37.0% in 2023, just below the NSW rate of 37.5%. In 2021, 35.2% of eligible participants were screened, reflecting a decrease of 4.1% from 2019. This was slightly lower than the NSW rate at the time, which was 35.4%.
Between 2017 and 2021, 54% of bowel cancer patients in the NBM region were found to have cancer that had already spread to adjacent organs, lymph nodes, or other parts of the body at the time of diagnosis.

In 2023, screening rates within the NBM region varied, Penrith had a rate of 34.7%, the Blue Mountains had 43.1%, Hawkesbury had 38.7%, and Lithgow had 37.4%, compared to the NSW average of 37.5%. Females had a higher screening rate than males, with 39.3% of females and 36.0% of males being screened in 2023. The age group with the highest screening rate was the 70-74 age range, where 46.3% of males and 48.1% of females participated in screening.

Breast Screening [16]

Breast cancer screening in NBM region saw 47.2% of age-eligible women participate in screening during 2022-24. This marks an increase from 43.7% in 2020-21 among women aged 50-74, although it represents a decrease from the 48.8% participation rate in 2018-19. NBM screening rates remain slightly lower than the NSW average of 47.7%.

For Aboriginal and Torres Strait Islander women in the NBM region, breast screening participation was 36.0% in 2022-24, up from 33.9% in 2020-21. The screening rate for this group remains well below the state average of 44.6% for Aboriginal and Torres Strait Islander women.

Among CALD women in the NBM region, 34.6% were screened in 2022-24, a slight increase from 33.5% in 2020-21 but down from 41.1% in 2018-19. This rate remains below the NSW average of 35.7% for CALD women.

In 2023, 27.3% of age-eligible women in the NBM region had never attended a breast screen, a slight decrease from 27.8% in 2022 but still an increase from 23.5% in 2019. This rate is higher than the NSW state average of 23.8%.
Breast screening participation rates by LGA in the NBM region show the following:

- Hawkesbury: 47.0% of women, 31.8% of Aboriginal and Torres Strait Islander women, and 36.1% of CALD women.
- Lithgow: 45.6% of women, 35.2% of Aboriginal and Torres Strait Islander women, and 57.5% of CALD women.
- Blue Mountains: 49.0% of women, 37.7% of Aboriginal and Torres Strait Islander women, and 31.4% of CALD women.
- Penrith: 46.5% of women, 37.0% of Aboriginal and Torres Strait Islander women, and 34.5% of CALD women.

Cervical Screening [16]

The Human Papillomavirus (HPV) vaccination coverage for one dose among 15-year-olds in the NBM region was 83.8% in 2023, compared to the NSW rate of 85.9%. NBMPHN ranks 8th out of all NSW PHNs for vaccination coverage.

The cervical screening participation rate for women aged 25-74 in the NBM region was 56.4%, which is lower than the NSW rate of 60.6%, ranking NBMPHN 6th among NSW PHNs. The highest participation rate was in the 25-29 age group, with 62.4%. Of the cervical screens completed in 2023/24, 30.7% were self-collections, higher than the NSW rate of 25.9%. 29% of respondents to the NBM Community Health and Wellbeing Survey indicated that at their most recent cervical screening they opted to use the self- collect method, 45% chose not to, whilst 25% reported not knowing about the process [2]. In terms of GP clinical records, 28.2% of regular female clients had an up-to-date cervical screening test recorded, which is lower than the Australian rate of 37.5%.

Additionally, 22% of NBMPHN patients with cervical cancer had their cancer spread to adjacent organs, regional lymph nodes, or other parts of the body at the time of diagnosis.

Melanoma [16]

Melanoma was the fourth most common cancer in NSW, with 4,941 new cases diagnosed in 2021. This number is projected to increase to 5,479 in 2024, resulting in an estimated 460 deaths across the state each year. The incidence of melanoma rises dramatically among males in their 40s. Between 2017 and 2021, 22% of melanoma cases in the NBM region were found in people aged 75 and over; 18% of these individuals live in regional or remote areas, and 13% are from the region's most disadvantaged areas. However, at the time of diagnosis, 80% of men and 84% of women had melanoma localized to the tissue of origin.

Surveys conducted by Cancer Institute NSW revealed that in 2022, 49.2% of NBM respondents reported always or often wearing sunglasses when outside in the sun, a decline from 61.5% in 2018. Only 32.7% of NBM respondents said they seek shade when outdoors, compared to 41.1% in 2018. Additionally, 22.3% of NBM residents surveyed reported always or often applying sunscreen, down from 27.1% in 2018.

Service Needs

Integration Issues [9]

Consultations with general practices in the NBM region indicate that poor integration between electronic systems is a significant challenge. This lack of integration affects how primary care providers receive cancer screening test results, manage recalls and reminders for screening, and accurately identify under-screened or never-screened patients.

Specific integration issues include the reliance on paper-based results for the National Bowel Cancer Screening Program as a default option for practices. There is also a lack of standardisation in the electronic coding of Pap-test pathology results across pathology providers. Additionally, cancer screening results are often poorly recorded or not entered in the relevant fields within clinical software systems, typically requiring manual data entry by General Practitioners.

The quality of practice data on patient screening, including records of those screened, never screened, and their last screening dates, is often poor. General Practitioners also have trouble interfacing with state-based cancer screening registers, making it challenging to access patients' screening histories. Furthermore, accurately identifying patients who have never been screened or are overdue for screening is complicated, as clinical software and external data extraction tools often fail to support this functionality effectively.

Other barriers include information technology challenges with general practice clinical software, limited GP time, competing priorities, and insufficient financial incentives to engage patients in screening. There is also a disconnect between the implementation of the National Bowel Cancer Screening Program and general practices.

Barriers to participation in the National Bowel Cancer Screening Program

Qualitative research identified several barriers to participation in the National Bowel Cancer Screening Program (NBCSP) among men from various CALD groups in the NBM region. Key barriers include a lack of knowledge about the screening program and low health literacy. Many men perceived a low risk of bowel cancer, believing that screening was unnecessary due to the absence of digestive symptoms or a family history of cancer. Additionally, fear and fatalism played a role, with some men feeling helpless or hesitant to learn the results of the test. Sociocultural factors also influenced participation, with barriers related to language, education level, transportation, income, and differing health beliefs and customs. Concerns and misconceptions about the test itself—viewing it as unpleasant, embarrassing, or confusing it with other exams—further discouraged participation. The lack of GP recommendations for screening was another barrier, as low endorsement in primary care limited encouragement to participate [19].

Barriers to promoting the NBCSP among primary care providers in the NBM region included limited opportunities to prompt participation, as many men seldom visit the doctor, and when they do, other health concerns often take priority. Many men also refused the test even when its importance was explained. Additionally, men often prioritized other cancers, such as prostate cancer, over bowel cancer screening. Practical difficulties with the test kit also deterred participation, as some male patients found the procedure and instructions complex, particularly those with low health literacy or language barriers [9].

Respondents to the NBM Community Health and Wellbeing Survey, both males and females, reported that their main barrier to completing a bowel cancer screening test is lack of time (35%), fear or anxiety about the screening process (31%), and 19% do not think screening is necessary [2].

Barriers to Breast and Cervical Screening [9]

Cervical screening poses unique barriers, as many women prefer female practitioners, yet there is limited availability of female GPs, necessitating referrals. Many women also express a preference for female-oriented health services and complete privacy during screening. Cultural factors such as modesty, sensitivities around discussing sexual health, histories of trauma, experiences of genital mutilation, and dominant male perspectives in relationships further inhibit participation. Additionally, the test's perceived invasiveness and discomfort deter women from cervical

screening. Respondents to the NBM Community Health and Wellbeing Survey indicates the main barriers to attending cervical screening included the fear or anxiety of the screening process (39%), lack of time (25%), and cost (41%) [2].

For breast screening, challenges include delayed confirmation of attendance at breast screens until notifications arrive weeks later, limited transportation options to the BreastScreen van, and a lack of GP prompting. Limited awareness of the benefits of early detection through screening and misinformation about the test's safety and efficacy also impact participation. Individual priorities, lack of knowledge, and physical discomfort during mammograms reduce participation rates even further. Respondents to the NBM Community Health and Wellbeing Survey indicated the main barriers to attending breast screening included the lack of awareness of available services (47%), difficulty accessing services (25%), and fear or anxiety of the screening process (21%) [2].

Qualitative research highlighted additional barriers for CALD women in accessing these screenings. Financial limitations include lack of Medicare access due to residency status and high follow-up appointment costs. Low education and health literacy further complicate engagement, as do language barriers and concerns about interpreter identity. Fear and fatalism also deter participation, with beliefs that a cancer diagnosis is incurable, that treatment side effects outweigh the benefits, or that health outcomes are solely determined by fate. Previous personal or observed experiences with cancer screening also discourage participation [20].

Service providers in the NBM region have identified several needs to improve screening rates for cervical and breast cancer. These include establishing culturally appropriate referral networks with female providers, protocols for tracking screening results, and training to upskill practice nurses on breast examination, the new HPV screening process, and general cancer screening guidelines. Training in managing and sensitively supporting vulnerable and at-risk populations is also essential. Providers also emphasized the need for extended consultation times to accommodate language barriers, complex health conditions, and low awareness of cancer screening. Ongoing patient education on the HPV vaccination and new HPV screening program, which now targets the HPV virus instead of abnormal cells, is also crucial.

Access to cervical cancer screening is particularly limited among newly arrived refugee women, those who have experienced trauma, and other vulnerable groups, particularly in the Penrith local government area. Consultations with local stakeholders identified further challenges, including a shortage of trauma-informed care providers, lack of knowledge of screening programs among refugee women, and limited culturally sensitive providers, especially for Aboriginal and Torres Strait Islander women. Additional barriers include limited access to female cervical screening providers, low interpreter usage in primary care, and insufficient health promotion targeting women from CALD backgrounds. The limited availability of extended consultations restricts the comprehensive care often needed to address these women's health issues, emphasizing the need for more culturally sensitive, accessible screening options across the region.

CHRONIC AND PREVENTABLE CONDITIONS

Health Needs

Cardiovascular Disease

Cardiovascular disease (CVD) is a collective term for a variety of circulatory conditions. In 2023, cardiovascular diseases accounted for 12% of the total disease burden in Australia, representing 14% for males and 10% for females, and ranking as the fourth most significant disease group behind cancer, mental and substance use disorders, and musculoskeletal conditions [21].

In 2021, cardiovascular disease was the second leading cause of death for both males and females in NSW, with mortality rates of 145.5 per 100,000 for males and 94.3 per 100,000 for females, following malignant neoplasms [21]. The cardiovascular disease mortality rate in the NBM Region was 144 per 100,000 in 2020-21, higher than the NSW rate of 118.6 per 100,000. While the NSW rate has shown a steady decline from 169.9 per 100,000 between 2011 and 2021, the NBMPHN rate has followed a similar downward trend but consistently remained above the state average. Notably, the NBMPHN rate saw a slight increase from 140.9 to 144 per 100,000 between 2019-2020 and 2020-21 [22].

Coronary heart disease accounted for the highest rate of cardiovascular-related deaths, with an average of 264 deaths annually over the 2020-2021 period. Stroke contributed an average of 115 deaths per year, heart failure 49 deaths, and peripheral vascular disease 31.5 deaths annually during the same period [22].

In 2022-23, there were 7,084 hospitalisations due to cardiovascular disease in the NBM region, resulting in a hospitalisation rate of 1,537.2 per 100,000, slightly above the NSW rate of 1,522.7 per 100,000. Coronary heart disease had the highest rate of hospitalisation in the NBM region, at 492.6 per 100,000, followed by heart failure (162.1 per 100,000), stroke (116.3 per 100,000), and peripheral vascular disease (81.0 per 100,000) [23].

Behavioural risk factors such as tobacco smoking, physical inactivity, poor diet, and risky alcohol consumption contribute significantly to the development of CVD, leading to physiological risks like high blood pressure, elevated blood lipids, diabetes mellitus, and overweight or obesity. Psychological and social factors also play a role in the risk and progression of coronary heart disease, including low socio-economic status, lack of social support, work and family stress, depression or anxiety, and hostility. These factors can create barriers to treatment adherence and lifestyle improvement efforts in patients and broader populations [9].

With advances in paediatric treatment, patients with congenital heart disease are living longer, shifting the burden of disease to the adult population. Adult CHD patients often need assistance managing various health and lifestyle issues, including physical and dietary requirements, family planning, and physical limitations impacting work and welfare [9].

Chronic Kidney Disease [24, 25]

The total CKD hospitalisation rates in NBMPHN have steadily increased from 4,078.60 per 100,000 population in 2013/14 to 5,713.80 in 2021/22. This consistent upward trend shows a growing burden of CKD in the region. In comparison, the overall NSW rate also increased, from 5,342.60 per 100,000 in 2013/14 to 5,878.40 in 2021/22, with NBMPHN's rate consistently remaining slightly below the state average.

When looking specifically at dialysis-related hospitalisations, NBMPHN experienced a rise from 3,314.00 per 100,000 population in 2013/14 to 4,651.80 in 2021/22, with a more significant increase starting from 2018/19. Across NSW, the dialysis hospitalisation rate also rose, from 4,389.30 per 100,000 in 2013/14 to 4,579.40 in 2021/22. Throughout this period, the rate for dialysis hospitalisations in NBMPHN remained lower than the NSW state average.

For CKD hospitalisations excluding dialysis, NBMPHN saw an increase from 764.6 per 100,000 in 2013/14 to 1,062.00 in 2021/22, peaking at 1,137.70 in 2018/19. After this peak, there was a slight decline in the following years, with the rate decreasing further in 2021/22. In comparison, the NSW rate for CKD excluding dialysis rose from 953.3 per 100,000 in 2013/14 to 1,299.00 in 2021/22, with the state average remaining higher than NBMPHN's rate throughout the period.

In NSW, death rates from chronic kidney diseases (including chronic kidney failure and dialysis) are highest among individuals aged 75 years and over, at 666.9 per 100,000. Other groups with elevated death rates include Aboriginal people, with a rate of 113.9 per 100,000, those living in the most disadvantaged areas, at 66.6 per 100,000, and males, at 63.1 per 100,000.

In the Blue Mountains LGA, the CKD death rate started at 54.5 per 100,000 in 2001-2003 and peaked at 58.8 in 2004-2006. However, following this peak, the rate steadily declined, reaching 40.1 in 2018-2020. This indicates a significant downward trend in CKD deaths in the region over the years.
For the Hawkesbury LGA, the CKD death rate remained relatively stable between 2001 and 2012, around 59.7 per 100,000. Between 2013 and 2018, the rate increased slightly, peaking at 61.2 in 2016-2018. However, by 2018-2020, the rate dropped to 50.5, showing a marked improvement in recent years.

In Lithgow LGA, the CKD death rate was stable from 2001 to 2009, ranging between 58-59 per 100,000. It saw a slight decrease to 54.1 in 2013-2015, then rose again to 59.1 in 2016-2018. The most recent period, 2018-2020, saw a drop to 53.3, indicating some improvement in CKD outcomes.

Penrith LGA exhibited the highest rates of CKD deaths among the NBM regions. It started with a rate of 64.3 per 100,000 in 2001-2003, which increased to 71.3 in 2004-2006. The rate gradually decreased to 56.6 in 2010-2012 but spiked again to 69.3 in 2016-2018. By 2018-2020, the rate had dropped to 58.2, though it remains higher than in other LGAs.

Across NSW, the CKD death rate increased from 52.9 per 100,000 in 2001-2003 to a peak of 56.3 in 2007-2009. After a slight decrease to 52.8 in 2010-2012, the rate increased again to 56.0 in 2013-2015. However, the rate dropped to 50.8 in 2018-2020, indicating a general decline in CKD deaths across the state in recent years.

Diabetes

According to Primary Sense data, 27,398 active patients in the NBM region have a diagnosis of diabetes. Of these, 49.5% are male and 50.5% are female. The majority (85.88%) have Type 2 diabetes, followed by 9.68% with gestational diabetes and 8.04% with Type 1 diabetes. Additionally, 6.4% of people with diabetes in the region identify as Aboriginal and/or Torres Strait Islander [26].

The National Diabetes Services Scheme (NDSS) is a voluntary program that individuals with a diabetes diagnosis can choose to enrol in. Within the Nepean Blue Mountains region, 5.29% of the population is registered with the NDSS. Of these registrations, 0.45% are for Type 1 diabetes, while 4.65% are for Type 2 diabetes. NDSS registration rates are slightly higher among males (5.40%) compared to females (5.18%) [27].

Within the NBM region, NDSS registration rates vary significantly by LGA. Lithgow has the highest rate, with 1,522 registered individuals, representing 7.19% of its population. This is notably above both the NSW average of 5.31% and the rates seen in other LGAs within the NBM region. Penrith, with the largest absolute number of registrations at 14,798, has a registration rate of 6.35%, also above the state average [27].

Hawkesbury follows with a registration rate of 5.23% (3,661 individuals), slightly below the state average, while the Blue Mountains has the lowest rate in the region, with 3,927 registrations, equating to 4.81% of its population. The variation in registration rates may reflect demographic and socio-economic differences across the LGAs, with areas like Lithgow and Penrith potentially experiencing higher rates of diabetes prevalence or greater engagement with NDSS services than the Blue Mountains and Hawkesbury [27].

Diabetes-related hospitalisation rates are lower in the NBM region compared to NSW, with 136.9 per 100,000 in the NBM region versus 141.2 per 100,000 state-wide. The NBM region has seen a steady decrease in diabetes-related hospitalisations since 2018/2019, when the rate was 158.4 per 100,000, and has consistently remained below the NSW rate since 2013/2014 [28].

However, diabetes-related death rates in the NBM region have been higher than the NSW average since 2013. In 2021, there were 145 diabetes-related deaths, equating to 32.1 per 100,000, compared to the NSW rate of 28.4 per 100,000 [28]. During the two-year period of 2020/2021 to 2021/2022, the NBM region recorded an average of 81 diabetes-related amputations per year, with a rate of 18.0 per 100,000, which is higher than the NSW rate of 16.5 per 100,000 [29].

Proactive diabetes care is more frequent among those first diagnosed by GPs, with 50% prescribed antidiabetic medications, along with a higher likelihood of having GP management plans, regular health reviews, and recorded measures of blood pressure, cholesterol, and HbA1c, compared to just 27% receiving medication following a hospital diagnosis. Over a two-year period, individuals diagnosed in GP settings generally accessed fewer hospital services, averaging 16 GP visits, 2 emergency department visits, 2 hospital admissions, and 8 outpatient services, as opposed to those diagnosed in hospitals, who averaged fewer GP visits (10) but more hospital admissions (four) and outpatient services (12). Additionally, mortality was lower for those initially diagnosed by a GP, with a 4% mortality rate compared to 6% for those diagnosed in hospital settings [30].

Respiratory Diseases

Asthma is a significant health problem in Australia with one of the highest rates of prevalence in the world. Prevalence of current asthma in the NBM region for the 2–15-year-old group in 2018-19 (15.7% of the population age group) was the second highest among the NSW PHN regions and higher than the NSW state average (12.9%) [9]. For people 16 years and over, the prevalence of current asthma was 18.9% in 2019 (up from 15.4% in 2018) and was much higher than the NSW state average (11.5%).

National data indicates the prevalence of COPD is approximately 4.8% among adults aged 45 years and older, with prevalence rising with age and was higher in the lower socio-economic areas [9]. Primary Sense data indicates there are 8649 (2.2%) patients in the region with a coded COPD diagnosis [31].

Obesity

BMI data from General Practices in October 2024 reveals differences between Indigenous and non-Indigenous populations, as well as disparities when compared to the NSW state averages for 2023. For non-Indigenous males aged 15 years and older, 19.1% are within a healthy BMI range, 44.8% are obese, 35.1% are overweight, and 1.1% are underweight. In contrast, Indigenous males show lower rates of healthy BMI at 18.2%, higher obesity rates at 51.6%, and lower overweight rates at 27.6%. The percentage of Indigenous males who are underweight is 2.6%, more than double that of their non-Indigenous counterparts [31].

Among non-Indigenous females, 24.2% are classified as having a healthy BMI, with 44.4% being obese, 29.3% overweight, and 2.2% underweight. Indigenous females have a slightly lower percentage of healthy BMI at 20.3%, a higher obesity rate at 54.0%, and a lower rate of overweight individuals at 23.0%. The percentage of underweight Indigenous females is higher at 2.8% [31].

Comparing these figures with the NSW state averages for 2023, both Indigenous and non-Indigenous populations in the NBM region have higher obesity rates. NSW reports 24.5% of individuals as obese, which is significantly lower than the 44.8% of non-Indigenous males and 51.6% of Indigenous males in the NBM region. Similarly, non-Indigenous and Indigenous females in the region have higher obesity rates (44.4% and 54.0%, respectively) compared to the NSW average [32].

The proportion of individuals within a healthy BMI range is also lower in the NBM region compared to NSW. The NSW average for a healthy BMI is 38.1%, whereas non-Indigenous males and females in the NBM region show 19.1% and 24.2%, respectively. For Indigenous males and females, these rates are even lower at 18.2% and 20.3% [32]. It is important to note that only 22.2% of active patients have a BMI recorded in the General Practice clinical record [31].

37% of respondents to the NBM Community Health and Wellbeing Survey report that they exercise on a weekly basis, whilst 36% report they exercise daily and 24% report never or only occasionally exercising. 65% of respondents describe their diet as health or very healthy, whilst a small proportion describe their diet as unhealthy or very unhealthy (5%) [2].

The prevalence of obesity and severe obesity in the NBM population is projected to increase. If obesity rates remain steady, the NBM population by 2036 will include [33]:

- 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.

Menstrual Health [34]

A hysterectomy is a surgical procedure to remove the uterus (womb) and can be performed through abdominal, vaginal, or laparoscopic (keyhole) surgery. In some cases, the ovaries and fallopian tubes are also removed during the procedure. Most hysterectomies are performed for non-cancerous gynaecological conditions, with heavy menstrual bleeding being one of the most common reasons, followed by genital prolapse and fibroids.

Despite recommendations, hysterectomy rates in Australia are higher than in comparable countries within the Organisation for Economic Co-operation and Development (OECD). In 2019, Australia had 215 hysterectomies per 100,000 women, compared to 126 in New Zealand and 132 in the United Kingdom. Comparisons with more recent data are complicated by the varying impacts of COVID-19 on elective surgeries globally. Between 2014–15 and 2021–22, hysterectomy rates in Australia decreased by 20% nationwide and across all states and territories. However, the hysterectomy rate for Aboriginal and Torres Strait Islander women was about 9% higher than that for other Australian women in 2021–22.

In 2021-22, hysterectomy rates across the NBM region varied significantly. Richmond-Windsor had the highest rate, with 365 per 100,000. Penrith followed with a rate of 268 per 100,000, closely matched by St Marys at 262 per 100,000. Lithgow-Mudgee recorded a slightly lower rate of 254 per 100,000, while the Blue Mountains had the lowest rate in the region at 223 per 100,000. Data for the Hawkesbury region was unavailable due to suppression.

Endometrial ablation is a procedure that uses heat to destroy the inner lining (endometrium) of the uterus, while leaving the uterus intact. The procedure typically requires a light general anaesthetic and is performed in a day-stay surgery unit or hospital. Endometrial ablation is primarily used to treat heavy menstrual bleeding, a condition that causes excessive blood loss during menstruation and affects around one in four women of reproductive age. Heavy menstrual bleeding can interfere with a woman's physical, emotional, social, and material quality of life, and is often accompanied by other symptoms such as pain. It is one of the most common reasons for gynaecological consultations with general practitioners. Endometrial ablation rates increased nationally by 10% between 2013–16 and 2019–22.

Endometrial ablation rates in the NBM region also showed variation across the SA3 areas. Lithgow-Mudgee had the highest rate at 190 per 100,000, followed by Hawkesbury at 162 per 100,000. Penrith reported a rate of 122 per 100,000, while the Blue Mountains recorded a significantly lower rate of 76 per 100,000. St Marys had the lowest rate in the region, at 63 per 100,000.

Both hysterectomy and endometrial ablation rates were higher in regional areas than in major cities or remote areas. For both procedures, around 60% of hospitalisations were for privately funded patients.

47% of women that responded to the NBM Community Health and Wellbeing Survey reported that they have been diagnosed with Heavy Period Bleeding, Endometriosis, or Polycystic Ovary Syndrome. Of these 84% indicated that their condition moderately or significantly impacts their daily life. 79% have been referred to another health care professional, with 55% reporting that they waited up to 6 months for treatment [2].

Disability [35]

A profound or severe disability means that individuals sometimes or always need help with daily activities such as self-care, mobility, or communication. In 2021, 21,824 people in the NBM region, or 5.9% of the population, had a profound or severe disability. Of these, 11,755 people (3.8%) were aged 0-64, while 10,059 people (16.8%) over the age of 65 had a profound or severe disability. 11.8% of the population provided unpaid assistance to a person with a disability. Within the NBM region, Lithgow had the highest proportion of people with disabilities (6.6%), followed by the Blue Mountains (5.5%).

People with disabilities are significantly affected by disasters, facing a two-to-four-times higher risk of death, increased likelihood of injury and property loss, and greater challenges with evacuation and sheltering. They also required more extensive health and social services both during and after a disaster [36].

Compared to people without disabilities, those with a disability report poorer general health, higher levels of psychological distress, insufficient physical activity, higher rates of smoking and alcohol consumption, poorer eating habits, and are more likely to be overweight or obese. They also face significant financial and physical barriers to accessing health services and experience higher rates of discrimination [37].

Childhood Immunisations [38]

In the NBM region, childhood immunisation rates fall short of the national target of 95%, highlighting a gap in early childhood immunisation coverage. As of June 2024, the immunisation rate for all 1-year-olds is 93.29%, and for 2-year-olds is 91.13%, both below the national target. However, coverage improves among 5-year-olds, reaching 94.93%, just under the target, showing better immunisation uptake in older age groups.

For Aboriginal and Torres Strait Islander children, the 1-year-old immunisation rate is slightly higher at 93.97%, though still below the national target. The 2-year-old coverage for this group has declined to 89.41% from 94.88% in 2023, falling significantly short of the target. The 5-year-old coverage rate for Aboriginal and Torres Strait Islander children is strong at 96.79%, exceeding the national target and indicating an improvement as children age.

Immunisation rates vary by LGA within the NBM region, with the Blue Mountains LGA consistently reporting lower rates across age groups in past years. However, in 2024, the Blue Mountains outperformed other SA3 areas within the NBM region. The immunisation rates in the Blue Mountains are 93.02% for 1-year-olds, 90.23% for 2-year-olds, and 93.31% for 5-year-olds—all just below the national target of 95%.

Hawkesbury LGA also shows lower coverage rates, particularly for 2-year-olds at 89.68%, with 1-year-olds at 93.73% and 5-year-olds at 95.10%. Lithgow-Mudgee LGA achieves the highest immunisation rates in the NBM region, with 94.26% for 1-year-olds, 93.75% for 2-year-olds, and 96.19% for 5-year-olds, meeting or exceeding the target for 5-year-olds.

Penrith LGA performs well compared to other areas, with rates of 93.56% for 1-year-olds, 92.67% for 2-year-olds, and 96.02% for 5-year-olds, meeting the target for 5-year-olds. Richmond-Windsor LGA shows rates of 93.81% for 1-year-olds, 88.43% for 2-year-olds (the lowest in the NBM region for this age group), and 95.93% for 5-year-olds, meeting the target for 5-year-olds. St Marys LGA has the lowest rates within the NBM region, with 91.39% for 1-year-olds, 89.39% for 2-year-olds, and 92.22% for 5-year-olds, all below the target.

Influenza and Pneumonia

In the financial year 2020-21, the age-adjusted rate for influenza and pneumonia hospitalisations in the NBM region dropped to 210.7 per 100,000, a significant decrease from 363.4 per 100,000 in 2019-20. This trend mirrors the broader pattern observed across NSW, where the rate fell from 351.5 per 100,000 in 2019-20 to 206.3 per 100,000 in 2020-21. The decline aligns with a large reduction in influenza notifications during the COVID-19 pandemic [39].

Hospitalisation rates for children aged 0-4 years also saw a decline in the NBM region. In 2019-20, the rate was 703.3 per 100,000, which fell to 444.6 per 100,000 in 2020-21. Similarly, in NSW, the hospitalisation rate for this age group decreased from 587.1 per 100,000 in 2019-20 to 397.2 per 100,000 in 2020-21. Despite the overall decrease, children aged 0-4 years continued to experience relatively high hospitalisation rates compared to other age groups [39].

For individuals aged 65 and over, the NBM region recorded a hospitalisation rate of 927.2 per 100,000 in 2020-21, a substantial decrease from 1,508.5 per 100,000 in 2019-20. Across NSW, the rate for this age group dropped from 1,458.7 per 100,000 in 2019-20 to 895.5 per 100,000 in 2020-21. This age group consistently contributes most of the influenza and pneumonia hospitalisations [39].

There is a general decline in antimicrobial prescription rates across all SA3 regions from 2015 to 2023. This trend aligns with national and global efforts to reduce unnecessary antimicrobial usage. Lithgow – Mudgee has seen a significant reduction in antimicrobial prescriptions, with a notable decrease in 2020 (726 per 1,000 people, down from 963 in 2019). Despite some fluctuations, the rate stabilised in 2023 at 779 per 1,000 people. Prescription rates have consistently decreased in the Hawkesbury from 2015, with an especially sharp decline in 2021, reaching 342 per 1,000 people. In 2023, the rate was 398 per 1,000 people, showing only minor changes from 2022 [40].

Like Lithgow-Mudgee, the Blue Mountains saw a marked drop in 2020 (775 per 1,000 people) and has maintained lower rates, with a slight increase in 2023 to 813 per 1,000 people. While showing an overall decline, Penrith had a notable drop in 2020 to 1,023 per 1,000 people. By 2023, the rate was relatively stable at 1,079 per 1,000 people. St Marys exhibited one of the highest prescription rates throughout the period. After a decrease to 1,212 per 1,000 people in 2020, the rate rebounded slightly and was at 1,263 per 1,000 people in 2023 [40].

Most regions experienced their largest percentage decreases in 2020, likely due to changes in healthcare access and behaviour during the COVID-19 pandemic. Following 2021, many regions saw slight increases, indicating a possible rebound in prescription rates as health services resumed normal operations. The highest rates are observed in older age groups, with those aged 75 and over having the highest rate at 2,676 per 1,000 people. Children aged 0–4 also show high prescription rates at 1,202 per 1,000, which may be attributed to the higher incidence of infections in young children [40].

Potentially Preventable Hospitalisations [41]

Analysis of 2021-22 data indicates that overall, NBM region had slightly lower rates of total PPHs (1690.4 per 100,000 people) compared to other NSW PHNs (1718.8 per 100,000 people), however PPH rates for Acute Conditions in NBM were higher than the reminder of NSW PHNs at 959.3 per 100,000 vs 921.3 per 100,000 respectively.

The highest rates of PPHs are observed in dental conditions (252.8 per 100,000), cellulitis (239.7 per 100,000), and urinary tract infections (UTIs), including pyelonephritis (193.7 per 100,000). Congestive cardiac failure (127.6 per 100,000) and chronic obstructive pulmonary disease (COPD) (125.1 per 100,000) also show significant rates, suggesting a need for improved management of chronic respiratory and cardiovascular conditions in the community.

In 2021-22, PPH rates for Aboriginal and Torres Strait Islander persons in NSW was 2.5 times higher than non-Aboriginal and Torres Strait Islander persons (4047.4 per 100,000 vs 1620.0 per 100,000). For vaccine-preventable conditions, the rate for Aboriginal persons is 333 per 100,000 compared to 126.3 per 100,000 for non-Aboriginal persons. Hospitalisation rates for chronic conditions show a rate of 1,934.1 per 100,000 for Aboriginal persons, while non-Aboriginal persons have a rate of 638.5 per 100,000. For acute conditions, the rate is 1,847.5 per 100,000 for Aboriginal persons, compared to 868.1 per 100,000 for non-Aboriginal persons.

A follow-up visit to the GP after an unplanned hospital stay is evidenced to significantly lower the chance of readmission, both immediately and over time. Seeing a GP within two days of discharge led to a 32% reduction in readmissions within the first week. A visit within the first week after discharge was associated with a 7% decrease in readmissions within 28 days. Additionally, a GP visit within the first four weeks after discharge resulted in a 13% reduction in readmissions over the following 1-3 months [42].

Service Needs

MBS Utilisation [9]

The use of chronic disease planning items for individuals with asthma in the NBM region is currently underutilised. A significant proportion of adults with asthma in the region are not accessing these services provided by General Practitioners. According to data from local general practices, within the previous 15 months, only 12.99% of patients aged 16 years and older who were diagnosed with asthma had a GP Management Plan. Additionally, 10.76% of these patients had team care arrangements in place, and only 6.73% had their GP Management Plan or team care arrangements reviewed. This data indicates that many asthma patients in the NBM region may be eligible for, but are not accessing, available MBS chronic disease planning items designed to support the management of their condition through coordinated care by their general practitioner.

The uptake of the Aboriginal and Torres Strait Islander Health Assessment MBS item is also relatively low in the region. In 2019-20, the proportion of Aboriginal and Torres Strait Islander individuals in the NBM region who undertook a health assessment was 17.8%, which is lower than both the national average of 23.5% and the NSW average of 22.8%. MBS data for Aboriginal and Torres Strait Islander-specific health checks, including face-to-face and telehealth services for 2021-22, showed that the rate of service use was 23.5% in Australia, 22.8% in New South Wales, and 17.8% in the NBM region.

There is also a low rate of Aboriginal and Torres Strait Islander-specific follow-up services within 12 months of a health check in the NBM region. Only 27.6% of Aboriginal and Torres Strait Islander individuals in the region received follow-up care, making it the third-lowest rate among PHNs in NSW and the sixth lowest in Australia. MBS data for follow-up items (including items 10987, 81300 to 81360, 93200, 93202, 93048, and 93061) for 2020-21 revealed that in Australia, 46.1% of patients who had health checks received follow-up care, while the rate in New South Wales was 38.0%, and in the NBM area, it was 27.6%.

Cardiovascular Risk Assessments [9]

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 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 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 suggests there is widespread under-treatment of CVD risk and poor routine incorporation in routine general practice [43]. This is reflected in NBM general practice data, which indicates that 41.17% of patients aged 45-74 years and 43.69% of Aboriginal and Torres Strait Islander and Torres Strait Islander patients aged 35-74 years had not had their CVD risk measured or recorded within the previous 2-years.

COPD Services [9]

Previous consultations with service providers in the NBM region have shown that patients with COPD in the Hawkesbury LGA have very limited options for avoiding hospital visits during acute exacerbations. The safest option for these patients remains presenting to the local Emergency Department.

The issues identified include a lack of preventative intervention services for COPD, and challenges in collaboration between acute and primary health settings. Patients face difficulties accessing services due to the distance and absence of public transport connections to other facilities, such as Nepean Hospital in Penrith. COPD rehabilitation is often perceived as a hospital-based rather than a health promotion or prevention service.

There is very limited availability of public allied health services for patients with chronic and complex conditions in the Hawkesbury, and the Hawkesbury Hospital team struggles to discharge COPD patients early due to insufficient post-discharge support. General practitioners in the area

report an inability to refer COPD patients to accessible education support programs. Furthermore, there is a lack of services in the Lithgow region, with no access to programs such as CALM or LIA.

Across the NBM region, there is a need to improve access to spirometry services and enhance the capacity of primary care nurses to use and interpret spirometry effectively. Although up to 50% of general practices in the Hawkesbury indicate they offer spirometry, others face time and capability constraints in conducting these assessments. It is also important to note that many practices have stopped offering spirometry due to COVID-19 infection control measures. Spirometry services in the Hawkesbury are limited, with availability mainly through Nepean Hospital Respiratory Services, which presents significant travel challenges for patients, or through private respiratory physicians, which involve waiting times and associated costs.

Care coordination services for COPD patients are also limited, leading to a reliance on emergency departments for aspects of care that could otherwise be managed through better service connections and support for self-management.

Chronic Pain

A 2019 survey conducted by local medical students highlighted several discrepancies between the management of nonspecific low back pain (NSLBP) in general practices in Greater Western Sydney and the recommended guidelines [44]. The survey revealed low overall adherence to guidelines concerning the use of imaging, pharmacological, and non-pharmacological treatments. Most participants (80%) reported using imaging as part of their diagnostic process, which is not recommended by guidelines. More than half (53.3%) had previously prescribed opioids as a first-line treatment, contrary to guideline recommendations. Additionally, almost half of the respondents (46.7%) recommended bed rest, despite guidelines strongly advising against this approach. One third (33.3%) of participants admitted to not using any guidelines to inform their management of NSLBP. The survey also identified several barriers to effective management, including the cost of allied health services, the presence of comorbidities, and patient beliefs or expectations that immediate treatment is necessary for back pain management.

Obesity Management [9]

The HealthPathways Obesity Clinical Working Group has identified several service issues and needs related to the effective management of obese patients across primary and tertiary care settings in the Nepean Blue Mountains region. Training for GPs and Practice Nurses on strategies for managing obesity is necessary, particularly in education and upskilling regarding new non-surgical treatment options, including pharmacological interventions. Education is also required on the use of management plans for clinical obesity. Access to publicly funded dietitians and allied health professionals is limited, with only 2.5 FTE funded dietitian positions available for the entire region. Additionally, private services that offer education, exercise, or healthy eating advice are often not known to GPs.

The Nepean Blue Mountains Family Metabolic Service (FMHS) at Nepean Hospital faces long waiting times, ranging from three months to four years depending on the medical category. GPs are also hindered by the lack of electronic referral forms for the FMHS, as they are often time-poor and reluctant to complete non-electronic, clinic-specific referrals. The existing inclusion criteria for the FMHS are complicated, and access to these services is limited to business hours, making it difficult for employed patients to attend, although virtual attendance options are available.

There is a need for a multidisciplinary approach to obesity management in the community and for upskilling allied health professionals, such as physiotherapists, exercise physiologists, dietitians, and psychologists, with current evidence-based information. There is also a need for changes in the MBS to allow for longer GP consultations and greater access to allied health sessions to support a multidisciplinary approach.

A virtual care program may be necessary to complement GP care, particularly in regions where GP appointments are difficult to access or when patients have low mobility. Engagement with social services and disability support is also recommended for all patients with severe and complicated obesity. Furthermore, there is a need for improved education and access to mental health support, effective obesity medications, and public bariatric surgery options.

Services and Support for Persons with a Disability

2018 survey findings demonstrate a high level of unmet need for GP care from this cohort. Of those surveyed who had a disability in Australia, 36% needed to see a GP at least once in last 12 months but did not due to either cost or other reasons (including decided not to seek care, too busy or no time due to work, personal, family responsibilities), waiting time too long or not available at time required) [11].

Services and Support for the Homeless Population [45]

Homeless individuals in the Nepean Blue Mountains region often face significant stigma and shame when attempting to access healthcare services, including embarrassment due to their appearance, lack of access to adequate personal hygiene facilities, or their clothing, all of which can be visibly affected by their circumstances. This shame is heightened when interacting with healthcare providers, particularly in general practice settings where some staff members may display a lack of understanding or compassion, resulting in negative attitudes or discriminatory behaviour.

Due to these barriers in primary healthcare settings, homeless individuals often resort to using emergency departments for medical needs. The reliance on emergency services is partly driven by the difficulty in finding general practitioners who bulk bill or offer affordable consultations. Many homeless individuals lack access to transportation or digital resources needed to book appointments, making the emergency department a more accessible option.

Access to hygiene and sanitation facilities remains a critical issue for the homeless population. Without consistent access to basic facilities like showers and restrooms, homeless individuals are at increased risk of developing skin infections and other dermatological conditions. Poor hygiene also has broader implications, contributing to negative health outcomes such as worsening chronic illnesses and further reducing the quality of life for those affected.

Cognitive and neurological impairments are prevalent among the homeless population, often stemming from past trauma or neurological conditions. These impairments can severely impact an individual's ability to navigate complex service systems, making it challenging for them to seek and maintain access to necessary healthcare and social support. Cognitive issues may hinder decision-making, problem-solving, and communication, which are essential for engaging with health services.

DOMESTIC FAMILY AND SEXUAL VIOLENCE, INCLUDING CHILD SEXUAL ABUSE

Health Needs

Rates of Domestic, Family, and Sexual Violence

Domestic family and sexual violence does not discriminate but does affect some groups more than others, the following groups are at higher risk of experiencing domestic and sexual violence in their lifetime [46]:
Women
People living with disability.
Aboriginal and Torres Strait Islander Australians
LGBTIQ+ persons
CALD communities
Those living in rural and remote communities or in lower socioeconomic areas.
According to the ABS, an estimated 1.1 million women in New South Wales, which accounts for 37% of the female population, have experienced violence (either physical or sexual) since the age of 15. This includes 21% (or 640,200 women) who have experienced sexual violence and 29% (or 911,800 women) who have experienced physical violence. The two-year prevalence rate for both sexual and physical violence remained relatively stable between 2016 and 2021-22 [47].

Additionally, around 794,100 women in New South Wales, representing 25% of the female population, have experienced violence, emotional abuse, or economic abuse by a cohabiting partner since the age of 15. This group includes 15% (or 458,700 women) who experienced partner violence (either physical or sexual), 23% (or 706,800 women) who experienced emotional abuse by a partner, and 17% (or 533,200 women) who experienced economic abuse by a partner. Between 2016 and 2021-22, the two-year prevalence rates for cohabiting partner violence and emotional abuse remained stable [47].

It is estimated that 524,200 women in New South Wales, or 17%, experienced physical or sexual abuse by an adult before the age of 15. This includes 11% (343,300 women) who experienced sexual abuse and 9.1% (285,500 women) who experienced physical abuse. Furthermore, 486,700 women in New South Wales, or 16%, reported witnessing violence towards a parent by a partner before the age of 15. Of these, 14% (428,700 women) witnessed violence towards their mother, while 4.8% (150,500 women) witnessed violence towards their father [47].

Nationally, it is estimated that 2.7 million Australians aged 18 years and over (14%) have experienced stalking since the age of 15. This includes 20% of women (2.0 million) and 6.8% of men (653,400). The data indicates that women are significantly more likely than men to experience stalking [47].
The NSW Recorded Crime Statistics from July 2023 to June 2024 indicates the Blue Mountains recorded 215 domestic violence-related assault incidents, with a rate of 275.9 per 100,000 population. This places the area at a rank of 99 compared to other LGAs in NSW, indicating a relatively lower incidence of domestic violence-related assaults in comparison to other regions in the state. The Hawkesbury LGA reported 316 incidents, resulting in a rate of 465.7 per 100,000 population. With a rank of 66, this LGA has a higher rate than the Blue Mountains but remains

below the NSW average of 457.2 per 100,000. The rank suggests a moderate level of domestic violence-related incidents in this area [48].
Lithgow had 192 domestic violence-related assault incidents, translating to a rate of 922.5 per 100,000 population. This is the highest rate among the LGAs in the region and is significantly above the NSW average. Lithgow ranks 16th in the state, highlighting it as an area with a high prevalence of domestic violence-related assaults. Penrith recorded the highest number of incidents in the region, with 1,277 domestic violence-related assaults. The rate stands at 578.1 per 100,000 population, which is also above the state average. Penrith is ranked 51st, indicating a relatively high occurrence of such incidents within this LGA [48].
The overall rate of domestic AVOs in NSW has been steadily increasing from 483.5 per 100,000 population in 2016-2017 to 679.5 per 100,000 in 2023-2024. This indicates a rising trend in the number of domestic AVOs over the eight-year period [48].

The rate of domestic AVOs in the Blue Mountains has fluctuated, with an increase from 341.4 per 100,000 in 2016-2017 to a peak of 398.3 in 2021-2022. However, it slightly decreased to 375.2 in 2022-2023 before rising again to 388.2 in 2023-2024. Despite some fluctuations, the overall trend remains below the state average. The Hawkesbury LGA shows a consistent increase in the rate of domestic AVOs, with a notable rise from 435.2 per 100,000 in 2016-2017 to a high of 775.9 in 2022-2023. Although there was a decrease to 683.1 in 2023-2024, the overall trend indicates a significant escalation in the rate of domestic violence AVOs over the years. This LGA has consistently seen rates that are above the NSW average in recent years [48].

Lithgow exhibits the highest rates of domestic AVOs in the region. Starting at 698.0 per 100,000 in 2016-2017, the rate peaked at 1,105.6 in 2022-2023 before slightly decreasing to 1,078.8 in 2023-2024. Lithgow's rate consistently surpasses the state average, indicating a particularly high prevalence of domestic violence incidents leading to AVOs in this LGA. Penrith has shown a steady rise in the rate of domestic AVOs, increasing from 578.9 per 100,000 in 2016-2017 to 784.9 in 2023-2024. This rate is higher than the state average, particularly in recent years [48].

The overall rate of breaches for domestic AVOs in NSW has consistently increased, from 151.8 per 100,000 in 2016-2017 to 297.4 per 100,000 in 2023-2024. This indicates a steady upward trend over the eight-year period, suggesting a growing issue with compliance to AVOs across the state [48].

The rate of domestic AVO breaches in the Blue Mountains has fluctuated. It started at 82.1 per 100,000 in 2016-2017 and increased significantly to 177.5 per 100,000 in 2021-2022. However, the rate dropped to 103.9 in 2022-2023 before rising again to 142.9 in 2023-2024. Despite these fluctuations, the rate remains below the NSW average. In the Hawkesbury LGA, the rate of breaches has shown variability but an overall increase. The rate was 146.8 per 100,000 in 2016-2017, reaching a peak of 295.2 per 100,000 in 2022-2023. The rate then decreased to 207.5 per 100,000 in 2023-2024. Although the rate remains below the NSW average, the significant increase in recent years indicates rising non-compliance with AVOs within this LGA [48].

Lithgow shows the highest and most volatile rates of AVO breaches among the LGAs in the region. It increased from 199.4 per 100,000 in 2016-2017 to a peak of 585.0 per 100,000 in 2022-2023 before slightly decreasing to 526.0 in 2023-2024. The rate consistently surpasses the NSW average, highlighting a serious issue with AVO compliance in this area and indicating that breaches are

particularly prevalent. Penrith has experienced a consistent upward trend in the rate of domestic AVO breaches, starting at 183.1 per 100,000 in 2016-2017 and reaching 343.6 per 100,000 in 2023-2024. The rate is consistently above the NSW average in the later years, showing a growing problem with AVO non-compliance in this LGA [48].

The new offence of coercive control in New South Wales, under section 54D of the *Crimes Act 1900*, was enacted on 1 July 2024. This offence specifically targets abusive behaviours aimed at a current or former intimate partner with the intent to coerce or control them. It covers repeated patterns of both physical and non-physical abuse intended to harm, scare, intimidate, threaten, or exert control over the victim. The legislation applies to any abusive behaviour occurring from 1 July 2024 onwards [48].

Coercive control incidents can involve various types of controlling behaviours. The most recorded behaviours by NSW Police since the law's commencement include harassment, monitoring or tracking of the victim's movements, shaming, degrading or humiliating conduct, threats or intimidation, financial abuse, and actions that lead to social isolation or cultural abuse [48].

Across NSW, the state average rate of sexual assault incidents has increased over the 10-year period (July 2014 to June 2024), starting at 63.6 per 100,000 in 2014-2015 and reaching 122.9 per 100,000 in 2023-2024. The rate shows a steady rise, particularly from 81.2 in 2019-2020 to 122.9 in the latest period, reflecting an overall increase in sexual assault incidents across the state [49].

The sexual assault rate in the Blue Mountains fluctuated over the years, starting at 76.1 per 100,000 in 2014-2015 and peaking at 125.8 per 100,000 in 2023-2024. The rate experienced significant increases, notably from 69.5 in 2018-2019 to 114.9 in 2017-2018, and later a consistent rise from 104.0 in 2021-2022 to 125.8 in the most recent period. The LGA ranks 72nd in NSW, indicating a moderate prevalence of sexual assault incidents relative to other areas. In Hawkesbury, the rate increased significantly over the 10-year period, starting at 72.8 per 100,000 in 2014-2015 and reaching 159.1 per 100,000 in 2023-2024. The most notable increase occurred between 2021-2022 and 2022-2023, where the rate jumped from 89.9 to 131.1. By 2023-2024, the rate had risen further to 159.1, placing the LGA at 50th in the state [49].

Lithgow shows a more volatile pattern, with its rate starting at 65.4 per 100,000 in 2014-2015 and reaching 182.6 per 100,000 in 2023-2024. The rate peaked significantly in 2019-2020 at 185.5 before fluctuating, but overall remained high. Lithgow ranks 40th in NSW, highlighting a consistently high rate of sexual assault incidents relative to other LGAs, and showing that it has one of the highest prevalence rates in the region. The rate in Penrith has generally trended upwards over the period, beginning at 91.6 per 100,000 in 2014-2015 and increasing to 138.5 per 100,000 in 2023-2024. The increase was gradual, with significant rises in recent years, such as from 122.2 in 2021-2022 to 138.5 in 2023-2024. Penrith is ranked 66th in the state [49].

It is important to note that many of those impacted by DFSV do not report the offence to the police or other legal services so the figures recorded by BOSCAR may underrepresent the full extent of DFSV incidents. Only 7% of sexual assaults reported to the NSW Police end up in a guilty verdict in court. Only 15% of sexual assaults reported to NSW Police result in charges being laid, and of those that do not go to court, fewer than half are proven.

Child Sexual Abuse

The 2023 Australian Child Maltreatment Study provided the first comprehensive look at the prevalence of child abuse and neglect in Australia, covering five types of maltreatment: physical abuse, sexual abuse, emotional abuse, neglect, and exposure to domestic violence. The study revealed that four out of these five forms of abuse are widespread, often starting from early childhood, with lasting impacts that continue into adulthood, even in individuals over 45.

The report highlights that Australians who have experienced child maltreatment are significantly more likely to face a range of challenges, including mental health disorders, engagement in health-risk behaviours, and higher usage of health services. Child maltreatment is linked to a marked increase in health risk behaviours, with affected individuals being:

- 6.2 times more likely to have cannabis dependency.
- 4.5 times more likely to have attempted suicide in the past year.
- 3.9 times more likely to have self-harmed in the past year.
- 1.8 times more likely to be current smokers.
- 1.3 times more likely to binge drink at least once a week.
- 1.2 times more likely to have obesity.

In terms of child sexual abuse, the study found that over one in three girls and one in five boys experience this form of abuse. Such abuse is rarely an isolated incident; 78% of those affected experience it multiple times, and 42% report more than six instances [50].

In 2023, there were 3,074 reported cases of child sexual assault in New South Wales where victims disclosed the abuse while still children. Among these victims, 81% were female, and 66% were aged between 11 to 15 years at the time of the incident. Family members accounted for 34% of perpetrators, while 21% were current or former boyfriends or girlfriends. Additionally, 84% of these incidents took place in residential settings. Regarding victim-offender relationships (excluding cases with missing data), 38.4% of perpetrators were known to the victim but not family, 34.4% were family members, 20.6% were intimate partners, 3.3% were authority figures, and another 3.3% were unknown to the victim [49].

For cases where victims reported the assault as adults, there were 2,392 cases of historical child sexual abuse disclosed in New South Wales in 2023. In this group, 67% of victims were female, and 48% were aged 10 or younger when the abuse occurred. Family members made up 35% of the perpetrators, and 70% of incidents occurred at a residential address. Among victim-offender relationship types (again excluding missing data), 35.2% were other known persons, 34.9% were family, 17.9% were persons in authority (such as caregivers), 7.6% were intimate partners, and 4.4% were unknown to the victim [49].

Impact of COVID-19 on Domestic Violence Rates

Police record data shows there is no evidence to suggest an increase in criminal Domestic Violence related incidents directly attributable to the first wave of COVID-19 social isolation restrictions including stay-at-home orders, however there is evidence to suggest an increase in non-criminal domestic disturbances requiring police assistance during that time [51].

Australia's National Research Organisation for Women's Safety (ANROWS) suggests the prevalence and complexity of domestic violence has in fact increased since the COVID-19 pandemic, particularly during the second wave. ANROWS recently launched report highlights the increase in intimate partner violence (IPV) against women and the barriers to seeking help during the COVID-19 pandemic. The report also highlighted that the most common relationship-level change reported by women who experienced the onset and/or escalation of IPV was family stress, followed by spending more time together, relationship conflict and the level of social contact [52].

Domestic violence situations which have arisen during and potentially because of the pandemic situation, will impact the health system well into the future post pandemic, as not all issues will resolve once the pandemic subsides, leaving providers with an increased number of domestic violence victims to support through their long-term recovery [52].

Impacts of Natural Disasters on Domestic Violence [53]

Evidence from the Black Saturday bushfires and other disasters shows that domestic violence incidents rise after such events. Natural disasters create high-stress environments, where individuals face trauma from loss, displacement, and the overwhelming challenges of rebuilding their lives. For some men, these situations can bring feelings of inadequacy and frustration, especially as they struggle to fulfill traditional roles as protectors and providers in conditions beyond their control. The stress from these perceived failures can sometimes escalate into violent behaviours directed at family members. This issue is compounded by societal norms that may excuse men's aggressive behaviour post-disaster, as communities empathise with their trauma and suffering. Such responses can silence victims, making it difficult for women and children to seek support or for professionals to address the violence effectively.

Homelessness caused by Domestic Violence [45, 54]

Domestic violence is a leading cause of homelessness, particularly for women and families, as evidenced in the NBM region. The areas of Lithgow and Hawkesbury report some of the highest rates of domestic violence-related assaults. Survivors of domestic violence often face significant financial control exerted by perpetrators, making it difficult for them to access the necessary housing resources. This financial dependency can prevent survivors from securing stable accommodation, further increasing their risk of homelessness. In addition to financial barriers, the region lacks sufficient safe, affordable, and appropriate housing options, particularly for vulnerable groups such as women with children, Aboriginal women, and CALD women. This lack of support options results in many victims either remaining in abusive situations or returning to them due to a lack of alternative housing.

Service needs

General Practitioner Awareness and Capacity

A report by the Special Taskforce on Domestic Violence in Queensland has identified many of those impacted by domestic family and sexual violence seek support from a health professional as the first point of contact, with some GPs estimated to be seeing up to five women per week who have been impacted by these issues. GPs also report they have limited time and acknowledge training in DFSV was not covered in depth [55].

Research shows that GPs are frequently trusted by victim-survivors to disclose their experiences. Given that 23% of women and 8% of men over 18 have experienced sexual violence, and 28.5% of Australians have experienced child sexual abuse, GPs are likely already encountering affected individuals in their practices. However, with the high rates of underreporting, GPs may not fully grasp how prevalent these issues are among their patients, underscoring the need for increased awareness and education in the healthcare system [56].

Addressing sexual violence and child sexual abuse is a shared responsibility, with GPs and medical practices playing a central role. By participating in an integrated, coordinated response to violence, GPs help mitigate its effects on victim-survivors. While GPs may not manage every part of a victim-survivor's recovery, understanding their role in offering support, guidance, and appropriate referrals is essential [56].

The Care and Connect linkers provide support to primary care staff including colocations services at 6 general practices across the NBM including Greater Western Aboriginal Health Service where they support practitioners in the early identification of patients impacted by DFSV. There is room for expansion, but some practices are not equipped to manage an additional person and or, linkers not having additional capacity.

Service Gaps

Local homelessness and domestic and family violence services report seeing significant gaps within the health care sector to meet the needs of women and children who have experienced domestic and family violence. Examples of these gaps include access to specialised trauma informed primary care services who have the capacity to work from a holistic perspective to consider their needs within the context of the violence and abuse. Accessing consistent and affordable healthcare remains a challenge for women experiencing domestic and family violence due, as often their health needs are ignored or dismissed. This is particularly apparent in smaller communities making it difficult for women who are impacted by DFSV to access a local general practice for fear of seeing the perpetrator and or other people associated.

To address this, there is a need for health practitioners to position themselves in local crisis services which would provide women and children with timely and thorough health assessments that are sensitive to their experiences within a familiar and trustworthy environment where additional supports are available via specialist DFV staff. This model has been piloted in the Central Coast by HNECCPHN.

Crisis Accommodation

Available crisis accommodation across the NBM region is limited with the services seeing a bottleneck in their services due to limited exit points (i.e., affordable housing/rental options).

Disaster Preparedness and Recovery for Victims

An overhaul of emergency management frameworks is needed to integrate domestic violence prevention and support measures throughout disaster preparedness and recovery phases. It advocates for targeted training of emergency personnel, equipping them to recognize signs of domestic violence and respond appropriately. Accurate data collection on domestic violence incidents during and after disasters is crucial for understanding the scope of the problem and planning effective interventions. A key recommendation is to provide mandatory family counselling

during the recovery stage, aiming to address the emotional toll of disaster on families and reduce the likelihood of violence. Together, these measures could help identify cases of domestic violence more effectively, mitigate its rise in post-disaster scenarios, and ensure victims receive the support they need to recover in safe and supportive environments [53].

HEALTHY AGEING

Health Needs

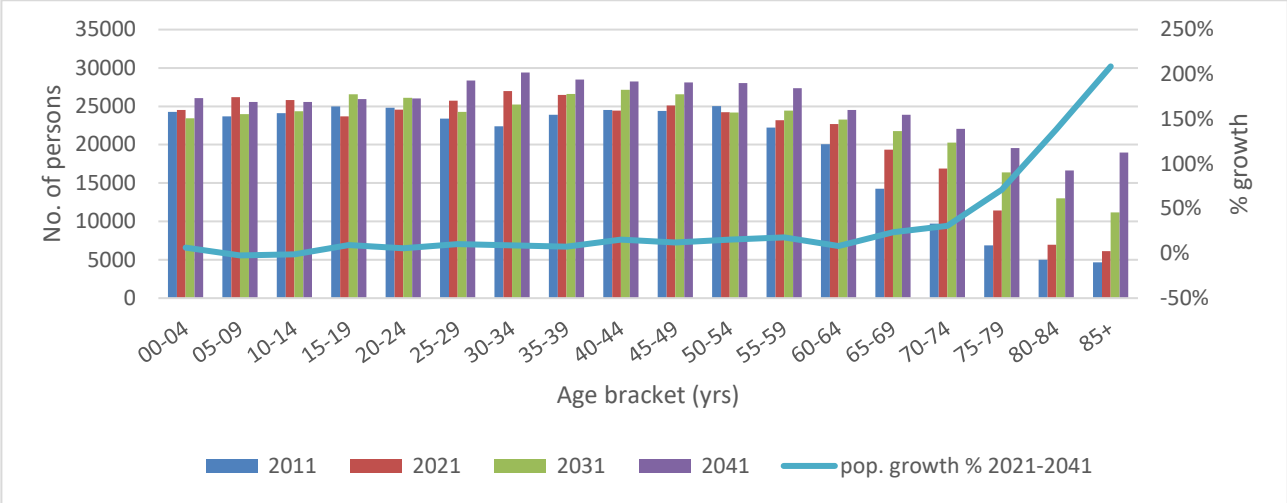
Ageing Population

The projected increase of the population aged 65 years and over will significantly impact the demand for primary care services in the NBM region. Currently, 16.43% of NBM population is over 65, this is expected to increase to 22.33% by 2041, slightly lower than the NSW expected increase of 22.58% [57].

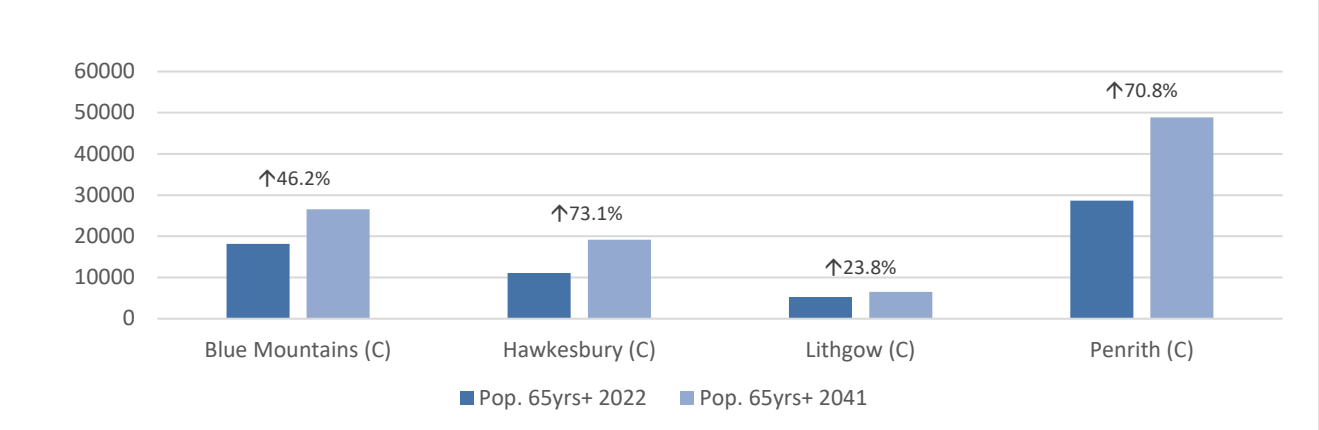
The NBM population growth of those over the age of 65 years is expected to be significant between 2021 and 2041:

- 71.25% for 75-79yrs
- 138.41% for 80-84yrs
- 208.87% for 85+yrs.

Population Projections per 5yr age bracket, NBMPHN, 2011-2041



Expected Population growth of NBM residents 65+ by LGA.



Resource use by people over 65 years shows a substantial increase in general practice. Nearly all patients aged 65+ at a GP consultation had one or more diagnosed chronic condition [58]. 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 [58].

The Blue Mountains City Council's Seniors' Survey identified that 42% of respondents identified as having a disability, which is lower than modelled estimates for the general population in the Blue Mountains. Older persons in the Blue Mountains rated their health similarly to national averages [13].

Residential Aged Care Homes

Available data indicates that more than half (55.6%) of people using residential aged care services in NBM on 30 June 2022 had a diagnosis of dementia and 80% of these people were assessed as having high care needs for cognition and behaviour and have higher care need ratings for activities of daily living than people without dementia (67% and 58% respectively) [59]. This is likely to impact heavily upon the levels of care and assistance required by those persons, including activities of daily living, cognition and behaviour, and complex health care.

Complex health care relates 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 end-of-life-care, and many more. Between 2011 and 2020, the proportion of people in Australia in permanent residential aged care with high care needs ratings progressively increased across every domain of the Aged Care Funding Instrument, including activities of daily living (from 35.1% to 54.4%), cognition and behaviour (from 33.4% to 49.0%) and complex health care (from 24.1% to 42.0%). High care needs rating for the complex health care domain have decreased from 51.8% in 2016, to 42.0% in 2020 [59].

Regular COVID-19 vaccinations are especially important for anyone aged 65 years or older and people at higher risk of severe COVID-19 [60]. As of September 2024, 52.6% residents in aged care nationally received a COVID-19 vaccination in the last six months [61].

Palliative Care

There is an increase in the projected need for palliative care in the NBM region. Deaths per year in the NBM region is expected to increase from 2,240 in 2022 to 3,500 by 2041 [57].

Cause of Death [62]

Cause of Death	NBM (per 100,000)	NSW (per 100,000)
Respiratory Diseases (2019-2021)	48.8	41.5
Chronic Kidney Disease (2018-2020)	49.7	50.8
Cardiovascular Diseases (2020-2021)	144.0	118.6

Modelling of mortality data and underlying cause of death codes (ICD10 codes) in 2017 for the NBMPHN region predicted that 72% of people entering their last year of life would benefit from end-of-life care [63].

Unfortunately, due to poor collection and reporting of palliative care data across Australia, it is difficult to determine current levels of care and service gaps to adequately identify future palliative care service needs for our region. Whilst the planned development of a National Palliative Care National Minimum Data Set (NMDS) will assist in part, there is still a need for local level data to allow adequate assessment of needs at the PHN level [64].
The NBM Community Health and Wellbeing Survey indicates that 30% of respondents over the age of 60 have an Advance Care Directive, and 42% have discussed their end of life care preferences with someone including their healthcare provider [2]. 45% of respondents are not aware of palliative care services in their local area [2].

Dementia

Dementia is a condition primarily associated with an ageing population and is characterised by impairments in memory, thinking, and other cognitive functions. It is often accompanied by difficulties in emotional regulation and social behaviour [65].
Dementia was the second leading cause of death in Australia in 2022, with 178, 000 deaths (9.3% of all deaths) attributed to the condition. Nationally, the age standardised death rate due to dementia has been rising, reaching 45 deaths per 100,000 people in 202 from 33 per 100,000 in 2009 [66]. The leading cause of death for males were coronary heart disease, followed by dementia including Alzheimer's disease, however the leading 2 causes of death for females were dementia including Alzheimer's disease, followed by coronary heart disease [67].
In 2023, dementia was the second leading cause of disease burden in Australia, measured using Disability-Adjusted Life Years (DALYs). The total burden of dementia reached 248,000 DALYs, with 59% attributed to premature death and 41% from living with the disease [68].
In 2024, it is estimated that more than 421,000 Australians are living with dementia. Dementia affects 84 per 1,000 Australians aged 65 years and over, with women making up nearly two-thirds of those living with dementia [68]. In the Nepean Blue Mountains, it is estimated that there are more than 5,500 people living with dementia. The prevalence of dementia is projected to increase significantly across the LGAs within the Nepean Blue Mountains region between 2024 and 2025 [66].

LGA	2024 Prevalence (People)	2054 Prevalence (People)	% Change (2024-2054)
Blue Mountains	1538	2678	74%
Penrith	2506	4341	73%
Hawkesbury	1053	1854	76%
Lithgow	448	779	74%

The prevalence of dementia amongst Aboriginal and Torres Strait Islander Australians is almost five times the rate of the general Australian population [69].
In the 2022-23 financial year, there were 23,076 hospital admissions in NSW related to dementia, either as the primary diagnosis or as a co-morbidity, among residents aged 65 and over. The age adjusted rates of these admissions decreased from 2,122 per 100,000 people in 2013-14 to 1,490 per 100,000 people in 2022-23. Among Aboriginal and Torres Strait Islander people aged 65 and over in NSW, the age-adjusted rate of dementia related hospital admissions in 2022-23 was 2,598 per 100,000. This represents an increase from 2356 per 100,000 in 2013-14.

There were 1,541.6 per 100,000 population hospitalisations in NBM in 2022-23 for dementia. This was significantly higher than the NSW rate (1490.1 per 100,000) [65].

Dementia hospitalisations (aged 65 years and over) per 100,000 NBM vs NSW

Period	NBM	NSW
13/14	2276.70	2122.0
14/15	2172.10	2127.70
15/16	1762.20	1689.30
16/17	1612.80	1635.60
17/18	1670.40	1644.90
18/19	1600.90	1630.60
19/20	1561.20	1717.70
20/21	1380.50	1611.70
21/22	1317.30	1466.50
22/23	1541.60	1490.10

In the NBM region, 17.8% of active patients aged 30 and over with dementia also have a diagnosis of coronary heart disease (CHD), a figure slightly lower than rates seen in Country WA (20.3%) and Western Queensland (20.5%), but comparable to most other PHNs. Additionally, 10.2% of dementia patients in the region had a diagnosis of chronic obstructive pulmonary disorder (COPD), which aligns with the lower end of the range observed across PHNs, such as Northern Sydney at 5.7%. Diabetes was also prevalent, with 23% of dementia patients in Nepean Blue Mountains region having a current or past diagnosis, a rate that is higher than in Northern Sydney (17.6%) but lower than in Southwestern Sydney (33.7%). Anxiety was present in 16.8% of dementia patients in the NBM region, slightly higher than in Western Queensland but lower than in Brisbane North (27.5%). 10.3% of dementia patients in the NBM region had a history of stroke, which is within the mid-range compared to other PHNs, such as Western Queensland at 16.7% and Central and Eastern Sydney at 0.6% [70].

In the NBM region, deaths from Dementia and Alzheimer's remain higher for females and continue to rise. Between 2015 and 2019 in the NBM region, there were 254 male and 474 female deaths due to Dementia and Alzheimer's disease, accounting for 4.3% and 8.4% of deaths from all causes, respectively. Dementia and Alzheimer's disease was the second leading cause of death by international classification of disease (ICD-10) code for all persons in the NBMPHN region during this time (728 deaths) [67].

Due to the COVID-19 pandemic and associated restrictions, people living with dementia, their families and carers have told Dementia Australia that some residential aged care homes have not been able to offer appropriate alternatives to essential visits and this has resulted in poor physical and psychological outcomes for residents with dementia [71].

People living with dementia or mild cognitive impairment are more vulnerable to contracting severe COVID-19 and once infected, have an elevated risk of disease-related morbidity and mortality [72]. People living with dementia, especially those in residential aged care, are at risk of worsening dementia and psychiatric symptoms, and severe behavioural disturbances because of lockdown measures and social isolation [72].

In 2018, a considerable proportion of Australians living with dementia were residing in the community with notable differences in living arrangements based on gender. Overall, 13.9% of people with dementia lived alone. The majority, 86.1% lived with other. 9.1% of men with dementia lived alone, compared to 18.9% of women. Most men (90.9%) lived with others, while a slightly lower percentage of women (81.1%) lived with other [68].

Social Isolation

Social isolation and loneliness are particularly significant issues and contribute to under-addressed problems facing older people. In a 2023 report, almost 1 in 3 Australians feel lonely. (32% of women and 31% of men) [73].

The AIHW estimates that 11% of the population over 65 experiences social isolation. Applying that proportion to our local population it is estimated that 1,929 people over the age of 65 in the Blue Mountains are socially isolated. 1,225 people in the Hawkesbury, 562 people in Lithgow, and 3112 people in Penrith over the aged of 65 are socially isolated [74].

Poorer health is associated with higher rates of emotional loneliness and a lack of social support. Older people without adequate social connections 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 (NSW Health 2016).

The NBM Community Health and Wellbeing Survey indicates that 45% of respondents aged 60 and over participate in social activities daily, while 40% do so weekly, 8% engage monthly or every few months, whilst 3% never participate in social activities. When it comes to family and friends, 42% engage with them daily, 39% weekly, 16% monthly or every few months, and 3% never engage with their family and friends. 64% of respondents report that they rarely feel isolated, while 23.5% sometimes feel isolated, and 11% often experience feelings of isolation. 75% of respondents feel their days are filled with activities that interest them, while 18% feel this way only occasionally. 67% of respondents participate in social groups, and 31% expressed a desire to have more interests in their lives [2].

In a recent Blue Mountains City Council survey, respondents reported higher social contact and stronger connection to their community compared to national averages. However, subjective feelings of isolation were more pronounces, especially for those living alone or with a disability. 52% of seniors reported volunteering in the past year, higher than census data. Popular activities included reading (85%), listening to music (68%) and gardening (59%) [13].

Service Needs

Ageing Population

Older persons in the Blue Mountains face significant barriers to accessing essential services. This is primarily due to limited public transport options, the need for long-distance travel, and extended wait times for healthcare appointments. Public transport frequency and accessibility are inadequate, especially for those who rely on it. The distance required to travel for specialist services, often to Penrith or Sydney, poses a substantial obstacle. In addition, there is often a long wait time to secure these appointments [13].

Compounding these issues, the high cost of healthcare and transport adds financial strain, especially for seniors on limited incomes. Physical and mobility challenges also play a role, as many seniors report difficulty navigating their homes, particularly with stairways, and require help with garden maintenance and bushfire preparation [13]. The NBM Community Health and Wellbeing Survey conducted by WHL indicates that 39% of respondents over the age of 60 have trouble with their mobility. However, 17% of respondents have taken measures to prevent falls and only 16% have had a fall requiring medical attention in the last year. 34% of respondents over the age of 60 have made modifications to their home to improve safety and accessibility [2].

Older people have increasing support needs to remain independent in their home and access to this support is becoming increasingly inadequate, further enhancing the demand on primary care. Care for older people with a cognitive impairment is inadequate to meet present and the increasing needs for home-based care. In addition, people over the age of 55 represented 15.8% of those experiencing homelessness [45]. 21.8% of respondents over the age of 60 to the recent NBM Community Health and Wellbeing Survey indicated that they use a support service. Of these, 86% have a Commonwealth Home Support Package [2]. 11% of respondents indicated that they have a caregiver or receive support from family or friends for activities of daily living [2]. 26.5% of respondents indicated that in addition to managing their own health, they are caring for a family member or friend [2].

As of June 2024, the average wait times for a Home Care Package, at a national level, are as follows for individuals with medium priority [75]:

- Level 1: Less than 1 month
- Level 2: 3-6 months
- Level 3: 9-12 months
- Level 4: 6-9 months.

Navigating the My Aged Care portal for consumers and GPs, to access care needs continues to be identified as problematic.

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 growing risk negatively impacting their physical and mental health. Major barriers include mobility and chronic health issues, accessing appropriate transport, digital exclusion, reduced self-confidence and self-efficacy, financial concerns, limited mental health literacy and the stigma surrounding mental illness, loneliness and social isolation [76].

There is a high level of dispensing of antimicrobials for residents of residential aged care homes and for older Australians in the community aged 65 years and over, which is continuing to trend upwards. Older Australians in aged care homes received more than double the number of antibacterial prescriptions for systemic use per person compared to older Australians in the community in 2023 [7].

Polypharmacy is common in older people because they often have several chronic conditions requiring multiple medicines to manage symptoms. About two-thirds of Australians aged 75 years and over are taking five or more medicines, including over-the-counter and complementary medicines [7]. The 2024 NBM Community Health and Wellbeing Survey conducted by WHL indicates that 46.8% of respondents over the age of 60 are taking more than 5 medications, including over the counter pain relief and supplements. However, 97% of respondents indicated that they are confident in managing their medications [2].

Residential Aged Care Homes

The NBM region has 29 Residential Aged Care Homes (RACHs) with capacity for 2,599 residents. If ageing projections are fulfilled, there will not be enough RACH beds or GPs working within RACHs to cater for the needs of this ageing population. Further, the increasing number of people with dementia is also driving increased demand for aged care services, with more than half of aged care residents having a diagnosis of dementia as of 30 June 2021 [59].

The number of RACHs and beds/places in each LGA is:

- Blue Mountains – 7 homes; 660 beds

- Hawkesbury – 5 homes; 430 beds
- Lithgow – 3 homes; 167 beds
- Penrith – 14 homes; 1342 beds

The number of GP attendances per residential aged care patient, in NBM in 2022–23 was 19 which is consistent with the state average for metropolitan areas [77].
Residents of aged care facilities access primary care more frequently than older adults living in the community. From July 2016 to June 2021, older individuals in the Lumos cohort visited GPs an average of nine times per year. GP visits increased with age, with those aged 85 and over visiting on average 15 times annually. Aged care residents visited GPs significantly more often than their community-dwelling counterparts; nearly half had over 16 GP visits per year, compared to less than a quarter of older adults in the community. Across all age groups, there was a temporary drop in average annual GP visits during 2019-20, coinciding with COVID-19 lockdowns. Visit rates returned to pre-pandemic levels by 2020-21 [78].
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) [79]. 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 is a contributing factor.
Currently attracting a workforce of general practitioners to support the care of RACH residents is also an identified challenge.
Interviews with RACH service providers in the NBM region have revealed several issues around poor access to and utilisation of General Practitioner services within RACHs [80]. These include:

- Poor access to General Practitioner services
- 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.

An emerging issue across NSW is the premature placement of older persons in RACHs. This is occurring due to a lack of community based aged care places to support people to remain living independently at home [81]. 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 RACHs [81].

Palliative Care

Consultations with health service providers and other stakeholders in the NBM region highlighted referrals to palliative care often occur at a time of crisis, instead of earlier in a life-limiting illness trajectory [82].
Key drivers for this issue identified during consultations include:

- Workload pressures in community health results in referrals for early palliative care being delayed.

- Current model of care has limitations, therefore early palliative care needs may not be identified.
- Access to GP services limited, caused by a myriad of workforce issues, including recruitment and retention shortages, GP workforce extremely busy and facing burnout, ageing generation retiring, etc.
- Lack of experience in palliative care across GP workforce, with many GPs unaware of the current palliative care system and the services available for their patients in the region.
- High turnover of residential aged care home (RACH) staff who may not know the resident's clinical condition, meaning resident's palliative care needs not identified early affecting appropriate care plans.

Consultation also identified that there is poor coordination of palliative care across the region, and highlighted:

- Absence of integrated electronic shared care plan accessible to all involved in care.
- Gap in interface between specialist palliative care services and the patient's GP, with current Medicare Benefits Schedule unable to support extended or after-hours consultations or home visits.
- Mixed reporting lines and silos between services
- Inconsistency of advance care planning conversations
- Lack of clear case coordination, leading to a perceived lack of accountability for care across the system

There is limited capacity and capability of health workforce to support palliative care. Specialist palliative care workforce is based within the main hospital centres with many community health nurses not specialising in palliative care and coverage to regional areas is limited. There is an absence of allied health workforce within current palliative care model due to lack of funding. Consultation identified that post covid there is a diminished volunteer and community workforce and there is an opportunity to build workforce capacity.

Consultations with health service providers and other stakeholders in the NBM region highlighted inconsistencies of advance care planning conversations, especially in residential aged care homes (RACHs), which creates challenges in developing an integrated care plan for at home palliative care [82]. Outcomes from the Prevalence of Advance Care Planning Documentation in Australian Health and Residential Aged Care Services research project in 2017 indicated only 29% of older Australians had any type of advance care planning document and only 14% of older Australians had a legally binding advance care directive (ACD). Furthermore, being in residential aged care was the biggest predictor for having advance care planning documentation, which was found for 38% of residents [83].

In general practices, advance care planning conversations usually occur during the Health Assessment for Older Persons (75+), however these conversations should also be occurring with younger people [82].

In RACHs, advance care planning conversations usually commence on admission of the patient to the home, but there is little evidence to demonstrate consistency in follow up. Furthermore, many RACHs prefer using their own branded advance care planning paperwork, leading to inconsistencies in information. Inexperienced staff admitting the resident and/or initiating advance care planning conversations, may also lead to inconsistencies in documentation [82].

Patients and/or families may also be reluctant to accept the diagnosis of a life-limiting illness, further impacting on advance care planning conversations, which can be further exacerbated by the medical model's treatment/recovery pathway until signs of end-stage illness evident [82].

Late and crisis-point advance care planning conversations are known to impact care and cause stress for patients and their loved ones.

Ideally, outcomes of advance care planning conversations or completed Advance Care Directives are uploaded to the person's My Health Record. However, some health professionals have limited access to My Health Record.

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 [84]:

- 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 on Community Knowledge. This suggests a need for educating palliative care workers in the role of the community.
- There are high levels of local experience in providing emotional support to carers, but much lower levels of providing practical support.

Intervention strategies informed by people's life experiences included:

- 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.

Dementia

Key issues and needs identified by carers, people living with dementia and primary care professionals in 2022 were like those identified previously [63]:

- Services vary between the four NBM areas with unique organisations based in each LGA.
- Current referral pathways are ad hoc and can depend on the level of training, interest, and background of the service or general practitioner.
- Immediate needs of the patient and carer were important for services.
- Dementia Australia is a highly respected and known source of information across all professions, however they are not well utilised in the community "*the support lines are always a good service to refer patients or family*" (primary care representative)
- Local support services have changed the way they deliver services in recent years, and this has created some uncertainty for carers.
- All primary care stakeholders consulted were interested to learn more about the available community services and groups.
- There is a need for allied health, community services and GPs to understand younger onset dementia and role of the NDIS.

GPs generally know the clinical referral pathways available but may be unaware of the community supports to refer their patients. The preferred format overwhelmingly for GPs to access information was via HealthPathways followed by resources imbedded into desktop and website

references. The preferred method to pass information to patients was using printed material or brochures from desktop and information packs. Priorities included screening and assessment tools recommended, transport, respite and continence information, and Younger Onset dementia support services.

WORKFORCE

Service Needs

General Practitioner Services

In October 2024, the region had 495 Full-time Equivalent GPs, a rate of 1.3 FTE GPs per 1,000 people [85]. This ratio is currently strained due to the growing population, increasing demand for healthcare services, and the rising prevalence of chronic diseases in the region. By 2036, it is projected that at a minimum an additional 193 FTE GPs will be needed to maintain the current GP to patient population ratio. The increasing population, driven by urban development and migration to the region, particularly in Penrith and Hawkesbury, is expected to exacerbate the demand for GPs [57].

The Upper Blue Mountains area is currently classified as a Distribution Priority Area (DPA) and is experiencing a significant GP shortage. Local practices have struggled for an extended period to recruit doctors. Although the area holds DPA status, practices are unable to recruit non-VR doctors who are Australian citizens or permanent residents because of the MMM1 classification.

This projected shortfall highlights a critical challenge for the NBM region, meeting the future demand for healthcare professionals in the face of population growth. Without addressing this gap, the GP to population ratio will continue to decline, which could lead to longer wait times for patients, increased pressure on existing healthcare infrastructure, and reduced quality of care, especially in already underserved areas like Lithgow and parts of the Upper Blue Mountains.

In October 2024, the region had 132 General Practices, a decrease from 134 from October 2023, distributed as follows [15]:

- Penrith: 74
- Blue Mountains: 23
- Hawkesbury: 27
- Lithgow: 8

In the last two years, 82% of respondents to the NBM Community Health and Wellbeing Survey had visited a GP, with an additional 8.5% who felt they should have but did not. Regarding frequency, 53% see their GP as needed, 17.5% have monthly appointments, and 7% visited at least every fortnight. When it comes to non-urgent appointments, 30% reported being able to see their GP within the same week of booking. Regionally, Hawkesbury and Penrith residents are most likely to secure a same-week appointments (49% and 40% respectively). In contrast, most Blue Mountains respondents (20%) waited between 2 and 4 weeks, and most Lithgow respondents (27%) typically waited 2 weeks. Among those who felt they needed GP care in the last two years, 52% cited long wait times as a significant barrier, 48% reported difficulty securing an appointment, and 36% identified cost as a deterrent [2].

Nurses

As of October 2024, there are 236 nurses employed across 92 general practices in the NBM region. This reflects an 88% increase in the number of nurses employed in the region since 2013 (125 nurses) [15]. This growth, though positive, raises concerns about the ability of the region to meet the increasing demand for healthcare services, particularly considering predictions of a national shortage of practice nurses by 2025 [86].

Penrith employs the highest number with 105 nurses, followed by the Blue Mountains with 68 nurses, Hawkesbury with 45 nurses, and Lithgow with 18 nurses. These figures reflect the continued presence of nurses in general practices throughout the region, though it's important to note that these numbers may not represent unique nurses, as many work across multiple locations and could be counted more than once.

A simulation model predicted that the General Practice Nursing workforce in Australia would face a shortage by 2025. This projected shortage is concerning for regions like the NBM, where the employment of practice nurses has historically been lower than the national average. A shortage of practice nurses would have significant implications for healthcare practices in the region [86].

With an ageing population and rising rates of chronic diseases such as diabetes and cardiovascular diseases, practice nurses play a crucial role in patient management. A shortage could overwhelm GPs, leading to increased workloads and longer patient wait times. As GPs are left to manage tasks that would traditionally be supported by practice nurses, their workloads will increase, potentially resulting in burnout and decreased quality of care. Many new healthcare delivery models, such as team-based care and chronic disease management programs, rely heavily on the role of practice nurses. A shortage could hinder practices' ability to participate in these models, leading to increased healthcare costs and reduced patient outcomes [86].

While there has been growth in the workforce, the rate of increase may not be sufficient to offset the predicted national shortage of practice nurses. Addressing this shortage will be crucial for maintaining the region's capacity to manage rising healthcare demands and ensuring that both GPs and nurses are able to provide effective and comprehensive care.

Shortage of Specialists and Allied Health Professionals

In addition to the challenges faced by GPs, there is a shortage of specialists and allied health professionals in the NBM region. This shortage contributes to delays in patient care, increased pressure of GPs, and reduced overall healthcare services availability in the region. The absence of adequate numbers of specialists, such as cardiologists, endocrinologists, and psychiatrists, in rural areas, creates bottlenecks in the system where patients must wait longer for diagnosis and treatment. This shortage forces patients to travel to Penrith or beyond the region for care or rely on GPs for services that are outside their traditional expertise [9]. Shortage of specialists in peri-urban and rural parts of the region e.g., psychiatrists, endocrinologists, and paediatricians, especially in Lithgow, where there is a high demand for these services. Many areas (except Penrith and Richmond-Windsor) are currently classified as distribution workforce shortage for all major specialties. The region also experiences a shortage of allied health professionals across all disciplines, especially the psychologists.

Doctors are not choosing GP as a specialty, Junior Medical Officers (JMOs) are not exposed to general practice as part of their rotation, limiting their understanding of this specialty and the benefits and variety it offers.

57% of respondents to the NBM Community Health and Wellbeing Survey reported seeing an allied health professional in the past two year, while an additional 14% felt they should have but did not. Among those who accessed allied health services, 77% found it easy or somewhat easy to get an appointment when they needed. For those who did not see an allied health professional despite feeling the need, the main barriers included long wait times (42%), the cost of appointments (41%), and difficulty securing an appointment (34%) [2].

Challenges in Regional and Rural Areas

One of the most pressing issues in the NBM region is the declining workforce capacity of primary healthcare professionals, especially in regional and remote areas. While urban centres like Penrith are relatively well-serviced, areas like Lithgow and Upper Blue Mountains experience significant challenges in maintaining adequate healthcare services. This decline in workforce capacity is particularly stark for healthcare professionals such as psychologists, physiotherapists, podiatrists, and specialist medical practitioners.

The AIHW data demonstrates that the FTE rate for many healthcare professionals drops significantly in regional and remote areas compared to major cities [87]. This disparity means that individuals living in these areas have fewer healthcare options and are more likely to experience delays in receiving care. People in rural areas are less likely to visit specialists, dentists, or after-hours GP services, which directly impacts their overall health outcomes [87].

The shortage of healthcare professionals leads to increased pressure on the remaining workforce, as fewer practitioners are available to meet the needs of a growing and ageing population. GPs in these areas often take on broader roles, including procedural work and hospital duties, further limiting their availability for general practice consultations [88]. This results in a cycle where workforce shortages reduce service availability, which in turn deters healthcare professionals from working in these areas due to overwhelming workloads [88].

Dependence on International Medical Graduates

The NBM region, like many parts of Australia is becoming increasingly dependent on International Medical Graduates to fill gaps in the GP workforce. This dependence has arisen due to challenges in recruiting and retaining Australian-trained GPs, particularly in regional and remote areas. In Australian, 43% of the GP workforce in 2023 consisted of International Medical Graduates, and these graduates accounted for 54% of the total GP FTE during the same period [88].

Recruitment challenges are compounded by the unequal distribution of GPs, where urban areas attract more healthcare professionals than regional and rural areas. GPs are drawn to cities due to better professional opportunities, lifestyle factors, and access to resources, leaving rural areas understaffed [89]. The workload pressures, long hours, and professional isolation in rural settings further contribute to difficulties in retaining both Australian-trained GPs and International Medical Graduates [89].

While International Medical Graduates help fill critical gaps, they often face barriers to integration, including navigating the complexities of the Australian healthcare system and differences in training [89]. Many International Medical Graduates are brought in under programs designed for short-term placements, meaning that long term retention of these professionals remains an issue [89].

Impact of Ageing GP Workforce

The ageing GP workforce in the NBM region presents a significant challenge for healthcare service provision. National data indicates that 15.7% of GPs are aged 65 and over, and this percentage is even higher in certain areas of Western Sydney, where 22% of GPs are over the age of 65. An ageing workforce presents a looming crisis [89].

The region is at risk of losing a portion of its experiences GPs in the coming years. As these doctors retire, there is concern that the next generation of GPs may not be sufficient to fill the gap, especially in rural areas where recruitment is already difficult. This shortage will further strain the

remaining workforce, increasing workloads and reducing access to healthcare, particularly in underserved areas [88].

Compounding this issue is the declining interest in general practices as a career choice among medical graduates. Fewer Australian medical students are choosing to specialise in general practice, opting instead for other specialties that offer better financial rewards, career progression, and work-life balance. As a result, rural areas are often left with fewer options when seeking to replace retiring GPs [89]. Younger GPs who do not choose to practice in rural areas often face challenges that make retention difficult. Long hours, professional isolation, limited career development opportunities, and personal factors such as family commitments or housing shortages can lead to burnout and higher turnover rates [89]. Many healthcare workers in rural areas face long commutes, either because they live far from their place of work or because they need to travel between multiple clinics or facilities to meet patient demand [89].

AFTER HOURS

Health Needs

GP Attendances [77]

The after-hours attendance rate in the NBM region for all persons stands at 25.72% which is notably higher than the national average of 16.40%. This indicates a strong reliance on after-hours services in the region. Among the elderly aged 80+, the attendance rate is especially high at 28.79% suggesting that older populations in the region depend significantly on after-hours care. The data also shows that females in the NBM region use after-hours services more frequently, with a rate of 27.42% compared to 24.00% for males. This aligns with broader national trends where women are generally higher users of healthcare services.

When examining non-urgent after-hours attendances, 25.37% of all persons in the NBM region accessed these services, compared to the national figure of 15.63%. This suggests that NBM residents are more likely to rely on after-hours GP services for non-urgent issues. However, urgent after-hours attendances remain relatively low, with NBM reporting a rate of 0.77%, which is slightly below the national average of 1.27%. This low rate of urgent after-hours services may indicate that urgent cases are being managed in other healthcare settings, such as urgent care centres, hospitals, or emergency departments.

Age group patterns further reveal the reliance on after-hours services. Among children aged 0-14, 29.85% used non-urgent after-hours GP services, compared to the national average of 17.61%. This suggests that parents in the region are utilising these services to address acute but non-urgent conditions, which might otherwise lead to unnecessary emergency department visits. The working-age population (25-44 years) also shows a higher reliance on after-hours services, with 28.07% attending non-urgent GP appointments after hours, compared to 16.03% nationally. This could reflect lifestyle factors or employment constraints that limit access to healthcare during regular hours, prompting greater use of after-hours services.
In terms of urgent care, children aged 0-14 in NBM region use these services at a lower rate of 1.42%, compared to the national rate of 2.03%, suggesting that urgent pediatric care may be more readily available through other channels. The elderly population (80+), however, relies more on urgent after-hours GP services, with a rate of 2.51%, which, although lower than the national rate of 4.57%, still indicates significant use of after-hours care for this age group. This pattern highlights the healthcare needs of the elderly, particularly in managing chronic conditions that may escalate outside regular GP hours.

ED [90]

Emergency Department presentation data from 2020-2021 indicates, high urgency care (Triage 1+2) is less frequent during after-hours periods compared to daytime hours. The after-hours rate of ED presentations for all persons in the NBM region ranged from 50.3 to 64.6 per 1,000 population across the different SA3 regions, depending on location. This relatively low rate of high urgency care suggests that fewer urgent conditions occur during these periods or that patients might delay care until regular business hours.

In contrast**,** lower urgency care (Triage 3-5) shows significantly higher use of ED services during after-hours. The after-hours rate of lower urgency ED presentations per 1,000 population in the NBM region is 122.8 in Lithgow-Mudgee, which is the highest within the NBM region. Other areas, such as Penrith (52.1 per 1,000) and St Marys (50.3 per 1,000), exhibit lower rates but still reflect substantial reliance on EDs for non-urgent cases. This trend indicates that many patients are seeking care for less critical issues during after-hours, possibly due to a lack of alternative healthcare services, such as after-hours GPs or urgent care clinics.

Nationally, the after-hours lower urgency ED presentation rate is 53.7 per 1,000 population, which is comparable to the lower end of the NBM region. However, specific NBM regions like Lithgow-Mudgee have much higher after-hours rates, indicating a greater dependence on EDs for non-urgent care in rural areas. In contrast, more urbanized areas like Penrith and St Marys show lower after-hours rates, suggesting better access to alternative care options.

For higher urgency care (Triage 1+2), the national after-hours rate is around 53.7 per 1,000 population, indicating a consistent need for urgent care across both the NBM region and nationally. The higher rates of lower urgency care reflect the broader trend that emergency departments are being used disproportionately for non-urgent issues during after-hours, particularly in more rural areas where access to healthcare is more limited.

HealthDirect [91]

The 0-4 age group represents the largest proportion of calls to HealthDirect in the NBM region. This is consistent with national trends, where parents and caregivers often seek medical advice for young children, particularly when symptoms are unclear or alarming, such as fever, vomiting, or respiratory issues.

The second largest group, those aged 20-39 years, accounts for 26.2% of calls, with most callers being women (71.5%). Women in this age group are often either new mothers seeking advice for their children or managing their own health.

The percentage of Aboriginal and Torres Strait Islander callers (7.7%) to HealthDirect is notably higher than the national average. This indicates there is an increased reliance on telehealth services by Aboriginal and Torres Strait Islander communities.

The top reasons for calls in the NBM region were vomiting, fever, abdominal pain, and cough, mirroring common health concerns across the country. Vomiting and abdominal pain were ranked higher in the NBM region compared to the national average. Fever and cough are commonly reported symptoms and are often associates with respiratory infections, which tend to peak during certain seasons, leading to higher call volumes during those times. The overlap with national trends in symptoms reporting indicates that HealthDirect is being used in the region much like it is elsewhere, primarily for non-life threatening by concerning symptoms that require urgent advice. The prominence of abdominal pain and vomiting suggest a potential localised issue or an increased uptake in the service by parents concerning children’s digestive distress.

In the NBM there is a notable variation in the use of phone services based on SEIFA scores. More calls were made by individuals from areas with SEIFA scores of 5 or 6, which indicated moderate

socioeconomic disadvantage. These areas may have less access to healthcare services, leading residents to rely more heavily on HealthDirect for advice.
The analysis of Digital Triage data for the NBM region was found to be unreliable, with only 170 uses recorded between January 2020 and August 2023. This low level of usage may indicate that the population is either not aware of or not comfortable using the Digital Triage tool, preferring to rely on phone-based services instead. It may also reflect broader digital inclusion challenges, such as limited internet access, digital literacy, or trust in technology.

32% of callers in the NBM region were repeat customers, which aligns with trends seen across NSW. The top reasons for first time calls from known customers were vomiting, fever, abdominal pain, cough, and head injuries. These symptoms are typical reasons for urgent healthcare inquiries, especially children or those with chronic conditions who may need recurrent medical advice. The high rate of repeat callers may reflect ongoing health management needs, particularly for chronic or recurring conditions.

Service Needs

Services

Since 2018, there has been no Medical Deputising Service in the Upper Blue Mountains due to the retirement of a solo practitioner who was responsible for providing after hours care. This has left a large geographic area without adequate coverage, forcing patients to travel significant distances to access after-hours care, often resorting to hospital emergency departments. The lack of MDs in such remote areas exacerbates healthcare inequities, particularly for vulnerable populations such as the elderly and those with chronic health conditions [9].

In the Hawkesbury region, MDS coverage has also been reduced, reflecting broader workforce shortages across the healthcare sector. The region used to have a more robust after-hours system, but recent years have seen a decline in available services, leaving patients with fewer options for urgent during evening and weekends.

In the NBM region, there are 2-3 MDS providers, which are responsible for delivering after-hours care to a large population. Despite this availability, workforce shortages continue to impact the effectiveness of these services. MDS rely heavily on locum GPs, who often work in multiple clinics or regions. The availability of locum GPs has been declining, further limiting the capacity of MDS providers [9].

The COVID-19 pandemic had a profound impact on the financial viability of after-services across the NBM region. During the pandemic, public health restrictions and a shift towards telehealth led to a decline in in-person consultations at after-hours clinics. While telehealth offered a temporary solution for some patients, it could not fully replace the need for physical assessments in urgent cases, particularly for patients without access to reliable technology [88].

The NBM Community Health and Wellbeing Survey found that 22% of respondents reported that their GP offers after hours services, 22.5% were unsure and 55% states their GP does not provide after-hours services. In the past six months, 28% of respondents used an after-hours service. Among those who used after-hours care, 33% visited an after-hours clinic, 23% went to an

Emergency Department, 18% used a telehealth service like HealthDirect, and 16% visited an urgent care centre. 93% of respondents felt that their chosen service addressed their issue [2].
62% of respondents believe there are enough after-hours services in their area. Positive responses were common in the Blue Mountains, Hawkesbury, and Penrith. However, in Lithgow 75% of respondents indicated a lack of sufficient after-hours services [2].
When asked where they would go for after-hours medication, 54% said they would wait for their usual pharmacy to open, 32% would go to a 24-hour pharmacy, and 15% would to the emergency department [2].

DIGITAL HEALTH

Health Needs

Telehealth

Digital health tools have become essential in improving access to healthcare services in the Nepean Blue Mountains region, especially in response to the challenges brought about by the COVID-19 pandemic.

The COVID-19 pandemic acted as a catalyst for the rapid expansion of telehealth services in the NBM region, transforming the way healthcare was delivered. Telehealth, particularly through the Healthdirect Video Call service, provided an alternative to in-person consultations, helping to maintain continuity of care while minimizing physical contact.
Healthdirect Video Call was rolled out to 34 general practices across the NBM region, enabling virtual consultations that allowed patients to receive care remotely. During the Greater Sydney lockdown (July 1 to October 31, 2021) over 1,070 video consultations lasting more than six minutes were conducted [9].

Telehealth is now an integral part of healthcare delivery, with 1 in 5 GP consultations nationally occurring via telehealth. In the 2023-2024 financial year more than 340,000 consultations in the NBM region were billed as telehealth consults across 94 practices [92]. The 2024 NBM Community Health and Wellbeing Survey indicated that of those who had a telehealth consult in the last 12 months, 43% rated their experience with telehealth consultations as excellent, 42% good 12% fair, and 3% poor [2].

The digital divide remains a barrier to equitable telehealth access, particularly for older adults, those in rural and remote areas, and individuals with low digital literacy [93]. Ensuring that all population groups have access to the necessary technology and training is crucial. The 2024 NBM Community Health and Wellbeing Survey indicated that 35–44-year-olds are the age group most readily using digital health service with 76% of respondents in this age group using digital health tools followed closely by the 25–34-year-olds with 71.67%. Respondents between the ages of 70-84 are less likely to use digital health tools with only 35% having used a digital health service in the last year [2].

My Health Record

My Health Record (MHR) has been a critical tool for improving the continuity and coordination of care in the NBM region. The widespread adoption of MHR among general practices has been encouraging with 123 of the 126 computerised practices in the region registered to upload shared health summaries. In the 2023-2024 financial year 29,294 shared health summaries, 6,142 event summaries and 1,154,136 prescription records were uploaded [94]. 75% of respondents to the NBM Community Health and Wellbeing Survey, aged 18-24 and 65% of respondents aged 25-44 have access to their My Health Record. 37% of respondents aged 60 years and over are unsure if they have access to their My Health Record compared to 11% of respondents aged 25-44. Of those that have access to their My Health Record 47% access their My Health Record as needed, whilst 24% access monthly, and 12% never access their My Health Record. The primary reason that respondents access their My Health Record is to look at test results 34% [2].

However, the adoption of MHR by Residential Aged Care Facilities (RACHs) in the region has been slower. Only 51% of NBM RACHs are registered with MHR, significantly lower than the near-total registrations of general practices [94]. This gap highlights a need for increased participation among RACHs, particularly as aged care residents often require complex, coordinated care that could benefit from the enhanced record-sharing capabilities of MHR.

One of the primary challenges in using MHR to its full potential is the fragmentation of patient data, which remains an issue despite the platform's widespread adoption [93]. A significant gap in MHRs utility is the low participation from allied health professionals and specialists, who often face interoperability issues with their existing software systems. Many allied health provides do not use MHR or upload patient data, which creates a gap in comprehensive patient care, particularly for those with complex health needs that require multidisciplinary coordination [93].

Even for practices and providers registered with MHR, not all patient data is consistently uploaded, and patients themselves can control what data is included or excluded. This leads to incomplete health records, limiting the effectiveness of MHR as a tool for healthcare providers to deliver integrated and well-informed care [93]. The 2024 NBM Community Health and Wellbeing Survey identified that of those who have access to their My Health Record 71% report that having a My Health Record is helpful in managing their health. However, 44% of respondents do not ensure that their GP updates their My Health Record, 25% indicated that they request their GP to update the record every visit, whilst 29% request an update when they receive a new diagnosis, medication, or immunisation [2].

Electronic Prescriptions

The adoption of electronic prescriptions (eScripts) was one of the major successes of the pandemic response in the NBM region. In response to the challenges posed by the lockdowns and restrictions on movement and the continued push for eScripts, 96% of pharmacies in the region became enabled for eScripts [9]. This digital health solution allowed patients to receive their prescriptions electronically, reducing the need for in-person visits to healthcare facilities and enhancing medication management.

By the end of 2021, NBMPHN had engaged with and supported 100% of the region's pharmacies to ensure they were ready to issue and accept eScripts. This rapid deployment was crucial in maintaining access to medications, particularly for vulnerable populations during lockdown [9].
Despite the high adoption rated of eScripts, there are still gaps in fully integrating this technology across all healthcare settings. Some pharmacies and healthcare providers in rural or underserved areas may still struggle with the necessary infrastructure for eScripts. Reliable internet access, software updates, and staff training are essential to ensure that all pharmacies can participate in electronic prescription services. Additionally, rural populations may face barriers adopting eScripts if they are less familiar with digital technologies or lack access to the internet [9].

As seen during the bushfires and floods, digital health technologies like eScripts can be disrupted when infrastructure is compromised. Patients who rely on electronic prescriptions need access to backup systems or alternative methods to ensure continuity of care when digital services are unavailable [9].

Service Needs

Barriers

It is estimated that better integration of digital technology could save over $5 billion annually in the healthcare system. Improving the use of electronic medical records could save up to $5.4 billion per year by reducing hospital stays and $355 million by preventing duplicated tests. It is also estimated that up to 30% of healthcare workforce tasks could be automated through digital technology, saving valuable time for direct patient care [93].

Digital innovations such as telehealth, digital therapeutics, and remote patient monitoring allow patients to access care from home, reducing travel time and associated costs, generating $895 million in consumer savings annually [94]. While the rapid uptake of telehealth was a positive development of COVID-19, it also revealed significant infrastructure challenges, particularly during natural disasters such as bushfires and floods. These crises exposed the vulnerabilities in existing infrastructure making it difficult for patients in affected areas to access telehealth services. Infrastructure damage, including road closures, power outages, and telecommunications failures, incurred during the 2019 and 2020 bushfires and flooding severely impacts patients' ability to obtain critical health information and medical services [9].

One of the significant barriers to the widespread adoption of digital health tools, such as telehealth and MHR, is low digital literacy among certain populations. This is especially prevalent among older adults, low-income individuals, and residents in rural areas. Many of whom may not have access to the necessary technology or knowledge to utilise digital health tools effectively [93].

The 2024 NBM Community Health and Wellbeing Survey identified barriers to the use of digital health tools and services include respondents preferring in person visits (33.7%), privacy concerns (29.7%), lack of awareness of available tools and services (27.2%), difficulty using technology (24.2%) and poor internet access (17.8%). More than 50% of those that reported poor internet access, reside in the Blue Mountains LGA. 77% of respondents that reported difficulties using digital health technology were under the age of 50. However, 60% of respondents reported that they would be likely or very likely to use digital health services in the future [2].

There is a clear need for digital literacy programs that specifically target populations with low digital literacy. These programs need to focus on educating individuals on how to access and navigate MHR, book telehealth appointments, and manage electronic prescriptions. Ensuring access to affordable internet and digital health services is also critical.

Interoperability

There is a need to increase outreach to private specialist practices, allied health providers and community health providers. Many of these providers face software interoperability challenges, which hinder their ability to integrate with MHR systems and upload valuable patient data [93]. Often referred to as a shoebox of PDFs due to its limited functionality, MHR sees issues with fragmented patient records, reducing its effectiveness as a tool for coordinated care [93]. Providing training for healthcare providers on how to effectively use MHR could improve its adoption across various sectors. Specialists and allied health professionals need specific support to overcome barriers to using MHR within their existing workflows [9].

Improving the interoperability of MHR with other health record systems, especially those used by allied health and specialist providers, is crucial. This would ensure that data sharing across multiple healthcare providers is seamless, reducing care delays and improving the overall quality of patient records.

MENTAL HEALTH

Health Needs

Prevalence of individuals need mental health support [95]

The Nepean Blue Mountains region continues to experience a significant prevalence of mental illness. In 2024-2025, it is estimated that approximately 66,835 individuals will require mental health services within a 12-month period. Additionally, 89,983 will remain at risk of developing a mental illness and may need early intervention to prevent progression. These numbers indicate a growing demand for mental health services across the region.

Mild Mental Illness [95]

The number of individuals in the NBM region who will experience a mild mental illness in a 12-month period has risen to 33,275 in 2024-2025, compared to 31,447 in 2019. This represents a growth of approximately 6%. This trend is expected to continue, with the number projected to reach 37,348 by 2034-2035. Each LGA has experienced similar increases. In the Blue Mountains, the number of individuals who will experience a mild mental illness increased from 6,408 in 2019 to 6,788 in 2024-2025, which accounts for 8.7% of the Blue Mountains' population. This number is projected to reach 7,631 by 2034-2035. In the Hawkesbury, the population with mild mental illness rose from 5,575 in 2019 to 5,898 in 2024-2025, representing 8.6% of Hawkesbury's total population, and is expected to climb to 6,617 by 2034-2035. The Lithgow area saw its number grow from 1,811 in 2019 to 1,925 in 2024-2025, which is 9.3% of Lithgow's population, with a projected total of 2,177 by 2034-2035. Penrith experienced the largest increase, from 17,653 in 2019 to 18,664 in 2024-2025, representing 8.3% of Penrith's population of 224,483. This figure is projected to rise further to 20,923 by 2034-2035. It is not expected that all these individuals will seek or require services within a 12-month period.

LGA	2019-2020	2024-2025	2034-2035
Blue Mountains	6,408	6,788	7,631
Hawkesbury	5,575	5,898	6,617
Lithgow	1,811	1,925	2,177
Penrith	17,653	18,664	20,923

Moderate Mental Illness [95]

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 number of individuals likely to experience moderate mental illness in a 12-month period in the NBM region increased from 19,597 in 2019 to 20,752 in 2024-2025, a rise of approximately 5.9%. By 2034-2035, this number is expected to reach 23,287. In the Blue Mountains, the number of individuals with moderate mental illness increased from 4,001 in 2019 to 4,242 in 2024-2025, representing 5.4% of the population, with projections indicating a rise to 4,768 by 2034-2035. In the Hawkesbury, the population with moderate mental illness increased from 3,476 in 2019 to 3,680 in 2024-2025, accounting for 5.4% of the population, with expectations of reaching 4,128 by 2034-2035. Lithgow experienced a similar rise, from 1,132 in 2019 to 1,204 in 2024-2025, which makes up 5.8% of its population, and is projected to reach 1,362 by 2034-2035. Penrith's number grew from 10,988 in 2019 to 11,626 in 2024-2025, which is

5.2% of Penrith's population, with an expected increase to 13,029 by 2034-2035. It is likely that 80% of these people will need or seek treatment within a 12-month period.

LGA	2019-2020	2024-2025	2034-2035
Blue Mountains	4,001	4,242	4,768
Hawkesbury	3,476	3,680	4,128
Lithgow	1,132	1,204	1,362
Penrith	10,988	11,626	13,029

Severe Mental Health [95]

Severe mental illnesses are defined by diagnosis type – including any diagnosis of psychosis or bipolar; and impact on functioning – including other severe disorders with high impact, such as major depressive disorder requiring hospitalisation, and/or had more than 60 days out of role in the last year, &/or experiencing very high distress, and/or is unable to work at the current time. Severe mental illness saw a marked rise, with the number of individuals likely to experience a severe mental health illness growing from 10,195 in 2019 to 10,808 in 2024-2025, representing an increase of 6.0%**.** This number is projected to rise further to 12,147 by 2034-2035. In the Blue Mountains, the number of individuals with severe mental illness increased from 2,032 in 2019 to 2,155 in 2024-2025, making up 2.7% of the population, with projections indicating a rise to 2,424 by 2034-2035. In the Hawkesbury, the population with severe mental illness grew from 1,807 in 2019 to 1,915 in 2024-2025, accounting for 2.8% of the population, with an expected increase to 2,151 by 2034-2035. Lithgow's severe mental illness population increased from 606 in 2019 to 646 in 2024-2025, representing 3.1% of its population, with a projection of 732 by 2034-2035. Penrith saw a rise from 5,750 in 2019 to 6,092 in 2024-2025, accounting for 2.7% of its population, with an expected increase to 6,840 by 2034-2035. All these individuals (100%) will need or seek treatment within a 12-month period.

LGA	2019-2020	2024-2025	2034-2035
Blue Mountains	2,032	2,155	2,424
Hawkesbury	1,807	1,915	2,151
Lithgow	606	646	732
Penrith	5,750	6,092	6,840

Longer Term Mental Health Behaviour Conditions [96]

In the NBM region, it is estimated that in the last 12 months, 16.62% of people aged 15 and over have long term mental and behavioural conditions. Females are more likely to have a long term mental and behavioural condition (17.82%) compared to males (15.36%). People aged 15-24 have the highest rate of long term mental and behavioural conditions (22.55%) followed by people aged 25-44 (18.28%). Long term mental and behavioural conditions are also most common for people in single parent households (24.03%), who are not employed (29.89%) and in lower middle-income households.

Psychological Distress Rates in Adults [96]

In 2021-2023, the percentage of people in the NBM region reported low levels of psychological distress was 52.2%, compared to 56.2% in New South Wales. This continues a downward trend in the NBMPHN, where low distress levels have steadily declined since 2003-2005, when the rate was 66.6%, compared to 67% across NSW. The NBM region has consistently recorded lower percentages of low psychological distress since 2015, indicating a growing level of psychological distress in the region.

For moderate levels of psychological distress, the percentage of individuals in the NBM region rose to 27.1% in 2021-2023, up from 25% in 2019-2021 and 21% in 2003-2005. Across NSW, moderate distress levels were 26.3% in 2021-2023, compared to 25.8% in 2019-2021 and 20.7% in 2003-2005. Both the NBMPHN and NSW have seen a steady increase in moderate distress, though the NBM region has generally maintained slightly higher rates.

When it comes to high-level psychological distress, the NBM region saw an increase from 8.3% in 2003-2005 to 13.4% in 2021-2023. Across NSW, the percentage of high-level psychological distress rose from 8.8% in 2003-2005 to 11.7**%** in 2021-2023. This suggests that the NBM region has consistently faced higher rates of high distress compared to the state-wide average, reflecting greater challenges in addressing severe mental health issues.

For very high levels of psychological distress, the percentage in the NBM region increased from 4.1% in 2003-2005 to 7.2% in 2021-2023. Across NSW, the percentage grew from 3.5% in 2003-2005 to 5.8% in 2021-2023. This reflects a significant increase in very high distress levels in the NBM region compared to other regions in NSW.

According to Mental Health Australia, it is estimated that 12.8% of people aged 18 and over have experienced high psychological distress in the past 12 months. This includes 10.67% of males and 13.62% of females. The highest rates of psychological distress are observed among individuals aged 18 to 24, with 22.23% of this age group affected. Other groups with elevated distress levels include those in lower middle-income households (15.13%), the unemployed (26.75%), and single-parent households (24.32%).

At a regional level, the Lithgow-Mudgee SA3 region reported the highest rate of psychological distress in 2021-2023 at 21.87%, followed by the Hawkesbury region at 13.41%, highlighting significant regional disparities in psychological well-being across the Nepean Blue Mountains PHN area.

Child and Youth Mental Health Disorder Prevalence

The mental health of children and adolescents remains a significant concern across Australian and the NBM region. The fifth Biennial Youth Mental Health Report (2012–2020) from Mission Australia showed that the proportion of young people aged 15–19 experiencing psychological distress has increased from 18.6% in 2012 to 26.6% in 2020. Females have experienced a steeper increase in psychological distress, rising from 22.4% in 2012 to 34.1% in 2020, a difference of 11.7% [97]. This increase is further supported by the 2023 Youth Survey from Mission Australia, which also reported that nearly one-quarter of respondents mentioned mental health issues such as stress, anxiety, and low self-esteem as significant personal challenges [98].

In the NBM region, General Practice data indicates that, 13.77% of active patients aged between 4-17 years have a coded mental health disorder. Attention-deficit/hyperactivity disorder (ADHD) was the most common, affecting 5.39% of the population, followed by anxiety at 4.39%, autism at 3.29%, and depression at 0.63%. The breakdown of mental health diagnoses shows a notable gender disparity. Males have higher rates of ADHD (7.61%) and autism (4.82%), while females experience higher rates of anxiety (5.28%) and depression (0.95%). This follows the trend identified by the AIHW in the 2021 Mental Health of Children report. Female youth were more likely to report mental health concerns, particularly around anxiety, depression, and psychological distress. Depression rates among females have declined slightly (0.78%) since 2021 but remain higher than those for males. Males, on the other hand, are almost three times more likely to be diagnosed with ADHD and autism than their female counterparts [99].

The 2023 Youth Survey findings further indicate that mental health remains a top concern for young Australians. Approximately 32% of young people expressed concerns about their mental health, with many citing it as one of the most important national issues. In addition, close to one in four young people nationally met the criteria for psychological distress, a sharp increase compared to previous years [98]. The Mission Australia and Black Dog Institute's 2019 joint report supports these findings, showing that psychological distress has increased among young people, particularly among Aboriginal and Torres Strait Islander youth. In 2018, more than three in ten (31.9%) Aboriginal and Torres Strait Islander youth met the criteria for psychological distress compared to 23.9% for non-Indigenous youth [97].

The highest rates of psychological distress are found in individuals aged 18 to 24, with 22.23% experiencing distress. Other groups with higher distress rates include individuals from lower middle-income households (15.13%), the unemployed (26.75%), and single-parent households (24.32%) [98].

Within the NBMPHN region, the prevalence of mental health issues varies significantly across LGAs, with notable disparities between communities. Lithgow has consistently recorded one of the highest levels of psychological distress, with 21.87% of individuals affected. This is a stark contrast to Hawkesbury, where 13.41% of the population reported experiencing psychological distress. These numbers reflect the broader challenges faced by young people in rural and semi-rural areas where mental health services are often less accessible. The high levels of psychological distress in Lithgow could be attributed to several factors. Access to services in more remote areas like Lithgow is limited, with fewer specialized mental health professionals available locally, forcing individuals to travel long distances to larger urban centres like Penrith or Sydney for support. This geographical isolation can exacerbate feelings of helplessness and distress, particularly among young people who may already be facing difficulties with transport or accessing online services.

Socioeconomic conditions also play a critical role in these mental health outcomes. Lithgow, as a more rural and industrial area, has higher levels of unemployment and economic hardship compared to urban regions. Financial stress is a well-documented driver of mental health problems, and for many young people in Lithgow, the lack of employment opportunities or prospects may contribute to higher levels of anxiety and depression. Studies have shown that individuals from lower-income households are more likely to experience mental health issues, and the socioeconomic disparities between Lithgow and more affluent areas of the region further illustrate this trend.

In contrast, Hawkesbury benefits from closer proximity to urban centres, which allows for better access to a wider range of mental health services and resources. Although 13.41% of young people in Hawkesbury experience psychological distress, they may have more opportunities to engage with local health services, support networks, and community outreach programs, mitigating some of the adverse effects associated with rural isolation.

The impact of socioeconomic and geographical factors in shaping mental health outcomes is further highlighted by the 2023 Youth Survey, which found that young people in rural areas often report feeling more disconnected from educational and health services compared to their urban counterparts. The survey indicated that young people in regions like Lithgow are also more likely to face challenges related to education and employment, further compounding their mental health issues.

Burden of Mental Ill Health

In comparison to the 2018 Burden of Disease Study data, the 2023 report shows that mental health and substance use disorders continue to be a leading cause of disease burden in Australia, now accounting for 15% of the total disease burden, up from 13% in 2018. Anxiety disorders saw a 33% increase in burden between 2003 and 2023. This rise in mental health-related burden parallels the slight increase in suicide and self-inflicted injuries observed in 2018, with males continuing to contribute three times more to this burden than females. The 2023 study also confirms that anxiety and depressive disorders remain key contributors to non-fatal burden, ranking fourth overall in burden for 2023. This highlights the ongoing mental health challenges faced by the population, particularly in the context of the COVID-19 pandemic, which may have further exacerbated the mental health crisis [100].

Individuals experiencing medium to high levels of psychological distress face substantial productivity losses in both their paid and unpaid work. Absenteeism, where individuals take time off due to mental health issues, is a major contributor to economic loss. For younger people under the age of 25, the cost of absenteeism is estimated to be $1,419.55 per person per year. This cost increases for those aged 25 and over, reaching $3,066.81 per person per year. Additionally, presenteeism, where individuals continue working but at a reduced capacity due to mental health challenges, further contributes to lost productivity. This highlights the critical need for early intervention and support for individuals with psychological distress to minimize the economic impact [101].

Mental health-related hospitalisations result in further productivity losses. Each hospitalisation episode for individuals under 25 years of age incurs an absenteeism cost of $129.05, whereas for those aged 25 and over, the cost is $278.80 per episode. These figures emphasize the importance of not only preventing mental health crises that lead to hospitalisation but also ensuring that adequate support systems are in place to reduce the need for hospital admissions [102].

Premature mortality due to mental health conditions, particularly suicide, results in significant economic losses. Using a human capital approach, the estimated productivity loss per death is $33,552.96 for those under 25 and $72,488.31 for those aged 25 and over. This underscores the urgency of addressing mental health issues and preventing premature deaths, particularly among younger individuals, who have the potential for many productive years ahead [102].

In addition to paid work, mental health conditions also affect individuals' ability to perform unpaid work, such as household tasks and caregiving responsibilities. The annual cost of absenteeism from unpaid work due to psychological distress ranges from $712.59 to $1,144.88. These costs reflect the broader impact that mental health issues can have on family and community functioning, as well as the need for support in managing daily responsibilities [101].

Carers of individuals with mental health conditions also face productivity losses, as they often need to take time off work or reduce their hours to provide care. The absenteeism costs for carers are estimated to be $681.38 per person for carers under 25 and $1,472.07 for those aged 25 and over. This data highlights the hidden costs of mental health conditions that extend beyond the individuals affected and into their support networks, further emphasizing the need for comprehensive mental health services and support for carers [101].

Mental Health Co-Morbidities [103]

Individuals with arthritis experience higher levels of psychological distress. The data from the National Health Survey 2023 finds that 25.2% of people with arthritis report high levels of distress, while 37.4% report very high levels of distress. This indicates that arthritis is significantly associated with higher psychological distress, likely due to chronic pain, reduced mobility, and the impacts of long-term management on quality of life.

People with asthma also experience notable psychological distress. The data indicates that 19.1% of individuals with asthma report high psychological distress, while 25.1% experience very high levels. Breathing difficulties and the management of asthma, particularly during exacerbations, can be anxiety-inducing and contribute to higher distress levels.

For those with back problems, 29.0% report high levels of distress, and 41.0% report very high levels of distress. Back pain, especially chronic pain, can severely impact daily functioning, leading to increased mental strain, anxiety, and depression. These findings highlight the mental health burden faced by individuals with chronic musculoskeletal issues.

COPD is closely linked with high levels of psychological distress. The data shows that 32.8% of people with COPD experience high levels of distress, and 41.0% report very high levels. The chronic and progressive nature of COPD, coupled with breathing difficulties and reduced physical activity, can lead to significant emotional and psychological strain.

In individuals with diabetes, 9.9% report high levels of psychological distress, and 13.8% report very high levels. While these rates are somewhat lower than for other conditions, diabetes management can still contribute to distress, especially in cases of complications or when lifestyle changes are required. People with heart, stroke, and vascular diseases report high levels of psychological distress, with 32.1% experiencing high distress and 32.8% experiencing very high levels. Cardiovascular conditions are life-threatening and often require significant lifestyle adjustments and long-term medication, contributing to heightened anxiety and depression.

Prevalence of behavioural and biomedical risk factors [103]

People with mental health conditions remain more likely to smoke than the general population. 39.8% of individuals with mental and behavioural conditions are daily smokers, compared to the overall Australian average of 18.6% for people aged 18 years and over**.** Alcohol consumption patterns also differ for those with mental health conditions. While 30.1% of people with mental and behavioural conditions exceed alcohol consumption guidelines (more than 10 drinks per week), compared to the overall population average of 17.8%**.** Physical inactivity is another significant risk factor for people with mental health conditions. The data indicates that 30.1% of individuals with mental and behavioural conditions did not meet physical activity guidelines, compared to 27.0% for the general population. Obesity remains a critical concern for people with mental health conditions. 33.6% of individuals with mental and behavioural conditions are classified as obese (with a BMI of 30 or above), compared to 22.2% of the general population. Data shows that individuals with mental and behavioural conditions are more likely to experience high blood pressure compared to the general population. Specifically, 32.8% of people with mental health conditions have high or very high blood pressure (from 140/90 mmHg or higher), compared to 28.2% for the overall population aged 18 and over.

Mental Health Hospitalisations [104]

In 2021-22, there were 7,820 hospital admissions for mental health disorders among residents in the NBM region. The hospitalisation rate for mental health disorders in NBM (2,093.9 per 100,000 persons) was notably higher than the NSW average of 1,812.1 per 100,000 persons, indicating a greater burden of mental health-related hospitalisations in the region.

The data on mental health-related emergency department visits for the Nepean Blue Mountains region shows a fluctuating trend from 2013 to 2023. In 2013-14, the crude rate for total mental health presentations was 1,267.8 per 100,000 persons, which increased to a peak of 1,370.6 per 100,000 in 2014-15. Following this there was a gradual decrease, with the rate dropping to 1,152 per 100,000 by 2017-18, marking the lowest point in the given period. The rate rose again slightly after 2018-19, reaching 1,326.6 per 100,000 in 2020-21 before decreasing to 1,275.5 per 100,000 in 2021-22. By 2022-23, the rate had risen slightly again to 1,313.9 per 100,000.

In comparison to New South Wales, the NBM region generally recorded lower rates of mental health-related ED presentations. In 2013-14, the rate for NSW was 1,222 per 100,000, slightly lower than NBM's rate of 1,267.8. However, from 2014 onwards, the rate for NSW began to climb more steeply, peaking at 1,505.6 per 100,000 in 2020-21, significantly higher than NBM's rate during the same period. Although the overall NSW rate dropped slightly to 1,383.1 per 100,000 in 2021-22 and 1,398.3 in 2022-23, it remained consistently higher than the NBM rate.

There is a significant disparity in mental health-related ED presentation rates between Aboriginal and Non-Aboriginal populations from 2013 to 2023. The crude rate for Aboriginal persons has consistently been much higher than that of non-Aboriginal persons. In 2013, the rate for Aboriginal individuals was 2,703.3 per 100,000 population, compared to 1,107.4 for non-Aboriginal individuals. Over the years, the rate for Aboriginal persons steadily increased, peaking at 5,723.9 per 100,000 in 2020/21 before slightly declining to 5,455.5 in 2021/22, and then rising again to 5,734.0 in 2022/23. In contrast, the rate for non-Aboriginal individuals rose more gradually and remained relatively stable, from 1,107.4 per 100,000 in 2013 to 1,216.2 in 2022/23.

Eating Disorders [105]

As of June 2019, an estimated 15,200 individuals (3.95% of the population) in the region were affected by eating disorders. 9,700 females (2.52%) and 5,500 males (1.43%) were identified as having an eating disorder. The distribution of specific eating disorders in the NBM region was as follows: Anorexia Nervosa affected 0.11% of the population, Bulimia Nervosa 0.46%, Binge Eating Disorder 1.85%, and Eating Disorder Not Otherwise Specified impacted 1.52% of the population. When comparing these figures to other Primary Health Networks, the NBM PHN's prevalence is close to the national average of around 4%. However, some regional disparities exist across Australia. North Western Melbourne PHN had one of the highest estimated prevalence rates, with approximately 26,000 individuals affected (4.34% of the population). In contrast, Northern Sydney PHN, a comparatively wealthier region, had a lower prevalence, with around 19,000 individuals affected (3.73% of the population). Western NSW PHN, a more rural area, saw a prevalence rate of around 3.82%, like NBM PHN, though fewer individuals were affected due to the smaller population size (about 10,000 individuals).

In terms of gender breakdown, females in all PHNs, including NBM, consistently show higher rates of EDs than males, aligning with national trends where eating disorders are more commonly reported among women. Binge Eating Disorder tends to have the highest prevalence among the different types of EDs, reflecting a broader trend seen nationwide. Overall, while the NBM region's eating disorder prevalence mirrors the national average, the region faces a significant burden, particularly among females.

Mental Health Burden in Aboriginal and Torres Strait Islander Population [106]

The National Aboriginal and Torres Strait Islander Survey 2018-19 reports that 24% of Aboriginal and Torres Strait Islander people aged 2 years and over live with a long-term mental health condition. Anxiety and depression are the most reported conditions, with prevalence higher among females than males—21% of females reported experiencing anxiety or depression compared to 12% of males.

Additionally, the National Aboriginal and Torres Strait Islander Health Survey 2018-19 indicates that 31% of Aboriginal and Torres Strait Islander adults aged 18 and over experience high or very high levels of psychological distress. After adjusting for age differences, Aboriginal and Torres Strait Islander adults are 2.3 times more likely to experience these distress levels compared to non-Indigenous adults. Research from the Sax Institute's 45 and Up Study, which analysed a cohort of middle-aged and older residents in NSW, found that high psychological distress was nearly three times more common among Aboriginal and Torres Strait Islander participants than their non-Aboriginal and Torres Strait Islander counterparts. However, the primary drivers of this distress—poorer physical health (including multi-morbidity, physical disability, and functional limitations), lower social support, and reduced socioeconomic status—were similar for both groups. The study highlighted that differences in distress prevalence between Aboriginal and Torres Strait Islander and non-Indigenous people are largely due to higher rates of physical morbidity and disability in the Indigenous population. The authors emphasized the need for increased focus on primary prevention, better screening for psychological distress, and stronger integration of social and emotional wellbeing within primary care and chronic disease management.

Mental Health Burden in Culturally and Linguistically Diverse Communities [107]

The significant presence of mental health issues within CALD communities in the NBM region is highlighted by the Breaking Barriers Bringing Understanding (3BU) project. This project reported high levels of depression and anxiety within these communities, particularly related to the complex migration and resettlement experiences many face. Factors such as traumatic pre-migration events, including violence, persecution, and forced displacement, often contribute to these mental health challenges. Post-migration stressors, such as financial insecurity, unemployment, social isolation, and family breakdown, exacerbate the difficulties in adapting to life in Australia. Additionally, acculturation stress—the psychological impact of navigating between maintaining cultural identity and integrating into Australian society—further compounds mental health problems.

Compounding these issues, the stigma surrounding mental health within CALD communities presents a substantial barrier to accessing care. In many cultures, mental health conditions such as depression and anxiety are viewed as personal weaknesses or family dishonour, making individuals reluctant to seek help. This stigma often prevents open conversations about mental health and discourages those in need from accessing services, leaving conditions untreated. Language barriers and a lack of culturally appropriate services deepen the gap between CALD communities and mental health support. Many people are unaware of available services, and even when services exist, language difficulties make accessing and utilising these services challenging. In particular, the absence of information in languages other than English and the insufficient use of interpreters in healthcare settings further alienate CALD populations from seeking help.

Mental Health Burden in LGBTIQA+ Population [108, 109]

A significant portion of LGBTIQA+ individuals in NSW experience high or very high levels of psychological distress. Data shows that 55.9% of LGBTIQA+ adults fall into this category, while the figure rises to 81.5% among LGBTIQA+ young people, indicating a substantial mental health burden within these communities. Transgender and gender-diverse individuals, as well as those with disabilities, report particularly high levels of psychological distress, underscoring the additional challenges faced by these groups due to intersecting forms of marginalisation.

Several key risk factors contribute to poor mental health outcomes for LGBTIQA+ populations in NSW. Many individuals report experiencing verbal, physical, or sexual harassment, along with unfair treatment based on sexual orientation, gender identity, race, or disability. These forms of discrimination are strongly associated with an increased risk of mental health disorders and suicidal behaviours. The prevalence of such mistreatment significantly heightens the likelihood of developing anxiety, depression, and suicidal ideation among LGBTIQA+ individuals.

Protective factors have been identified to reduce the impact of these risk factors. Family acceptance of LGBTIQA+ individuals has been shown to reduce the likelihood of mental health issues and suicidal behaviours. Additionally, a strong sense of belonging within the LGBTIQA+ community serves as a protective factor, helping to safeguard individuals against the adverse effects of discrimination and exclusion.

Mental Health Burden in Prison Population

The NBMPHN region is home to 4 correctional centres, 3 community corrections offices, and 1 Youth Justice Centre. According to the NSW Inmate Census of 2019, the number of individuals diagnosed with mental health issues in the prison population has significantly increased. In NSW, incarcerated individuals show higher prevalence rates of mental illness compared to the general population, with estimates indicating that 40% of prisoners have experienced mental health issues during their lifetime. This figure is even higher for female inmates, who report a prevalence of mental illness at a rate of 65%, compared to 36% for male inmates [110].

Research shows that incarceration can be a critical factor exacerbating pre-existing mental health conditions. The frequency and duration of incarceration, particularly for males, are associated with delays in receiving mental health diagnoses. Incarcerated individuals, especially Indigenous males, face higher risks of mental health issues, with Indigenous males being more likely to receive a mental illness diagnosis post-incarceration. The mental health needs of incarcerated individuals, particularly in juvenile detention centres, are exacerbated by a combination of social disadvantage, prior traumatic experiences, and substance use disorders. This has led to a higher prevalence of conditions such as anxiety, depression, and trauma-related disorders within the prison population [111].

Mental Health Burden in the Defence Population [112]

In the Nepean Blue Mountains PHN region, approximately 0.4% of people over the age of 15 are current ADF members, and 2.3% have a history of defence service, indicating a notable military presence in the area. Among the LGAs, Hawkesbury City has the highest presence of current serving ADF members, with 0.7% of its population engaged in regular or reserves service, while 2.8% have a history of defence service. The region is also home to two RAAF bases, RAAF Base Glenbrook, and RAAF Base Richmond, both of which contribute to the concentration of ADF personnel in the area [113] .

The prevalence of mental disorders among ADF members who transition out of full-time military service is notably high. Nearly half (46%) of transitioned ADF members meet the diagnostic criteria for a mental disorder within 12 months of leaving service. Common disorders include anxiety, depression, and alcohol-related issues, underscoring the vulnerability of this group during the transition phase.

Transitioned personnel also report significantly higher levels of psychological distress compared to serving members. This includes increased post-traumatic stress symptoms, depressive symptoms, and alcohol use issues, which are often intensified by the challenges of reintegrating into civilian life. Many transitioned ADF members experience multiple mental health issues simultaneously. Comorbidity rates are notably high, with more than half of those diagnosed with a mental disorder also reporting at least one other mental health condition.

Service Needs

Demand for Commonwealth funded Mental Health Services [114]

From 2013-14 to 2022-23, there was a steady increase in both the number of patients and services provided by mental health providers in the Nepean Blue Mountains PHN region. The patient rate per 1,000 population rose from 96 in 2013-14 to 117 in 2022-23. Similarly, the service rate per 1,000 population increased from 421 in 2013-14 to 521 in 2022-23, indicating a continuous demand for mental health services over this period.

General Practitioners consistently served the highest number of patients each year. The patient rate for general practitioners increased from 79 per 1,000 population in 2013-14 to 106 in 2020-21. General practice data indicates in the 15 months prior to May 2023, 17,320 (4.60%) active patients had a Mental Health treatment plan completed. 5,345 (1.42%) mental health treatment plan reviews and 14,361 (3.81%) mental health consults were conducted. Clinical psychologists also experienced growth, with the patient rate rising from 17 per 1,000 population in 2013-14 to 18 in 2022-23.
Other psychologists saw an increase in their patient rate from 26 per 1,000 population in 2013-14 to 34 by 2017-18. Psychiatrists maintained a stable patient rate, ranging from 17 to 22 per 1,000 population throughout the period.

Service rates for general practitioners, clinical psychologists, and other psychologists also followed an upward trend, reflecting increased service provision. For example, clinical psychologists' service rate grew from 75 per 1,000 population in 2013-14 to 97 in 2022-23, while the service rate for general practitioners rose from 140 to 185 during the same period.

There was a notable increase in services provided by all mental health provider types between 2019-20 and 2020-21, likely due to the temporary expansion of service through the Medicare benefits schedule to address needs arising from natural disasters and the COVID-19 pandemic.

Year	Total Services
2013-2014	149,581
2014-15	162,255
2015-16	172,273
2016-17	182,019
2017-18	189,180
2018-19	196,088
2019-20	200,317
2020-21	218,492
2021-22	204,585
2022-23	201,856

The NBM Community Health and Wellbeing Survey showed that among respondents who reported a mental health concern in the past two years but did not access a mental health service despite believing they should have, 58% cited cost as the biggest barrier. Other significant barriers included wait times (49%), lack of awareness of available services (41%), and stigma or fear of being judged (29%) [2]. Of the respondents, 45% reported experiencing a mental health crisis. Among them, 31%

sought help from a mental health professional, 27% from their GP, and 12% did not seek any help. When rating the response of the crisis service, 19% described it as excellent, 54% as good or fair, and 13% as poor or very poor. Additionally, 67% of those who received initial care reported receiving some form of follow-up care or support [2].

Mental Health Related Prescriptions [7]

The mental health-related prescription rates for the NBM region have consistently followed a similar trend to the overall NSW mental health prescription rates, though they have generally remained slightly below the state average. In 2017-18, NBM recorded 1520 mental health-related prescriptions per 1,000 population, compared to the overall NSW rate of 1549 prescriptions per 1,000 population.

By 2019-20, the gap began to narrow. NBM reached a mental health prescription rate of 1651 per 1,000 population, while the NSW-wide rate stood at 1695 per 1,000 population. The increase in NBM's mental health prescription rate indicates a growing demand, aligning more closely with the broader state trend.

Most recently, in 2022-23, NBM's mental health prescription rate climbed to 1735 prescriptions per 1,000 population, closely trailing the NSW average of 1760 prescriptions per 1,000 population. Although still slightly lower, the Nepean Blue Mountains region has largely kept pace with the rising mental health prescription rates across the state.

Mental Health Nurse Incentive Program

In 2018/2019, 182 clients received services through the Mental Health Nurse Incentive Program (MHNIP). The number of clients remained stable in 2019/2020 and 2020/2021, despite the challenges posed by the COVID-19 pandemic. By 2021/2022, the number of clients receiving services increased to 244. However, in 2022/2023, there was a slight decrease, with 222 clients receiving services, and by 2023/2024, the number had further reduced to 185.

The MHNIP, delivered by mental health nurses in collaboration with general practitioners (GPs), provides essential clinical support to individuals with severe and persistent mental illness. GPs on the Clinical Council have expressed that MHNIP services are highly valued, but overall, there is an insufficient number of services available, and the distribution of these services is unequal across the region. Consultation with mental health nurses delivering MHNIP services highlighted several key issues [115]:

- The therapeutic relationship between the consumer and mental health nurse is fundamental to effective service delivery.
- Long-term therapeutic relationships, employing a variety of evidence-based therapies, help keep consumers out of hospitals and reduce the need for Community Treatment Orders.
- Consumers with complex trauma or post-traumatic stress disorder (PTSD) may not engage effectively with Local Health District community mental health services but often benefit from ongoing therapeutic relationships with mental health nurses.
- In addition to their therapeutic role, mental health nurses provide clinical care coordination, monitor mental states, contribute to medication reviews, and consider the physical health needs of clients. Their holistic approach allows them to meet multiple needs at once.

- For some consumers, long-term therapy enables them to manage their own lives more effectively.
- Mental health nurses offer stability and continuity of care, which is crucial for managing severe mental health conditions.

Referrals across the region have been unevenly distributed, and attracting and retaining credentialed mental health nurses remains a significant challenge, particularly in under-serviced areas like Lithgow. Developing a stable and sustainable credentialed mental health nurse workforce is critical to improving access to services for individuals with severe and complex mental health issues in the region.

Coordination of Care [9]

Mental health services in the region are impacted by fragmentation in service delivery. Stakeholder consultations have identified several issues related to this fragmentation including:

- The episodic nature of mental health care and a lack of coordination, integration, and follow-up between acute and primary mental health services are prevalent. Gaps in care coordination, referral pathways, and case management—including public, private, clinical, and non-clinical services—limit the delivery of consumer-centred care that meets individual needs rather than being based on available services.
- There is insufficient service coordination and linkage to support smooth transitions between services, such as stepping up or stepping down in care levels.
- Consumers with complex trauma require long-term, integrated care across multiple providers, including GPs, psychiatrists, mental health nurses, and psychologists, to support their recovery journey.
- A lack of connection to GPs for a significant number of consumers results in the absence of a regular point of care or a 'medical home.'
- Several consumers lack carer support, making them particularly vulnerable, especially older adults, who require more coordinated care.
- There is insufficient coordination between outreach services and Nepean Hospital for managing acute mental health cases.
- Coordination and sharing of information between GPs and Community Mental Health on physical health screenings is limited.
- A multidisciplinary approach to care, including better information sharing between public and private sectors, is needed to improve care quality.
- Non-governmental organisations (NGOs**)** often lack access to consumer mental health information, creating gaps in service continuity.
- Multiple entry points into the tertiary mental health system, without the involvement of a GP, can undermine continuity of care and follow-up after discharge. This can create challenges for GPs, including:
    - Determining when patients are discharged.
    - Ensuring follow-up care is provided.
    - Establishing lines of responsibility for follow-up care.
    - Identifying when care should transition back to the GP.
- Case workers or case management are needed to assist patients in accessing and coordinating their care, particularly regarding physical health services.

The NBM Community Health and Wellbeing Survey indicates that of the respondents who sought mental health care during a mental health crisis, only 67% received follow up care or support [2].

Psychiatry Service Gaps [9]

Mental health services in the region are affected by fragmentation, as identified through stakeholder consultations. These consultations highlighted several issues related to the episodic nature of care, ineffective coordination, and lack of integration between acute and primary mental health care services. There is insufficient coordination of referral pathways and case management, particularly between public and private sectors, leading to challenges in providing consumer-centred care. Furthermore, the lack of seamless service transitions, especially in step-up or step-down care, exacerbates this fragmentation. Consumers with complex trauma require long-term integrated care involving GPs, psychiatrists, mental health nurses, and psychologists, but such coordination is often missing. Many consumers are not linked to a GP and lack a consistent "medical home," making them vulnerable. Additionally, there is inadequate coordination between outreach areas and Nepean Hospital for acute mental health issues. The lack of information sharing between GPs and community mental health services, particularly regarding regular screening for physical health issues, further impacts care. The fragmentation also affects the involvement of non-governmental organisations (NGOs), which lack access to crucial consumer mental health information. The presence of multiple entry points into the mental health system other than through GPs erodes continuity of care, presenting challenges for GPs in identifying discharge points and ensuring appropriate follow-up.

Gaps in Service Provision [9]

Stakeholders have identified several gaps in the provision of mental health services across the region. One major concern is the lack of awareness among service providers about other services available in the community, as well as insufficient understanding of how different mental health services are integrated. This lack of knowledge affects referral pathways and can lead to service duplication. There is also a notable lack of evidence-based treatment options for consumers with complex trauma, who are often diagnosed with personality disorders.

Additionally, the region faces a shortage of step-down facilities that provide care for patients transitioning from acute to sub-acute or non-acute care, as well as from severe to moderate mental illness. For consumers with dual diagnoses of mental health and drug or alcohol (D&A) issues, appropriate integrated service options between Local Health Districts (LHD) and primary care are limited. Subsidized group work, such as mindfulness-based stress reduction, is insufficient, and the provision of psychosocial services is inconsistent, particularly in areas like the Blue Mountains, Lithgow, and Hawkesbury.

Specific community-based services for post-natal depression are also lacking. Stakeholders have suggested that advance statements for mental health, which could be uploaded to My Health Record, would help avoid consumers having to repeatedly retell their story when engaging with new clinical services, thus preventing them from reliving trauma. There is a need for approaches that provide both consumers and carers with a broad, clear understanding of available services, what those services do, and the relevant referral or access pathways.

Access to Housing and Accommodation [9]

Access to housing and accommodation for individuals with mental illness is widely regarded as inadequate across the NBM region. Research and stakeholder feedback have highlighted a significant shortage of housing options, which is adversely affecting the wellbeing and treatment outcomes for people with mental health issues. One major concern is the lack of appropriate accommodation for homeless individuals, which often leads to their discharge from hospitals into unstable housing situations, increasing the likelihood of readmission. Additionally, the absence of available housing frequently results in unnecessarily extended hospital stays, commonly referred to as "social admissions".

The region also faces a shortage of stable, long-term, quality accommodation that provides social support and is economically sustainable, such as services like Housing and Accommodation Support Initiative (HASI). Stakeholders have noted that there is a lack of outreach mental health services specifically targeted at homeless individuals, as well as insufficient emergency accommodation options for those in immediate need. These gaps in housing and accommodation services present significant barriers to recovery and long-term stability for people with mental illness in the region.

Capacity building to support carers and consumers [9]

Capacity building to support carers and consumers in the Nepean Blue Mountains region is a critical need, as respite care and other forms of support may be inadequate. Stakeholders have raised concerns about the level of inclusion and support provided to carers and families. Key issues include insufficient respite options and the lack of information provided to carers about the mental health condition of those they care for, which affects their ability to provide safe and supportive environments. There is also inadequate support for financial management, leading to the accumulation of debt that jeopardizes living expenses and housing stability, increasing stress, and potentially leading to homelessness.

Education for consumers regarding their prescribed medications, particularly regarding side effects, is also noted as insufficient. Additionally, stakeholders highlighted the need for local mental health care support groups tailored to both carers and consumers.

The 2021 ABS Census data indicates that in the region, a significant number of people provide unpaid assistance to individuals with disabilities or health conditions. In the Blue Mountains, 8,931 people (13.8%) provide such care, while Hawkesbury has 6,323 (11.6%), Lithgow 2,306 (13.2%), and Penrith 18,815 (11%), all exceeding or closely aligning with the state and national rates of 11.5% and 11.9%, respectively [116].

Workforce Capacity [9]

Workforce capacity for mental health services in the Nepean Blue Mountains region could be significantly improved through targeted training and skills development. Stakeholders have highlighted several concerns related to the current capacity of the workforce. These include the need to increase GPs' knowledge of available clinical and non-clinical services and their referral pathways, as well as their ability to identify when consumers require more intensive treatments beyond those offered through Psychological Therapy Services or Medicare, such as the Mental Health Nurse Incentive Program (MHNIP). There is also a recognized need for trauma education

for health professionals, along with enhanced GP education regarding dual diagnosis of drug and alcohol issues and severe mental illness, and geriatric depression.

Another concern is the insufficient support and supervision for private therapists working with dual diagnosis cases. Additionally, the region lacks peer workers who could assist in improving consumer health literacy and providing psychosocial support, both during acute care and in the community. Peer workers currently represent only 5% of consumer support roles and 14% of carer support roles, falling short of the targets set by the National Mental Health Service Planning Framework. The need for support workers, especially those available after hours and on weekends, is also significant.
Developing referral options or service algorithms for allied health professionals, including pharmacists, could help increase their capacity to direct clients with mental health concerns toward appropriate local services. This would enhance their role in providing effective mental health support.

In addition, stakeholders have identified a lack of understanding regarding the mental health needs of Aboriginal and Torres Strait Islander communities. Mental health services need to engage with these communities in a culturally sensitive manner, with guidance from Elders to build trust. There is a shortage of clinical positions specifically designated for Aboriginal and Torres Strait Islander mental health, and a lack of recognition of the stressors affecting these populations, such as intergenerational trauma. Aboriginal and Torres Strait Islander workers often face high community expectations, yet there are insufficient workers to meet the demand. These workers also experience significant burnout due to heavy workloads and limited support.

Culturally and linguistically diverse (CALD) populations in the region also face unique workforce-related challenges. Clinicians need more education on psychosomatic disorders prevalent in the CALD community, and GPs require better training to work with these populations, particularly regarding cultural understanding. The lack of transcultural competency and bilingual health workers further complicates service delivery, as does the inadequate use of telephone translation services. Increased mental health literacy and education for CALD community organisations could improve their capacity to support their communities effectively.

Culturally Safe Mental Health Services

There is a significant lack of culturally safe mental health services available to Aboriginal and Torres Strait Islander people in the Nepean Blue Mountains region. These services are generally not seen as culturally secure or supportive of the specific needs of Aboriginal and Torres Strait Islander communities. Aboriginal and Torres Strait Islander staff comprise less than 1% of the New South Wales Mental Health Workforce. In the Nepean Blue Mountains region, the target was set for 11.7 Aboriginal and Torres Strait Islander staff members (1 Aboriginal Mental Health Worker per 1,000 population). However, as of 2016, the region was meeting only 26% of this target, with just three Aboriginal and Torres Strait Islander Mental Health Workers and Clinical Leaders employed [117].

Community consultations revealed several key issues related to the availability of culturally appropriate services. Concerns include the lack of Aboriginal and Torres Strait Islander programs led by Aboriginal and Torres Strait Islander people, the shortage of culturally appropriate services, and the insufficient number of Aboriginal and Torres Strait Islander workers in identified roles,

including psychiatrists and psychologists. There is also a lack of focus on and provision of early intervention services. Moreover, Aboriginal and Torres Strait Islander Controlled Medical Services are not available in Lithgow, Hawkesbury, and Blue Mountains LGAs, and there is a need for improved dual diagnosis mental health and drug and alcohol services [118].

Further consultations with Aboriginal and Torres Strait Islander communities across the region confirmed these concerns and highlighted additional issues. There is a need for regular Aboriginal and Torres Strait Islander health clinics or forums in local hospitals and community health centres, as well as alternative programs that build on cultural strengths to support individuals in developing positive coping strategies. A holistic, person-centred approach to mental health, which examines issues from a whole-person perspective, is essential to identify appropriate solutions.
Stakeholders also emphasized the importance of developing partnerships with non-health sectors, such as education, housing, and recreation, to pool resources and address the broader determinants of mental health. Intergenerational trauma needs to be addressed through innovative, locally developed programs. Additionally, systemic and institutional racism in health services must be addressed to build trust with Aboriginal and Torres Strait Islander communities [9].

Preventative services, particularly for children and young people, are necessary to address underlying issues before they escalate into crises. The lack of dual diagnosis units for mental health and alcohol or other drugs often results in individuals being transferred between detox and psychiatric units, creating gaps in care. Short funding cycles also hinder the ability to build trust and provide consistent support. There is a strong need for Aboriginal and Torres Strait Islander community hubs in each LGA, as well as Aboriginal and Torres Strait Islander controlled health services. These services must adopt a culturally appropriate, holistic, and family-centred approach to emotional health and well-being to effectively meet the needs of these communities.

In addition to these challenges, communication issues among CALD populations have also been identified as significant barriers to accessing mental health services. These include a lack of awareness of support services in relevant languages, inadequate mental health educational resources, and the absence of CALD-specific directories of services. Stakeholder consultations have raised concerns about the lack of accessible services outside of clinical settings and the need for greater education in relation to mental health stigma and discrimination within CALD communities. Furthermore, there is a widespread lack of understanding about how to navigate the mental health system and the supports available, as well as a lack of mental health-related resources in different languages. Addressing these communication gaps is crucial to improving access to mental health services for CALD populations and ensuring they receive the necessary support [9, 107].

Service Accessibility for Vulnerable Populations

Access issues for vulnerable populations in the Nepean Blue Mountains region highlight significant disparities, particularly for Aboriginal and Torres Strait Islander people and Culturally and Linguistically Diverse (CALD) communities. Aboriginal and Torres Strait Islander people face substantial challenges in accessing Medicare-funded psychological and psychiatric services. National data from 2017-18 shows that they were less likely than non-Indigenous Australians to claim Medicare for psychologist care (144 per 1,000 compared to 215 per 1,000) and psychiatric

care (56 per 1,000 compared to 96 per 1,000). This indicates a disparity in access to specialist mental health services, which could be attributed to factors such as cultural barriers, geographic isolation, and a lack of culturally safe service options [119].

However, Aboriginal and Torres Strait Islander Australians are more likely to access mental health services at the primary care level. For example, in 2015-16, they used the Access to Allied Psychological Services (ATAPS) program at 4.3 times the rate of non-Indigenous Australians. Between 2010 and 2015, they had mental health-related issues managed by GPs at 1.2 times the rate of non-Indigenous Australians, and in 2017-18, they accessed specialized community mental health services at 3.3 times the rate of contacts compared to non-Indigenous Australians. This suggests a higher reliance on GPs for mental health care, reflecting either limited access to or trust in specialist services. Improving service accessibility for Aboriginal and Torres Strait Islander populations requires expanding culturally appropriate services and reducing barriers to specialist care [119].

CALD communities also face various challenges in accessing mental health services. Several support needs have been identified, such as the need for suicide prevention, outreach services, and post-natal support for depression. Stakeholders have raised concerns about the lack of transcultural services for suicide prevention across all LGAs and the insufficient mental health outreach services tailored to CALD populations. Additionally, there is a shortage of culturally appropriate psychiatric and psychological services and a general lack of cultural competency among service providers. The absence of CALD clinicians and the underutilisation of interpreter services further exacerbate these issues [107].

Post-natal support services for individuals experiencing post-natal depression are particularly lacking, which is critical for mental health recovery in CALD communities. Additionally, stigma surrounding mental illness, unfamiliarity with the mental health system, and reluctance to use medications within some CALD communities contribute to barriers in accessing services. Mental health literacy remains low, and restrictive service criteria do not always align with the specific needs of CALD populations [107, 120].

LGBTIQA+ communities in the region face similar barriers to accessing mental health services. While there are some social and support groups in areas like Katoomba, the Blue Mountains, and Penrith, stakeholders report that many LGBTIQA+ individuals do not receive adequate mental health support [121].

There is a noted lack of psychiatric services for young people, inadequate intervention programs for children under 12 with complex needs, and limited support for individuals aged 18–25. The limited availability of Medicare-subsidised and PHN-funded psychological therapy services exacerbates the issue, as those with long-term moderate to severe mental illness often use up their available sessions quickly. Vulnerable young people, particularly those in out-of-home care, the juvenile justice system, or identifying as LGBTIQA+, face additional barriers in accessing appropriate mental health care.

Service Needs for Prisoners Upon Release

Service needs for prisoners upon release remain significant. Prisoners transitioning back into the community face high mental health needs, which are currently unmet in a substantive and systematic way. Correctional services stakeholders in the Nepean Blue Mountains region have expressed concerns that there is insufficient aftercare for former inmates, particularly in the Lithgow LGA. Both the NBMPHN Clinical Council and NBMLHD Aboriginal and Torres Strait Islander Health workers have highlighted the lack of adequate support for individuals recently released from prison, noting the poor quality of available aftercare services [115]

Short-Term Focused Psychological Interventions

The NBMPHN Psychological Therapy Services, previously known as ATAPS, provide short-term support for individuals with mild to moderate mental health concerns, particularly those who identify with one or more under-serviced groups. This service allows eligible individuals to receive up to 10 therapeutic sessions per calendar year unless otherwise specified. The service is designed to assist community members who fall within one of 10 priority groups.

Between 2020 and 2024, the number of people accessing NBMPHN Psychological Therapy Services fluctuated. In 2020-21, 1,605 individuals accessed the service, which decreased to 1,415 in 2021-22. However, the demand rose to 1,865 in 2022-23 and further increased to 2,445 in 2023-24, reflecting a growing need for mental health support.

Feedback from service providers to NBMPHN highlights several gaps in the existing service structure. One significant issue is that most streams require participants to hold a health care card, limiting access for individuals experiencing temporary or sporadic financial crises who do not qualify. These individuals must then seek bulk-billing practitioners, who are often in short supply [122].

The availability of psychologists and Allied Health Professionals (AHPs) in the region is limited, resulting in long wait times and a scarcity of professionals who bulk bill. The introduction of the extended referral stream in 2018 aimed to address this by offering up to 49 hours of support over two years for individuals with moderate to severe mental illness, including those with trauma. This stream is intended for people over the age of 25, but there have been numerous requests for support for individuals under 25. Furthermore, as patients near the end of their two-year program, there has been a growing demand for ongoing support beyond the designated period.

The increased demand, particularly in the SOS suicide prevention stream and the extended stream, has exacerbated capacity issues, placing additional pressure on AHPs offering Psychological Therapy Services in the region [122].

Regional Variation in Service Provision and Availability

There are significant disparities in mental health service provision across the outer Local Government Areas LGAs of the NBM region, particularly in Lithgow and Hawkesbury. Stakeholders have expressed concerns about inadequate access to mental health services in these areas, which face unique challenges due to their regional locations.

In Lithgow and Hawkesbury, many mental health consumers are unable to afford the out-of-pocket costs for Medicare-subsidised private psychology services. Social isolation is a significant issue in these outer regional areas, further complicating access to care [9, 122, 123].

In the Hawkesbury LGA, the following issues have been identified:

- There is minimal mental health support, with Nepean Hospital serving as the primary mental health inpatient unit, which often experiences bed shortages.
- There is no dedicated drop-in space for mental health consumers or their families to seek help or information.
- Non-acute patients have no access to psychiatrists or medication review consultations.
- The Community Mental Health team in Windsor faces ongoing staffing capacity challenges, limiting service delivery.

In the Lithgow LGA, additional challenges include:

- Social determinants such as housing instability, lack of transportation, financial insecurity, and unemployment are major barriers to achieving good mental health.
- There is a lack of crisis support services for individuals in urgent need.
- Lithgow's geographical location, being at "the end of the train line," makes accessing mental health services difficult, with long travel times required for specialist care.
- Access to psychiatrists and clinical psychologists is limited, with long waiting lists and high gap payments. Transportation barriers also exist for those seeking specialist care outside of Lithgow.
- Katoomba Hospital, which is the closest mental health inpatient unit, is not easily accessible for Lithgow residents.
- Stakeholders perceive that Local Health District (LHD) specialist mental health services focus primarily on severe mental illness, making it difficult for individuals with less serious conditions to access care.
- There is limited awareness of support services, such as employment access, training, welfare, and housing support, for people with mental illness. These services are often overburdened due to the lack of specialist mental health services in the area.
- There are no effective mechanisms to escalate care for clients with deteriorating mental health, largely due to difficulties in accessing specialist mental health care when needed.

PSYCHOSOCIAL SUPPORT

Health Needs

Social Isolation [124, 125]

Social and geographical isolation significantly affects consumers in the NBM region, often excluding them from community participation, especially during periods of poor mental health. Several factors contribute to this issue, as indicated by data sources and recent community consultations. Stigma surrounding mental health was reported by consumers as a key barrier preventing them from engaging in social groups. The geographical layout of the NBM region, coupled with limited and infrequent transport options, exacerbates social isolation. Many mental health services, creative groups, and social activities are centralised in Penrith, making access difficult for those in outlying areas. Consumers across all four LGAs consistently highlighted the lack of regional peer support groups and engaging activities, particularly for individuals aged 25 to 65 who have lived experiences of mental health challenges.

The support of family, friends, religion, and culture plays a crucial role in the recovery process, but maintaining these connections becomes more difficult during periods of poor mental health. In the 65+ age group, an estimated 1,527 people are considered part of the NPS target cohort, further underscoring the need for accessible mental health services and community engagement opportunities in the region.

NDIS Transition [9]

The transition to the National Disability Insurance Scheme (NDIS) for individuals requiring psychosocial supports presents several challenges. One of the key barriers is finding the most suitable and beneficial supports for individuals requiring psychosocial assistance. Given the evolving requirements for psychosocial disability under the NDIS, individuals, and their caregivers often face difficulty understanding and accessing appropriate services. The evolving criteria and expectations for psychosocial disability under the NDIS mean that individuals must continually adapt to changing frameworks. This creates confusion and sometimes delays in receiving the necessary support. A significant gap in services to assist with preparing NDIS Access Requests has been noted. The prior National Psychosocial Support (NPS) service model did not include provisions for gathering evidence and preparing an Access Request, while the current Continuity of Support (CPS) model has had a higher success rate for NDIS transitions. However, this disparity highlights the need for broader access to services that help individuals prepare and submit Access Requests.

There is an average wait time of 12 weeks for responses to NDIS Access Requests. This delay often means that individuals leave or have already left programs like the Commonwealth-funded NPS before receiving a response, adding to the administrative burden of following up with those no longer engaged in the program. When individuals appeal or request a review of an ineligibility decision, it can take more than six months to receive a response, further delaying access to crucial services. A significant issue is the risk of disengaged participants not receiving the necessary support. Factors contributing to disengagement include hospitalization, homelessness, the episodic nature of their illness, and confusion or fear following the closure of Commonwealth-funded programs. Many individuals may avoid engaging with the NDIS due to these challenges.

Accurately identifying the reasons for disengagement is difficult, particularly given the uncontactable nature of many individuals within this cohort.

Mental Health Literacy [9]

Mental health literacy and awareness of available psychosocial services are consistently reported as lacking across the NBMPHN region. Consultations have highlighted a regional issue regarding limited knowledge of how to navigate the mental health service system. Consumers often express difficulty in accessing psychosocial support when needed. Surveys conducted within the mental health sector reveal a particularly poor understanding of the psychosocial services available locally. Recent changes, including the introduction of the NDIS and the discontinuation of Commonwealth-funded programs, have further exacerbated this confusion. Efforts are underway, such as the development of referral pathways by WHL to address psychosocial support across the region. While education initiatives are ongoing, there remains a need for improved understanding of referral pathways like HASI, CLS, and CPS, as well as the entry criteria for each.

Homeless Populations [9, 45]

Individuals facing housing instability or homelessness encounter significant barriers when applying for the NDIS. This population is highly likely to meet the eligibility criteria for the National Psychosocial Support (NPS) program due to the inherent complexities of their conditions and living circumstances. Homeless individuals frequently exhibit a high prevalence of mental illness, often paired with physical health conditions, which further complicates their situation. Poor engagement with mainstream health and social services persists in the Nepean Blue Mountains (NBM) region, exacerbating the challenges faced by the homeless population.

Service capacity within the homeless sector in the NBM region remains inadequate, particularly in terms of responding to mental health needs, as many service providers lack mental health first aid training. Recent consultations also revealed that only 7% of homelessness service providers in the region have direct contact with mental health services. Furthermore, research indicates that 75% of homeless individuals experience at least one mental health condition, in stark contrast to the 20% prevalence rate observed in the general population.

Compounding these issues, factors like housing instability make NDIS applications more difficult to navigate, making this cohort particularly suited for the NPS program. The NDIS's initial "teething problems" also failed to adequately address psychosocial needs, and the criteria set forth discouraged preventative mental healthcare. There is a lack of collaboration between mental health, drug and alcohol services, and the limited number of mental health facilities or Housing and Support Initiative (HASI) packages in the Penrith region further worsen the situation.
Additionally, poor housing conditions, including rough sleeping, exacerbate comorbid physical health conditions, such as diabetes and chronic illness, which are common among this group. The homeless population also faces stigmatization and shame, often preventing them from engaging with mainstream services. Homeless sector services often operate with minimal budgets and volunteer staff, further limiting their capacity to offer mental health support to the people they serve.
Recent data from the Head to Health services shows that between July 2023 and June 2024, 6.6% of patients who accessed the services experienced some level of homelessness, with 3.2% living in short-term or emergency accommodation, and 2% sleeping rough.

CALD Communities [9, 126]

CALD Communities in the NBM region face several barriers to accessing mental health services, including stigma, language barriers, and a lack of culturally appropriate services. A significant gap exists in bilingual mental health services, particularly in the Nepean Blue Mountains, where anecdotal evidence suggests that many individuals travel outside the region to access culturally appropriate care. This challenge is compounded by the shortage of bilingual general practitioners (GPs) and mental health professionals, which limits access to essential mental health treatments such as GP Mental Health Treatment Plans that are required for referrals to psychological therapy services. This particularly impacts CALD communities with low levels of English literacy, resulting in an over-representation at the Mental Health Services Triage and Assessment Centre (TAC) at Nepean Hospital.

There is also limited use of interpreters in primary care settings, which further marginalizes individuals from CALD backgrounds, particularly those with limited English proficiency. Feedback from the CALD needs assessment has highlighted the need for gatekeeper mental health training, especially for CALD carers, to improve recognition, management, and referrals across diverse community groups. Moreover, self-stigma within these communities often impedes individuals from seeking help, exacerbating the difficulties they face in accessing timely and effective care.

Employment and Volunteering Opportunities [9]

There is a notable lack of volunteering opportunities in the Nepean Blue Mountains (NBM) region, which could greatly benefit individuals with lived mental health experiences by enhancing their social and economic participation, improving life skills, and fostering stronger connections to the community.

Research and feedback from consumer consultations emphasize the need for increased access to volunteering opportunities, particularly for those potentially eligible for Commonwealth Psychosocial Support (CPS) programs. Specific concerns include a desire among consumers to contribute to their communities through volunteering, countering the perception that they are burdensome. Studies show that volunteering can significantly enhance social inclusion and economic participation for individuals with lived experience of mental health challenges.

Currently, 12.0% of the NBM population reports engaging in voluntary work, a decrease from 17.2% in 2016, largely attributed to the impact of COVID-19 restrictions. However, feedback from mental health consumers highlights a shortage of accessible volunteering opportunities that could help them build employment and life skills while also strengthening community ties.

Qualitative data also reveals a need for employers and volunteer organisations to receive education on mental health awareness and strategies for creating more inclusive environments.

Service Needs

Systems Reforms [124]

There are significant opportunities and challenges in reforming the mental health service system to help health professionals and consumers better navigate psychosocial referral options. Local consultations and available evidence have highlighted several critical issues within the current system. The psychosocial service system is often fragmented and confusing, both for health professionals and consumers. General practitioners (GPs) frequently struggle to determine which clinical presentations are appropriate for specific psychosocial services. Moreover, the referral criteria for these services are unclear, and there is no central triage point with the necessary expertise and system-wide reach.

One major concern is that consumers must repeatedly retell their stories due to a lack of meaningful connection between psychosocial services and clinical care. Additionally, the transitional policies and short funding cycles of psychosocial services lead to rapid scaling up and winding down of operations. This inconsistency disrupts the formation of therapeutic relationships and prevents services from maturing and improving their effectiveness over time.

The 2020 Productivity Commission Mental Health Report emphasizes the importance of improving access to psychosocial supports (Recommendation No. 17). It calls for a systemic shift in how these supports are planned and funded, recognizing their crucial role for consumers within the mental health system. The report also stresses the need to address the negative impact of short funding cycles, which limit the effectiveness of services, and to explore broader systemic reforms. These include changes to governance, integration and coordination of services, and workforce arrangements within the community mental health sector. Addressing these challenges will be essential to creating a more coherent, accessible, and effective mental health service system.

Limited Resourcing [124]

Consumer consultations have revealed a significant shortage of local mental health support services. The primary issues identified include limited government resources allocated to psychosocial programs, resulting in inadequate availability of services. Additionally, long waiting lists and ineffective demand management strategies further exacerbate access problems for those seeking mental health support. Short funding cycles also contribute to instability within the service system, often leading to a decline in the quality of care provided. These factors collectively highlight the need for increased resourcing and improved management of mental health services to better meet community needs.

Barriers to Access [9]

There is a recognised need to develop consumer-oriented pathways for accessing mental health services, such as implementing a soft entry hub model or drop-in centre. Current referral systems are seen as being more system-oriented rather than focused on the consumer, creating challenges for individuals seeking care. The concept of a soft entry point, like a hub or drop-in centre, was consistently identified as a solution across all LGAs. Additionally, geographic barriers, particularly transportation, continue to hinder access to services, further complicating the ability of individuals to receive timely and adequate care.

Culturally Safe Services [9]

There is a significant lack of investment in the Aboriginal and Torres Strait Islander workforce across both clinical and psychosocial services. Stakeholder consultations have highlighted two main issues: the shortage of Aboriginal and Torres Strait Islander staff in these key areas and the absence of cultural engagement frameworks. This shortfall makes it difficult to implement best practice solutions for attracting and retaining Aboriginal and Torres Strait Islander staff.

Hoarding and Squalor Services [127, 128]

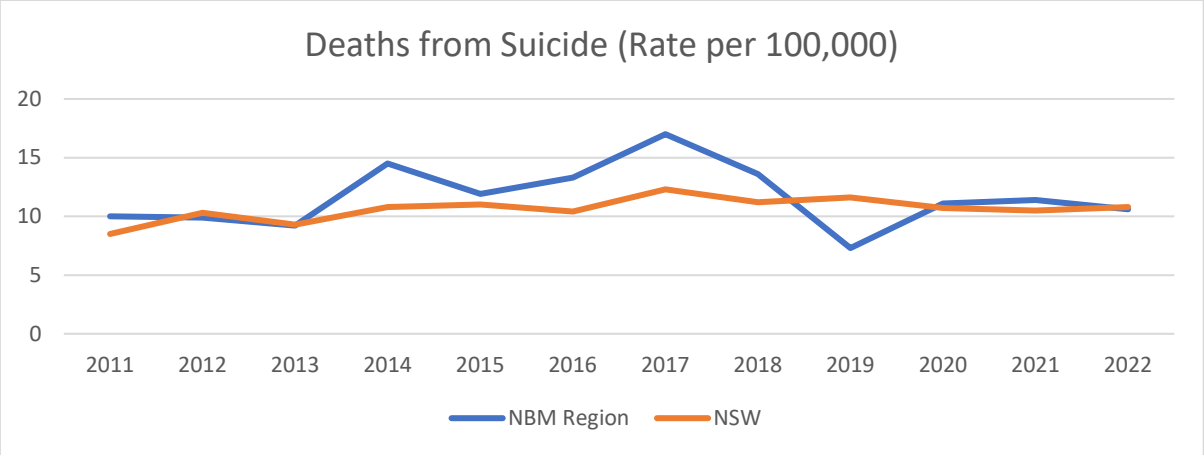
There are limited services available to assist individuals suffering from hoarding and living in squalor, despite the association between hoarding and severe mental health conditions. Data suggests that 12% of all fire fatalities in NSW involve individuals who were hoarders or living in squalor. Currently, there are few specific treatment options, with "Buried in Treasures" (offered by Catholic Care) being one of the only short-term programs available to address these issues.

SUICIDE PREVENTION

Health Needs

Deaths by Suicide

There were 41 deaths from suicide (10.6 per 100,000) in the Nepean Blue Mountains Region in 2022, this is a slight decrease from 44 (11.4 per 100,00) in 2021. Rates of death from suicide in the NBM region have fluctuated between 2011 and 2022 with the highest rate observed in 2017 with 63 deaths (17.0 per 100,000) this was followed by sharp decline, with the lowest rates in the region seen in 2019 with 29 deaths (7.3 per 100,000). The overall rate in NSW has remained consistent between 2011 and 2022, with the lowest rates in 2011 (8.5 per 100,000) and peaking in 2017 (12.3 per 100,000). The 46 deaths (12.5 per 100,000 persons) from suicide in the region in 2016 was the highest among metropolitan LHDs in NSW [129].



While PHN level data is only available up to 2022, NSW level data provides more up to date figures. As of August 2024, NSW recorded 621 suspected or confirmed suicide deaths. This figure is slightly lower than the comparable period in 2023, which recorded 638 deaths. Monthly suicide counts showed variability, with a general decline in 2024 compared to previous years, particularly in months such as March and July. The data highlights fluctuations in suicide rates across months, with no clear seasonal pattern. Adults aged 25-54 years represent most suicide deaths, with the 45-54 age group consistently showing high rates. Youth (18-24 years) accounted for fewer cases but remains a group of significant concern. Males represent a higher proportion of suicide deaths overall, with 478 out of 621 deaths in 2024, reflecting a consistent trend of higher male suicide rates. Greater Sydney accounted for 324 deaths, while the rest of NSW recorded 287 deaths. This distribution is relatively balanced, though Greater Sydney often records a slightly higher rate [130].

In 2022, suicide accounted for 4.6% of all deaths among Aboriginal and Torres Strait Islander people in NSW, with males experiencing a higher proportion of suicide deaths compared to females (6.5% for males and 2.5% for females). 24.5% of all suicide deaths were female and 75.5% were male. The suicide rate for Aboriginal and Torres Strait Islander males was 3.3 times higher than for Aboriginal and Torres Strait Islander females, with 46.3 per 100,000 deaths for males, and 14.0 per 100,000 for females. Both Aboriginal and Torres Strait Islander males and females experience suicide deaths at significantly higher rates than their non-Indigenous counterparts.

The suicide rate for Aboriginal and Torres Strait Islander males is 2.6 times that of non-Aboriginal males, while for females the rate is 2.5 times higher [131].

Intentional Self-Harm [132]

Across NSW, the rates of intentional self-harm hospitalisations increased from 73.2 per 100,000 in 2001-2022, reaching a high in 2015-2016 of 106.5 per 100,000, before declining to the current rate of 79.5 per 100,000 in 2022-2023. In 2022-23 there were 263 per 100,000 intentional self-harm hospitalisations for Aboriginal people in NSW, a rate 3.3 times higher than the average NSW rate.

A hospitalisation refers to an admission to a hospital and does not include presentations to an emergency department where there was no admission.

In the Blue Mountains LGA, rates of intentional self-harm hospitalisations have fluctuated significantly between 2001/02 and 2022/23. The highest recorded rate was recorded in 2006/07 at 121.5 per 100,000 with a notable drop to 61.6 in 2018/19 and then a slight increase to 73.8 per 100,000 in 2021/22. Hawkesbury LGA saw an overall rise in intentional self-harm hospitalisation rates from 43 per 100,000 in 2001/02 to 105.9 in 2020/21. A slight decrease was observed in 2021/22 at 94.3 per 100,000. Lithgow LGA had the highest rates of intentional self-harm hospitalisations across all years, starting at 149.9 in 2001/02, peaking in 2005/06 at 161, and experiencing a substantial decrease to 49.6 in 2019/20. Rates remain low in 2022/23 at 57.1 per 100,000. Penrith LGA's rates steadily increased from 44.7 in 2001/02 to a high in 132.8 in 2007/08/ The rates stabilised after 2009, with fluctuations around 100-110 per 100,000 in the following years. The rate currently sits at 96.5 per 100,000 in 2022/23.

Rates of hospitalisation for intentional self-harm have been consistently higher in women than in men. Female self-harm hospitalisation rates in the NBM region, reached a peak of 149.1 per 100,00 in 2016/17, followed by a decrease in subsequent years, reaching 107 per 100,000 in 2022/23. The highest rate of self-harm hospitalisation among males in the NBM region was in 2016/17 at a rate of 85.1 per 100,000. The rate decreased significantly in 2017/18 to 58.8, followed by a steady increase until 2020/21 when it reached 83 per 100,000, before falling again to 49 in 2022/23.

In 2022/23 the rates of intentional self-harm hospitalisation in NSW for Aboriginal and Torres Strait Islander females were 3.3 times higher than the non-Aboriginal females, 287.2 per 100,000 vs 88.2 per 100,000. The rate is 5.1 times higher for Aboriginal and Torres Strait Islander males, 241.4 per 100,000 vs 47.0 per 100,000 respectively.

The self-harm hospitalisation rates for females in the 15-24 age group were consistently higher than for males. Rates for females 15-24 years peaked at 421.9 per 100,000 in 2020/21, nearly double the rate in most previous years. After this peak, the rate declined to 370.8 in 2021/22 and further to 294.4 in 2022/23. The self-harm hospitalisation rates for males aged 15-24 years remained relatively stable between 2013/14 and 2020/21, fluctuating within a range of 124.7 to 137 per 100,000. The highest rate occurred in 2015/16 at 137 per 100,00 followed by another peak in 2018/19 at 134.1 per 100,000. From 2020/21, there was a notable decrease, with rates dropping to 133.5 to 87.2 by 2022/23, making this the lowest rate since 2013/14.

Risk Factors Associated with Suicide

In 2020, more than 90% of suicide deaths in Australia were identified as having at least one risk factor reported with both psychosocial risk factors and mental health and behavioural disorders present in more than two thirds of total suicide deaths. Psychosocial risk factors were most prevalent, occurring in 67.1% of all people who died by suicide, followed closely by those with mental and behavioural disorders at 65.6%. Mood disorders and substance use remain the first and second most common risk factors identified in suicide deaths (occurring in 40.3% and 29.3% of suicide deaths respectively).3.2% of all suicides noted risk factors related to the COVID-19 pandemic, with almost 60% (58.6%) of these noting mood disorders as an associated cause, and over half (52.5%) noting problems related employment/unemployment as an associated cause [133].

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. 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). Data from AIHW suggests that in 2020, 25.8% of suicides in males had a recorded psychosocial risk factor related to relationship problems including separation and divorce. This was higher than for females at 20.2% [134].

In 2020, of the 3,139 coroner-referred suicide deaths in Australia, 67.1% 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 [134].

The most reported risk factors for all persons in all age groups except 65+ was ‘personal history of self-harm’, whilst other commonly reported risk factors of different age groups were [135]:

- All persons aged under 55 years: ‘disruption of family by separation and divorce’ and ‘problems in relationship with spouse or partner’.
- Persons aged 65 years and older: ‘limitation of activities due to disability’ and ‘disappearance and death of family member’.
- Males aged 25-54 years: ‘Problems related to other legal circumstances’ (associated with more than 10% of suicide deaths).
- Middle-aged males aged 45–54 and 55–64: ‘other problems relating to economic circumstances’ (associated with more than 10% of suicide deaths in these age groups).

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% [136].

ABS data suggests that in 2020, the top 5 most frequently occurring associated causes for suicide deaths (not including psychosocial risk factors) are as follows [9]:

1. Depressive episodes: associated with 38.1% of suicide deaths.

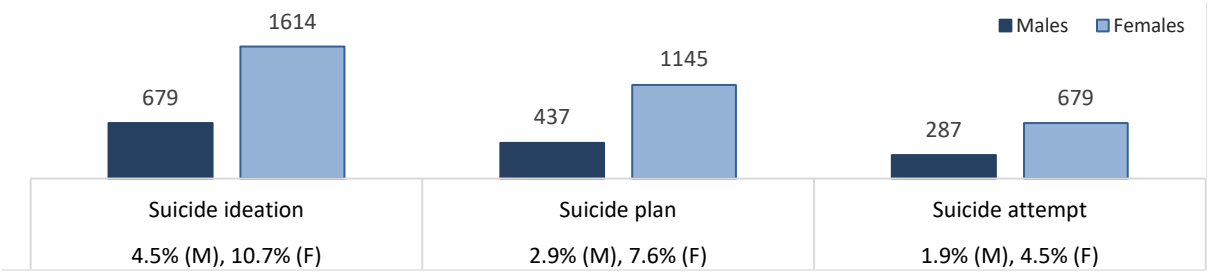
2. Other symptoms and signs involving emotional state (suicide ideation): associated with 23.5% of suicide deaths.
3. Other anxiety disorders: associated with 14.4% of suicide deaths.
4. Mental and behavioural disorders due to use of alcohol, acute intoxication: associated with 10.7% of suicide deaths.
5. Finding of hallucinogen in blood: associated with 9.4% of suicide deaths.

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 [9, 136, 137]. 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 [138, 139].

Youth

Suicide is the leading cause of death among Australians aged 15-24 years of age. In 2022, at total of 304 Australian young people aged between 18-24 died by suicide. Among children and adolescents aged 17 and under, there were 77 deaths by suicide, with the majority occurring in those aged 15-17, accounting for 83.1% of these deaths. In people aged 15-17, suicide accounted for 30.9% of all deaths, while in those 18-24, it made up 32.4% of all deaths. This marks a considerable increase from 2001, when suicide accounted for 16.5% of deaths in the 15-17 age group and 23.9% in the 18-24 age group. In contrast, among children aged 14 and below, the proportion of deaths due to suicide remains relatively low. In 2022, suicide represented just 0.9% of all deaths in this younger age group [140].

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 [141].



The Youth Atlas highlights a disproportionately high prevalence of self-harm in regional and outer metropolitan areas across Australia, with the Nepean Blue Mountains region in NSW marked as a priority due to the highest rates of youth self-harm and suicide. Self-harm rates are notably higher among females, particularly those aged 16-17 years, compared to their male counterparts [142].
Several risk and protective factors influence self-harm rates among youth. Key risk factors include mental illness, parental unemployment, insecure housing, social fragmentation, and having Australian born parents. These risks are intensified in regional areas by financial instability and community stigma. Interestingly, having overseas-born parents emerged as a protect factor, possibly due to supportive structures withing culturally diverse communities. Additionally,

community green spaces, strong family connections, and positive school environments serve as protective influences, helping to reduce some self-harm risks [142].

Beyond personal and family factors, broader socio-economic environmental issues also impact youth mental health. Many young people report feeling a sense of hopelessness linked to climate change, a sentiment that is especially pronounced in regional and remote areas where barriers to climate-related activism and sustainable living can intensify feelings of powerlessness. The combined effects of the COVID-19 pandemic and natural disasters, such as bushfires and floods, have contributed to a pervasive sense of uncertainty and stress among youth, negatively impacting their mental health and resilience [142].

The Resilient Youth Report 2023 notes that primary students generally report being within health mental health ranges, however, nearly one-third experience significant symptoms of depression or anxiety. Notably, gender diverse students report higher levels of anxiety and depression compared to male and female students. Most students report moderate satisfaction with their lives, though gender-diverse students show lower levels of satisfaction [143].

Resilience among students is measured through indicators such as hope, pathways, and life satisfaction. Male students generally report slightly higher resilience scores than females and gender-diverse students. Students from lower socio-economic backgrounds tend to show lower resilience. Most students report feeling supported by their teachers, family, and friends, with around 8 to 9 out of 10 students reporting a solid support system. Gender-diverse students report lower perceived social support. Many students report feeling safe at school, home and in their neighbourhoods. However, a significant number of students experiences bullying online or in person. Approximately, 2 to 3 out of 10 students reported being bullied monthly or weekly [143].

Student engagement in learning is high, with students showing strong investment in school activities. However, half of students in higher grades (5-6) are at risk of disengagement due to anxiety or coping difficulties [143].

LGBTIQA+ people [108]

LGBTIQA+ people in NSW, both youth and adults, face disproportionately high rates of mental ill-health, self-harm, and suicidality compares to the general population. According to the NSW Briefing Paper on LGBTQA+ Mental Health and Suicidality LGBTIQA+ young people aged 16 to 27 are five times more likely to attempt suicide in their lifetime than their heterosexual peers. For LGBTIQA+ adults, 76.7% have experienced lifetime suicidal ideation, while 29.2% have attempted suicide at least once. In NSW, 83.6% of LGBTIQA+ youth reported experiencing suicidal ideation, and 28.3% had attempted suicide. 61.8% of young people reported suicidal ideation in the past year, significantly higher than the 3.3% in the general population.

65.6% of LGBTIQA+ young people in NSW have engaged in self-harm at some point in their lives, and 41.9% reported self-harm in the last 12 months. Among adults, self-harm remains a significant issue contributing to poor mental health outcomes and suicide risk. Transgender and gender diverse individuals are particularly vulnerable. Around 50% of transgender people in NSW have attempted suicide at least once in their lifetime. Trans and gender diverse youth are significantly more likely to experience suicidal ideation and attempts compared to their cisgender peers, a

pattern mirrored among adult, where transgender individuals face disproportionately high levels of mental health challenges.

Experiences of harassment, discrimination, family violence, and homelessness are major drivers of poor mental health and suicidality among LGBTIQA+ populations. Nearly 40% of LGBTIQA+ youth report experiencing verbal harassment, with 20.8% facing sexual harassment in the past year. Similar risk factors such as lifetime experiences of harassment, intimate partner violence, and homelessness exacerbate the mental health struggles of the adult LGBTQIA+ population.

Culturally and Linguistically Diverse and Refugee Populations

Anecdotal evidence from community leaders (church leaders, school counsellors and NGOs) in Western Sydney (Nepean Blue Mountains and Western Sydney PHN regions) identified:

- An increase in suicides and attempted suicides (self-harm) in the first 6 months of 2018 among persons from the Pacific Islander community (Cook Islands, Samoa, Tonga, and Tokelau [144].
- Reportedly 12 young people between the ages 15-18 years have had their lives ended by suicide, with a further 20 attempts.
- Community perceptions of factors contributing to this increase in suicide deaths and suicide attempts include family issues and expectations, sexual abuse, and religious expectations.
- Community perceptions of factors contributing to this increase in suicide deaths and suicide attempts include family issues and expectations, sexual abuse, and religious expectations and/or restraints. Other factors include the cultural taboo of accepting mental health problems as not being for a religious reason; the taboo in many cultures of talking about suicide, and in some cases, there not being a word for it in language. Unsurprisingly NSW Health have also identified that language barriers, a lack of health literacy, access to health information, trust and confidentiality concerns as well as stigma, often relating to cultural and religious norms, especially around mental health and disability [145].
- National data has identified that the rates of suicide in refugees and migrants are like the rest of the population, but that almost three quarters of them experience traumatic events prior to arrival.
- Self-reported mental health conditions were 50% lower in refugees that the rest of Australia, however this population may access mental health care through other pathways, including in regular GP consultations, which is not recorded, further underestimating the total use of mental health services [146]. However current data shows that there are concerning reports of suicidality amongst refugees in Australia [147].
- Refugees may also access mental health through other pathways including the Program of Assistance for Survivors of Torture and Trauma under the federal government, provide refugees counselling and other mental health services, state mental health services, cultural or religious institutions or other not for profit organisations [148]. The use of these service is not captured by Medicare Benefits Schedule data and further adds to the lack of capture of data in this area [146].
- In addition to noting the lack of data in the CALD population, the NSW Service for the Treatment and Rehabilitation of Torture and Trauma, have noted that whilst there is national data for the settlement LGA for incoming migrants, their evidence shows that

these refugees then often move within a 12 month period to another LGA that is not captured in ABS data, and that by cross referencing with Settlement Reports from the Department of Home Affairs, a more detailed picture can be formed of where migrants live [149]. STARTTS data shows the following: Community Profile In 2021, 19.7% of people living in the Nepean Blue Mountains region were born overseas. Of which, the highest number of people were born in:

  - India (7,713 people)
  - Philippines (5,926 people)
  - China (2,195 people)
  - Malta (1,831 people) and
  - Fiji (1,741 people) 49

- We also have Refugees and asylum seekers who have re-settled in the Nepean Blue Mountains region include people from Afghanistan, Bhutan, Burma, Iraq, Syria, Tibet, and Ukraine.

Service Needs

Psychological Therapy SOS Program

The NBMPHN funded psychological therapy suicide prevention service has consistently operated at full capacity and is highly regarded among GP referred and allied health providers. In 2022-23 322 clients accessed the SOS (Suicide Prevention Service). In 2023-24, up until May 31st, 259 clients were SOS patients. 57% of PTS mental health providers deliver SOS. The number of sessions will be extended from 7 to 10 in 2024/25 to meet growing demand.

This service addresses a regional gap by providing a GP referral pathway for individuals at mild to moderate risk of suicide, offering targeted, quick-response short term psychological therapy within the primary care sector. While referrals were previously uneven across the region, the introduction of telehealth services in 2019, in response to the COVID-19 pandemic, has significantly improved access and service distribution across the region.

Referral Pathways

Previous community consultation has identified that there is a lack of easily understood and accessible clinical and community referral pathways for people at risk of suicide. There is also a lack of coordinated care for people who need to access several services at the same time. Regional Suicide Prevention Coordinator Consultations between 2023-2024 identified that this is still an ongoing theme expressing that there is a need for Care navigation and next steps and wrap around supports. It has also been identified that services lack focus on relevant social, cultural, and environmental factors [150].

Continuity of Care [9]

Stakeholders have previously expressed that 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. There is a lack of consistent approach to discharge planning, including lack of coordinated follow-up discharge and people discharge from the Mental Health Inpatient Unit do not always follow up with their GP.

Furthermore, it has been identified that there is a lack of support in the community following discharge from the Mental Health inpatient unit, and limited access to community programs due to long waiting lists and lack of services. There is a lack of interventions for people who repeatedly self-harm or attempt suicide.

The Way Back Service commenced 1st July 2024.

Suicide Prevention in General Practice

High-quality GP care has been shown to substantially reduce suicide attempts and deaths, especially when integrated within a comprehensive suicide prevention program [151, 152]. Research indicated that most GPs would encounter at least one patient suicide during their career, with more frequent occurrences among those serving communities with high mental illness rates [153]. People exhibiting suicidal behaviour often visit primary care physicians shortly before suicide, with 76.9% of those who died by suicide having seen a GP within the three months prior [154, 155]. This pattern underscores the critical role GPs play in identifying suicidality, even among patients not explicitly reporting distress.

The greatest reductions in suicide deaths are expected through targeted GP training (6.3%), followed by psychosocial treatment (5.8%), gatekeeper training (4.9%), and restricting access to means (4.1%) [156]. Evidence in Australia highlights that doctors and medical students face a higher risk of mental ill-health and suicide compared to the general population [157, 158]. Research also suggests that doctors often miss the signs of suicidal ideation in themselves [159].

It is recommended that evidence-based suicide prevention training be incorporated into induction programs and maintained through regular refresher courses for all doctors and medical students. Consultations with doctors and students reveal a need for effective communication and support systems following a patient's suicide [157].

Culturally Safe Suicide Prevention

Previous stakeholder feedback indicated that suicide prevention programs that involve Aboriginal and Torres Strait Islander people in service provision are needed to support Aboriginal and Torres Strait Islander people at risk of suicide (NBMPHN 2016a; NBMLHD 2016c). It has been widely acknowledged by stakeholders that suicide prevention programs run by Aboriginal and Torres Strait Islander people are generally absent from the NBM region.

In 2023 WHL commissioned a report to assist with scoping potential suicide prevention strategies that address the needs of local Aboriginal communities across the Nepean Blue Mountains region. While based on a small number of informal yarns with targeted community stakeholders, some key themes, ideas and barriers emerged [160].

- There is a preference for services and supports that are delivered by Aboriginal and Torres Strait Islander peoples.
- Existing assessment and intake processes do not recognise cultural needs and expressions of mental health issues or suicidality.
- Peer workers and system navigator roles would assist Aboriginal and Torres Strait Islander communities to engage with the health system.

- The concept of suicide prevention should include ongoing grief, loss and trauma and approaches that utilised cultural activities and connections should be seen as a preventative strategy.
- Workforce training is needed, both adequate cultural support for Aboriginal workers and better cultural training for non-Aboriginal workers and organisations

Skills and Capacity Training

Previous stakeholder engagement identified that suicide prevention and training amongst primary healthcare providers is unclear. There is a need for education and training for non-clinical workers that have contact with high-risk people such as police and other emergency services. There is a lack of relevant staff and training in youth specific mental health first aid at local schools.

Local Regional Suicide Prevention Coordinator (RSPC) consultations between 2023-24 have identified that service workers need trauma informed care training and practices embedded into their work. There is a need for skilled suicide prevention training for the community. 36.2% of Australians aged 16–85 years were close to someone who took or attempted to take their own life the impact of suicide deaths is felt by up to 135 people and workers (encompassing people working in healthcare as well as frontline workers delivering psychosocial supports such as financial, housing and employment services) [11, 12]. Results of the NBM Community Health and Wellbeing Survey indicated that 44.7% respondents have cared for someone who has attempted suicide, 40% of these people have also had thoughts of suicide or attempted suicide themselves. 25% of respondents have had thoughts or suicide, 14% have survived a suicide attempt, and 23% have lost someone to suicide [2]. There is a lack of Lived Experience workers, and this needs to be incorporated into service model delivery. There is an increased need for peer workforce identification and availability [150].

General Population Awareness of Support for Suicide Prevention

Previous consultations have identified that there is a lack of community engagement and understanding of suicide, and the belief that prevalence is hidden. There is also a lack of education and awareness to reach people who don't access mental health services. RPSC consultation has identified that this issue is still prevalent, and there is a general lack of community awareness of suicide prevention services. There is also a lack of understanding and promotion of referral pathways and available supports.

According to respondents of the NBM Community Health and Wellbeing Survey, 70% of respondents are aware of resources available in their community for people having thoughts of suicide. 59% of respondents reported that they are aware of services to support people experiencing loss, grief, and other complex emotions after a person has died by suicide [2].

Support for Suicide Prevention and Postvention

Consultations with local service providers indicate that there is a lack of post-suicide prevention support services for young people, particularly in the Lithgow LGA. Young people are more likely to seek support from friends, followed by parents and relatives. It is estimated that only a small proportion (5-10%) of young people at risk of suicide seek support from formal agencies.

Further consultation with the RSPC in 2023/24 highlighted additional support needs. Support is required for children aged 5-12 years, youth with more complex needs, neurodiverse individuals,

and families dealing with complex issues. It was noted that this support is particularly important for Aboriginal families. It was also identified that there are limited support groups available for those experiencing suicidal ideation, carers of individuals in crisis, and those bereaved by suicide [150].

ALCOHOL AND OTHER DRUGS

Health Needs

Illicit Drug Use

Recent national data from the 2022-2023 National Drug Strategy Household Survey (NDSHS) highlights several key trends in illicit drug use in Australia. Approximately 47% of Australians aged 14 and over reported using an illicit drug at least once in their lifetime, and 18% had used an illicit drug in the previous 12 months, figures that are consistent with 2019 but have increased compared to 2007. Cannabis continues to be the most frequently used illicit drug, with 11.5% of Australians reporting recent use, a figure largely unchanged since 2019 [161].

Cocaine use has seen a slight rise, increasing from 4.2% in 2019 to 4.5% in 2022-2023. In contrast, ecstasy use declined from 3.0% to 2.1% over the same period. However, according to the 2023 National Ecstasy and Related Drugs Reporting System (EDRS) interviews, 95% of participants reported using ecstasy in the past six months, an increase from 88% in 2022. The use of capsules and crystal forms of ecstasy has become more common, and while frequency of use remained stable at a median of 7 days in the past six months, the purity and availability of ecstasy have seen fluctuations in different markets [162].

Methamphetamine and amphetamine use remains low in terms of recent use, at 1.0%, although lifetime use is significantly higher at 7.5%. Among those who do use methamphetamine, frequent use is more common, with 37% of methamphetamine users reporting monthly or more frequent use. This is supported by the 2023 EDRS interviews, which noted that while overall methamphetamine use has stabilised (30%), crystal methamphetamine remains the most common form, and its price has decreased. This is in contrast to cocaine and ecstasy users, who typically report infrequent use, with most using these drugs once or twice a year [162].

The EDRS report also highlights that mental health issues are prevalent among users of ecstasy and related drugs, with 58% of participants reporting anxiety or depression in the past six months. These mental health challenges reflect the broader relationship between substance use and psychological well-being in Australia [162].

Local data from the Nepean Blue Mountains region further highlights the regional impact of methamphetamine use. In 2020-2021, 1,884 clients aged 10 and over received alcohol and other drug (AOD) treatment through NBMPHN-commissioned services. Methamphetamine use emerged as the third most common reason for seeking treatment, following alcohol and cannabinoids, representing 18.58% of all cases. This marks a shift from previous years, as amphetamines, which were the leading cause for seeking treatment in 2017-2018, fell to the fifth highest reason for concern. By 2023-2024, NBMPHN-commissioned services noted cannabis (21.53%), methamphetamine (20.42%), and alcohol (35.66%) as the principal drugs of concern [163].

Local stakeholder consultations identified increasing methamphetamine use as a key trend in the client population. Methamphetamine was reported as the second most common drug, after alcohol, for individuals seeking AOD treatment in the Nepean Blue Mountains region [9].

The prevalence of drug use in Aboriginal and Torres Strait Islander communities remains a significant issue. According to national data from 2018-19, Aboriginal and Torres Strait Islander Australians aged 14 years and older use illicit drugs at a higher rate than non-Aboriginal and Torres Strait Islander Australians, excluding substances such as ecstasy, cocaine, and hallucinogens. Aboriginal and Torres Strait Islander Australians were 1.8 times more likely to have used any illicit drug in the past 12 months, 1.3 times more likely to have used cannabis, 2.4 times more likely to have used methamphetamines, and 1.9 times more likely to have misused pharmaceuticals compared to their non-Indigenous counterparts. These disparities remain evident even after adjusting for age structure differences between the two populations. Although the gap has narrowed over time, this is largely due to increases in illicit drug use among non-Aboriginal and Torres Strait Islander populations [164].

Substance use over the last 12 months is particularly prevalent among Aboriginal and Torres Strait Islander Australians aged 25-34, with males more likely than females to have used substances. In addition, a 2017 report found that 84% of Aboriginal and Torres Strait Islander Australians detained by police tested positive for drugs, compared to 73% of non-Indigenous detainees [165].

Aboriginal and Torres Strait Islander Sharing and Learning Circles (2015) identified drug and alcohol issues as a priority across four local government areas (LGAs). Key concerns raised included the high risk of substance use among a younger population, with approximately 55% of Aboriginal and Torres Strait Islander people in the Nepean Blue Mountains (NBM) region under the age of 25. There was also a clear call for early intervention to reduce harm from alcohol and drugs [9]. Cannabis use is notably prevalent and continues to rise, marijuana use among Aboriginal and Torres Strait Islander Australians aged 15 years and older increased from 14% in 2008 to 25% in 2018-19 in remote areas, and from 18% to 24% in non-remote areas [165].

12% of respondents to the NBM Community Health and Wellbeing Survey indicated that they use recreational drugs, of those 54% have sought help to reduce or quit using recreational drugs, and a further 28.5% would like to reduce or quit using recreational drugs [2].

Hospitalisation Rates for Methamphetamine Use [166]

Rates of hospitalisations related to methamphetamine use show a steady increase in the rate per 100,000 population for the Nepean Blue Mountains region from 2010 to 2023. Beginning with a low rate of 4 per 100,000 in 2010-2011, the rates rise consistently, peaking at 140.6 in 2022-2023. In the most recent years, the NSW and NBM rates are nearly identical, with 140.6 for NBM and 140.4 for NSW.

Drug Induced Deaths [167]

Data from the 2024 Overdose Report shows a fluctuating trend in drug-induced deaths between 2008 and 2022 in the NBM region. Unintentional drug-induced deaths in the region increased from 23 in 2008 to a peak of 39 in 2016. Afterward, the numbers varied, decreasing to 21 deaths by 2022. The rate per 100,000 population also rose from 6.8 in the 2008-2012 period to 7.7 in 2018-2022. This rise is consistent with national trends, where unintentional drug-induced deaths have generally increased over time. NSW had a slightly higher rate of 8.8 per 100,000 in 2022, indicating that NBMPHN had a slightly lower rate than the state average.

Drug-induced suicides in NBMPHN followed a similar pattern of fluctuation. There was a peak of 10 deaths in 2010, followed by stabilisation, with 4 to 7 deaths recorded annually in the subsequent years. The rate of drug-induced suicides decreased from 1.6 per 100,000 in 2008-2012 to 1.4 in 2018-2022. This trend is in line with regional patterns, where drug-induced suicides have stabilized after initial increases, although the rates remain slightly lower than the NSW and national averages.

In terms of total drug-induced deaths (both unintentional deaths and suicides), NBMPHN saw an increase from 25 deaths in 2008 to a peak of 43 in 2016, before the numbers tapered to 27 by 2022. The rate per 100,000 followed a similar trajectory, increasing from 8.8 in 2008-2012 to 9.6 in 2013-2017, before decreasing slightly to 9.2 in 2018-2022. This is comparable to trends in NSW, which saw an overall increase in drug-induced death rates, reaching 8.8 per 100,000 in 2022.

Opioids remain the primary drugs involved in overdoses, contributing to nearly 50% of unintentional drug-induced deaths in NBMPHN, consistent with state and national trends. Pharmaceutical opioids are particularly prevalent among women, while heroin is more commonly involved in deaths among men. Benzodiazepines and stimulants are increasingly involved in drug-induced deaths, with benzodiazepines accounting for 31.8% of unintentional drug-induced deaths in 2022. Nationally, stimulant-related deaths have risen sharply, increasing from 6.3% in 2002 to 29.4% in 2022.

Demographic patterns show that men are more likely to experience drug-induced deaths, particularly those aged 40-49. This aligns with state and national trends. Additionally, older age groups, especially those over 50, have seen the largest increases in drug-related fatalities. Indigenous Australians face disproportionately higher rates of unintentional drug-induced deaths, with a rate of 23.3 per 100,000 compared to 6.1 per 100,000 for non-Indigenous Australians, reflecting national disparities.

Long Term Risk of Alcohol Consumption [168-170]

The long-term risk associated with high rates of alcohol consumption in adults within the NBMPHN has fluctuated over the years. Starting at 33.4% in 2002, the risk has varied, peaking in certain years and declining in others. Notable peaks occurred in 2008, where the percentage reached 37.5%, and in more recent years, with 38.8% in 2020 and 38.9% in 2022. This suggests that in these years, a higher proportion of adults in the region were at long-term risk due to alcohol consumption.

From 2019 to 2022, the data indicates a marked increase in long-term risk, rising from 32.9% in 2019 to 38.9% in 2022, before experiencing a slight drop to 33.6% in 2023. Despite this recent decrease, the general trend over the past few years shows a rise in alcohol-related risks.

In comparison, the data for NSW demonstrates a more stable trend in long-term alcohol risk among adults, with percentages ranging from 32.5% in 2002 to 33.5% in 2023. The fluctuations in NSW were smaller and more consistent than those observed in the NBMPHN, with the highest percentage recorded in 2019 at 32.8%. The rates have remained relatively stable, without the pronounced spikes seen in the NBMPHN, especially in the most recent years.

The differences between the NBMPHN and NSW are most apparent in the years 2020 to 2022. While the NBMPHN experienced sharp increases, with risk levels peaking at nearly 39%, NSW

maintained more moderate rates, ranging from 32.5% to 33.5%. These figures indicate that the long-term alcohol-related risks in the NBMPHN are significantly higher than the state average.

The NBM region shows higher rates of less frequent alcohol consumption compared to the overall NSW rate, but it consistently reports lower rates of daily drinking. For less than weekly drinking, the NBM region exhibited fluctuations over the years, starting at 31.5% in 2002-2003. There was a significant drop to 24.7% in 2008-2009, followed by a rise to 36.5% in 2018-2019. In recent years, the rate has stabilized between 29.9% and 34.9%. Comparatively, NSW showed more stable trends, with rates starting at 25.8% in 2002-2003 and gradually increasing to 28.7% by 2022-2023. Throughout most of the period, less than weekly drinking rates in NBM region were higher than the overall average for NSW.

For weekly drinking, the NBM region experienced significant variations, with rates peaking at 38.7% in 2007-2008 before dropping to 31.8% in 2011-2012. However, from 2018 to 2023, weekly drinking rates stabilised between 35% and 38.8%. In comparison, NSW showed more consistent weekly drinking rates, starting at 38.4% in 2002-2003 and peaking at 41.5% in 2020-2021. For most years, weekly drinking in the NBM region was lower than the overall NSW average, except for a few periods in the mid-2000s.

Daily drinking in NBM has steadily declined over time, starting at 9.8% in 2002-2003 and falling to 5.5% in 2022-2023, with a low of 5.3% in 2017-2018. This trend is mirrored across NSW, where daily drinking dropped from 11.1% in 2002-2003 to 6.1% in 2022-2023. However, NBM consistently reported lower daily drinking rates compared to NSW throughout the period.

There is a significant disparity in alcohol-attributable hospitalisation rates between Aboriginal and non-Aboriginal populations in New South Wales between 2006-2007 to 2021-2022.

For the Aboriginal population, hospitalisation rates due to alcohol-related causes were consistently higher than those for the non-Aboriginal population. The rates started at 914.8 per 100,000 people in 2006-2007 and fluctuated over the years, with a notable decline in 2011-2012 to 777.7 before gradually rising again. The highest rate occurred in 2020-2021, reaching 1,098.1 per 100,000. By 2021-2022, the rate decreased to 934.3, though it remained significantly elevated compared to previous years.

For the non-Aboriginal population, hospitalisation rates were consistently lower. Beginning at 394.5 per 100,000 in 2006-2007, the rates increased slowly over time, peaking at 529.4 in 2020-2021. In 2021-2022, the rate declined to 478.1, reflecting a slight decrease after the peak year.

In the Blue Mountains LGA, alcohol-attributable hospitalisation rates increased from 368 per 100,000 people in the 2001-2002 period to a peak of 653 in 2015-2016. After this peak, the rate saw a gradual decline to 483 in 2018-2019 and 467 in 2019-2020, followed by a slight increase to 528 in 2020-2021. This indicates that while the rates have fluctuated, alcohol-related hospitalisations remain a concern in the area over the two-decade span. The Hawkesbury LGA exhibited a similar pattern, with rates starting at 283 per 100,000 people in 2001-2002 and rising to a peak of 644 in 2012-2013. The rates then declined to 429 in 2015-2016 before climbing again to 547 in 2019-2020 and 528 in 2020-2021. This fluctuation indicates ongoing challenges with alcohol-related harm, despite periods of decline during the observed years.

In the Lithgow LGA, hospitalisation rates for alcohol-related causes remained high throughout the observed period, beginning at 416 per 100,000 in 2001-2002 and peaking at 606 in 2011-2012. After this peak, rates stabilised, with figures ranging between 405 and 463 per 100,000 over the following years. By 2020-2021, the rate had slightly decreased to 434 per 100,000, though it remained elevated compared to the earlier years in the dataset. The Penrith LGA began with a lower alcohol-related hospitalisation rate of 290 per 100,000 people in 2001-2002. The rate gradually increased, reaching a peak of 476 in 2015-2016, followed by a decline to 382 in 2018-2019. However, the rate rose again to 417 per 100,000 by 2020-2021. Penrith's rates remained lower compared to the other LGAs, but the overall trend still shows significant fluctuations in alcohol-related hospitalisations over the two decades.

The rates of alcohol-attributable deaths in the Blue Mountains LGA show a gradual decline over the years. The highest rate was recorded in 2001-2002 at 26.1 per 100,000 population. Since then, the rates steadily decreased, reaching 19.6 in 2020-2021. The period from 2001 to 2010 saw the most significant reductions, with the rate dropping from 26.1 to 21.5 by 2009-2010. There was a slight increase around 2014-2017, where the rates rose to 22.7, but the general trend has been downward, indicating a gradual improvement in alcohol-related mortality in the area.

In the Hawkesbury LGA, the pattern mirrors that of the Blue Mountains, with a consistent decrease in alcohol-attributable death rates over time. Starting at 25.8 per 100,000 population in 2001-2002, the rate fell to 19.6 by 2020-2021. Like the Blue Mountains, the sharpest decline occurred in the early 2000s, with the rate dropping from 25.8 in 2001-2002 to around 21 by 2010-2011. There were minor fluctuations in the mid-2010s, but the trend toward lower alcohol-attributable deaths has been relatively steady.

Lithgow LGA exhibited the highest rates of alcohol-attributable deaths among the LGAs analysed. The rates remained consistently high throughout the 2000s, starting at 26.3 in 2001-2002 and remaining above 22 per 100,000 population until around 2016-2017. The highest rate was 26.3 in 2001-2002, and the lowest occurred in 2020-2021 at 21. The decline in alcohol-attributable deaths in Lithgow was slower than in other LGAs, indicating more persistent alcohol-related mortality issues in the area.

In the Penrith LGA, the alcohol-attributable death rates also show a downward trend. Starting at 25.6 in 2001-2002, the rate dropped to 19.0 by 2020-2021. There was a steady decrease through the early 2000s, reaching 20.6 by 2011-2012. While the rates slightly increased in the mid-2010s, reaching 22.2 in 2014-2015, the general trend has been a reduction in alcohol-related deaths over the two decades analysed.

The state-wide trend in NSW follows a similar pattern of gradual reduction in alcohol-attributable deaths. Starting at 25.5 per 100,000 population in 2001-2002, the rate dropped to 18.8 by 2020-2021. Like the LGAs, the most significant reductions occurred in the early 2000s, with a noticeable decline by 2010-2011 (20.7). The rates remained relatively stable in the mid-2010s before further decreasing toward 2020-2021.

63% of respondents to the NBM Community Health and Wellbeing Survey indicated that they drink alcohol. Of those, 9.5% indicated that they drink daily, 54% drink at least once weekly and 15%

drink at least once a month. 2% of respondents engage in binge drinking behaviours daily, whilst 12% binge drink at least once a week. 28% report never engaging in binge behaviour. 20% report that alcohol consumption has negatively impacted their health, whilst a further 5% report that they are unsure of the impacts of alcohol consumption on their health [2].

Substance Abuse in Young People

Substance use among young people remains a significant concern. In the NBM region, young people are reported to be under-serviced and have high needs in relation to alcohol and other drug services. They are increasingly presenting with greater complexity, ranging from moderate to high, when accessing local AOD services. Analysis of available data indicates that compared to people their age in 2001, today's young people are less likely to smoke, drink, or use illicit drugs. This change may be due to shifts in generational habits or other influencing factors. Nationally, risky drinking has decreased, with the proportion of 14–19-year-olds consuming five or more drinks at least monthly dropping from 25% in 2013 to 18% in 2016. A similar decrease was observed for 20–29-year-olds, from 41.7% to 39.9%. However, alcohol consumption rates remain concerning, as young people are the most likely to drink in risky quantities compared to other age groups [9].

Despite national survey data showing a decline in substance use among 14–29-year-olds between 2001 and 2016, local stakeholders and commissioned service providers continue to report a high prevalence of problem substance use among young people in the NBM region. Provider-reported data indicates that the principal drugs of concern among young people accessing AOD treatment services are nicotine and other undeclared illicit substances (45%), cannabinoids (20%), alcohol (12%), and methamphetamines (6%). Nicotine is believed to be chosen by high school students to avoid mandatory reporting of illicit substance use. Furthermore, young people using methamphetamines in the region 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, with high needs and increasing complexity in their cases [9].

Certain groups of young people in the NBM region are identified as being at a higher risk of substance misuse than others. These include young people in out-of-home care, LGBTIQA+ individuals, survivors of abuse, and those experiencing anxiety, depression, or mental illness. Young Aboriginal and Torres Strait Islander people, culturally and linguistically diverse communities, young people who hang out on the streets after hours, and those working in hospitality are also at increased risk. Provider-reported data highlights that a high proportion of young Aboriginal and Torres Strait Islander people are at risk of dependency on substances associated with psychosocial issues [9].

Aboriginal and Torres Strait Islander youth have been identified as a priority area for addressing substance use and mental health concerns. Community consultations highlighted the need to focus on young Aboriginal and Torres Strait Islander people within their communities. Several key issues were identified as impacting this group [171]:

- The importance of identity and cultural connection, and the negative effects experienced when knowledge of identity and culture is lacking.
- Pressures such as peer pressure and bullying, including through social media and electronic communication.
- A lack of support for diversity and diverse cultures in communities.

- The need for services accessed by young Aboriginal and Torres Strait Islander people to ensure cultural competence and cultural safety.

Prison Inmates

The NBM region is home to four adult and one juvenile prison, which presents unique challenges regarding substance use among inmates. Inmates in these facilities are at a higher risk of substance misuse compared to the general population. Consultations suggest that inmates released from these prisons are particularly vulnerable to dangerous substance use post-release. It is also noted that inmates who have undergone drug treatment programs within these facilities often struggle to access necessary support services after release, making it difficult to maintain abstinence or lower-risk substance use [9].

There is a disproportionately high representation of young Aboriginal and Torres Strait Islander persons within NSW prisons and correctional facilities. Half of the 863 young people in secure detention facilities on an average day were Aboriginal and Torres Strait Islander (50%), almost half (46%) of young people under community-based supervision were Aboriginal and Torres Strait Islander, and almost half (47%) of all young people under youth justice supervision were Aboriginal and Torres Strait Islander [172] .

Consultations with the general population indicate that inmates released from prisons 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 and Torres Strait Islander people within &/or on release from correctional facilities) likely represents a high-risk group in high need of support [9]. 2018-2019 data suggests that Aboriginal and Torres Strait Islander prison entrants were 80% more likely than non-Aboriginal and Torres Strait Islander to be current smokers and were 26% more likely to be at high risk of alcohol related harm [172].

The 2015 Young People in Custody Health Survey reported high levels of substance use among young people in custody, further illustrating the substance misuse challenges within correctional settings. According to the survey, almost 92.5% of young people in custody reported using illicit drugs at some point in their lives, with 81.5% indicating they used drugs weekly or more frequently in the 12 months prior to custody. Cannabis was the most used drug, with 90.2% of respondents having used it, followed by crystal methamphetamine, used by 55.1% of participants. Nicotine and alcohol were also frequently used substances. Additionally, 65.2% of these young individuals experienced problems with their health, relationships, and interactions with the police due to drug use [173].

For adult prisoners, data from the AIHW highlights methamphetamine as the primary drug of concern, with 43% of prison entrants reporting its use in the 12 months prior to their incarceration. Cannabis follows closely at 40%. Methamphetamine use was more prevalent among prisoners aged 18 to 44, while cannabis was more commonly used among those aged 18 to 24. Notably, prison entrants were 30 times more likely to report methamphetamine use compared to the general community. Additionally, 16% of prisoners who were discharged reported using illicit drugs while incarcerated, with higher usage rates among younger discharges aged 18 to 24 years [174].

The survey also highlighted the difficulties faced by young people in custody, who represent a high-risk group for substance misuse. Nearly all (92.5%) of the young people in custody reported prior drug use, with many using substances frequently before entering detention. Inmates are at an increased risk of dangerous substance use, particularly those who have undergone treatment in prison but face barriers in accessing support post-release. These findings underscore the need for targeted interventions and better support systems for prisoners re-entering the community [173].

Opioid Pharmacotherapy Treatment [175]

Nationally, the rate of clients receiving opioid pharmacotherapy treatment has remained relatively stable since 2011, averaging around 21 clients per 10,000 people. However, there have been fluctuations at the state and territory levels. In 2023, NSW continued to have the highest number of people receiving opioid pharmacotherapy treatment, with 24,475 clients. This represents a slight decrease from the peak of 24,783 in 2022. The rate of clients receiving treatment in NSW was 22 per 10,000 population in 2023, consistent with the national trend.

On a snapshot day in 2020, 53,316 people across Australia were receiving pharmacotherapy treatment for opioid dependence, reflecting a 4.7% increase from the previous year and the largest growth in the number of clients over the past decade. The number of clients increased by 15% over the 10-year period from 2010 to 2020. By 2023, the total number of clients receiving pharmacotherapy treatment across Australia had slightly declined to 53,272.

In New South Wales, methadone consistently remained the most used opioid pharmacotherapy treatment from 2020 to 2023. In 2023, 12,119 clients (49.5% of the total in NSW) were receiving methadone, which aligns with the national trend where methadone accounted for 47.2% of all clients. Buprenorphine and buprenorphine-naloxone were also widely used in NSW, with 11,729 clients (47.9%) receiving buprenorphine in 2023. Buprenorphine-naloxone had significantly fewer users in NSW, representing a negligible proportion of clients (0.0%), while nationally it accounted for 17.5% of clients in 2023. Across Australia, the total number of clients receiving opioid pharmacotherapy increased from 53,316 in 2020 to 53,272 in 2023. While the percentage of clients on buprenorphine LAI remained lower, this treatment option saw some adoption, with 514 clients in NSW using it in 2023. Overall, NSW had the highest number of clients receiving opioid pharmacotherapy across Australia, reflecting national trends where methadone remains the dominant treatment, and buprenorphine alternatives continue to grow in use.

In 2023, the 40-49 age group accounted for 34.9% of total clients, with methadone being the most frequently used treatment (36.6% in this age group). Buprenorphine-naloxone was also a common treatment, with 34.5% of clients in their 40s using this form of therapy. The under 30 age group made up 7.1% of clients, and buprenorphine was the preferred treatment for 12.5% of these younger individuals. For clients aged 60 and over, who represented 12.5% of the total, methadone remained the dominant treatment at 16.7%.

In 2022, the 40-49 age group continued to have the highest number of clients (35%), with methadone being the most common treatment (37%). Buprenorphine-naloxone was the second most common treatment for those in their 40s (35.1%). Among clients under 30, buprenorphine was the most frequently used treatment, accounting for 13.7% of this group. Older clients, aged 60 and over, represented 11.2% of the total, and methadone was again the dominant treatment for this age group.

In 2021, the 40-49 age group remained the largest demographic for pharmacotherapy, representing 35.7% of total clients. Methadone usage in this group was at 34.9%, while buprenorphine-naloxone was used by 44.5% of clients. The under 30 age group made up 8% of total clients, with 14.2% receiving buprenorphine. Clients aged 60 and over accounted for 10.6%, with methadone being the most common treatment at 13.9%.

In 2020, the 40-49 age group made up 35.5% of clients, with methadone as the predominant treatment (37.2%). For those under 30, buprenorphine was the most common treatment, used by 12.1% of clients. Older clients, aged 60 and over, accounted for 9.4% of total clients, with methadone remaining the preferred treatment at 11.5%.

Overall, methadone was consistently the most frequently used pharmacotherapy treatment across all age groups over the four years. However, buprenorphine-naloxone gained increased usage, particularly among clients in the 40-49 age range. Clients under 30 made up a smaller proportion of the total, with buprenorphine being the more common treatment in this age group. The older demographic, aged 60 and over, accounted for around 10-12% of total clients, with methadone being the primary treatment.

From 2020 to 2023, the data shows that males consistently represent most clients receiving pharmacotherapy treatment across all treatment types. In 2023, males accounted for 67.3% of the total clients, while females made up 31.0%. This trend was similar in previous years, with males representing 67.4% in 2022, 68.5% in 2021, and 66.5% in 2020. Female clients, meanwhile, comprised 30.8% in 2022, 31.4% in 2021, and 33.4% in 2020. The proportion of clients identified under another term remained very small across all years, with less than 1% in each year. Notably, the distribution between males and females remained relatively stable throughout this period, with a consistent majority of male clients.

The data shows the distribution of clients receiving pharmacotherapy treatment by Indigenous status across various states in Australia from 2020 to 2023. In 2023, Indigenous clients accounted for 12.1% of the total pharmacotherapy clients across all treatment types, with 6,465 Indigenous clients out of 53,272 total clients. Non-Indigenous clients made up the majority, comprising 75.3% (40,123 clients). The remaining 12.5% (6,684 clients) were not stated.

Looking at the previous years, similar trends are observed. In 2022, Indigenous clients made up 11.8% of the total, non-Indigenous clients accounted for 81.2%, and not stated was 7.0%. This pattern continues across 2021 and 2020, with Indigenous clients comprising 12.0% and 10.7%, respectively, of the total pharmacotherapy clients, while non-Indigenous clients consistently accounted for over 80% of the total.

Overall, the data indicates that most pharmacotherapy clients are non-Indigenous, but a significant proportion of Indigenous clients are receiving treatment, with their representation staying relatively consistent at around 10-12% annually.

Drug Related Offences [176]

Over the past three years, cannabis possession offences have shown a general decline across the LGAs. In the Blue Mountains, rates have remained relatively stable over the past decade, with a rate of 146.3 in 2022-2023 that dropped to 106.5 in 2023-2024. Penrith has experienced a decrease

in cannabis possession, with the rate falling from 161.0 in 2021-2022 to 138.5 in 2023-2024, reflecting a 3.4% decline over the past two years. Lithgow has also shown stability, although at a higher rate than other LGAs, with a decrease from 197.0 in 2022-2023 to 153.8 in 2023-2024. In Hawkesbury, there has been a slight decline in cannabis possession over the past decade, with a 5.3% decrease over the last two years, bringing the rate down from 106.1 in 2021-2022 to 89.9 in 2023-2024.

Amphetamines possession has remained more variable across the LGAs. In the Blue Mountains, the rate was 33.4 in 2022-2023 and decreased slightly to 30.8 in 2023-2024, with stability over the past two years. Penrith has seen a gradual decrease in amphetamines possession, dropping from 90.5 in 2021-2022 to 83.3 in 2023-2024, showing a small decline in the most recent years. Lithgow has also shown stability, with the rate falling from 134.5 in 2021-2022 to 86.5 in 2023-2024. In Hawkesbury, the rates have fluctuated but remained relatively consistent, with the rate slightly increasing from 66.3 in 2022-2023 to 73.7 in 2023-2024.

Other drug possession offences have shown stability across the LGAs. In the Blue Mountains, the rate for other drug possession dropped from 35.9 in 2022-2023 to 27.0 in 2023-2024, reflecting stability over the past two years. In Penrith, the rate decreased from 52.1 in 2021-2022 to 48.9 in 2023-2024, also indicating a stable trend. Lithgow has seen more variability, with a decrease from 43.2 in 2022-2023 to 24.0 in 2023-2024. Hawkesbury has maintained stability, with the rate decreasing slightly from 44.2 in 2022-2023 to 42.7 in 2023-2024.

Service Needs

AOD Treatment Services

NBMPHN's preliminary investigation and consultations to date have not supported the view that certain people wish to access AOD treatment services outside their local area. NBM community consultations have indicated a strong 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 [9].

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. Other reasons included not being 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 [9].

Transportation within the region also presents a significant barrier for consumers seeking access to AOD rehab services. Many people requiring AOD treatment services will also require treatment for significant mental health concerns such as anxiety or depression. This increases the complexity and the barriers in seeking or engaging with services outside of the clients LGA/local area [9].

Consultations conducted with AOD service providers indicated that there is unmet demand regionally, particularly for both adult and youth services in Lithgow, Hawkesbury and upper Blue Mountains that cannot be provided under current funding. Lithgow has a part time service and

WHOs commenced service delivery from July 2024 in the Hawkesbury. Transport issues are a major issue in access to services especially in the Hawkesbury and Lithgow.

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.

- 3 x Penrith LGA
- 3 x Hawkesbury LGA
- 1 x Blue Mountains LGA.

Consultations with stakeholders identified that there is an acute need to increase the number of GP opioid prescribers which reduces burden on LHD services who are at capacity. Opioid prescribers have reduced in the last few months. Poor access to prescribers could lead to increased substance use and risk behaviours instead of managed opioid substitution treatment, which offers stabilisation of dependence and psychosocial factors.

The 2024 NBM Community Health and Wellbeing Survey revealed insights into the barriers individuals face when seeking help for alcohol and recreational drug use issues. Among respondents who expressed a desire to seek help for alcohol use, the primary barriers reported were a lack of awareness of available services (73%), cost (33%), and the stigma or shame associated with alcohol use issues (30%). 90% of those who had already sought help for alcohol use initially approached their GP, with 96% of these individuals feeling supported by their GP [2].

For respondents wanting to seek help for recreational drug use but who had not yet done so, the main barriers included fear of legal consequences (50%), cost (40%), lack of awareness of available services (40%), and stigma or shame (10%) [2].

Detoxification Services [9]

There is a shortage of local detoxification services relative to the population density in the NBM region, with only one local public and one local private detoxification service available. The NBM Drug and Alcohol Service, located in Penrith, provides detoxification for men, women, and youth, including inpatient and outpatient services. This service also supports detoxification of drug use during pregnancy and opioid substitution. In contrast, the private detoxification service is offered by St John of God Hospital in Richmond. This facility provides detoxifications for all drugs, including medicated detoxification, group and individual counselling, and an aftercare program. The private hospital also has a three-week inpatient rehabilitation program, and referrals from psychiatrists with assessment reports are preferred, though GPs may also refer patients.

Several key issues have been identified in relation to the availability and access to local detoxification services. One significant issue is that only one public detoxification service is available to NBM residents, and it is in the Penrith LGA. For residents of Lithgow, accessing this service involves significant travel time, with a one-way trip taking at least 2.5 hours. Similarly, residents of the Hawkesbury and Blue Mountains LGAs face travel times ranging from 0.5 to 1.5 hours. The private detoxification service, located in the Hawkesbury LGA, also involves lengthy travel times for many residents, with travel times ranging from 2.5 hours to 0.5 hours. This travel distance presents a major barrier for individuals requiring inpatient detoxification, particularly those who need to maintain contact with family members during their stay. Stakeholders have noted a shortage of detoxification services within the NBM region relative to its population size,

and while metropolitan services outside the region are available, they often require extensive travel by train or road, and many are private hospitals that require health insurance coverage.

In addition to the shortage of local detoxification services, there is also a shortage of outpatient detoxification and non-residential rehabilitation services in the Hawkesbury and Lithgow LGAs, particularly for men. Furthermore, there is a lack of culturally secure services for Aboriginal and Torres Strait Islander people within the region.

Several local services provide support for drug and alcohol issues in the region. Dianella Cottage, located in Katoomba and commissioned by NBMPHN, offers a non-residential day program for women, which includes group work, one-on-one sessions, drop-in facilities, and access to SMART recovery meetings. Dianella Cottage in Lithgow, also commissioned by NBMPHN, provides non-residential day rehabilitation for men and women. The Woodlands Clinic at Blue Mountains Hospital offers a comprehensive medicated-assisted treatment program for opioid dependence as an outpatient service. WHOs West in Penrith provides assessment, referral services, and residential supported care for men and women, with transitional housing beds available in Penrith and residential care beds at the Roselle Campus. Pathways Penrith (NBMAOD) offers inpatient and outpatient detoxification services, drug use in pregnancy support, and opioid substitution programs. Additionally, various State Community Health Centres, located at the Nepean Campus, Penrith Community Health Centre, St Mary's Community Health Centre, Cranebrook Community Health Centre, and Katoomba Community Health Centre, provide youth and adult counselling and other alcohol and other drug (AOD) support services.

The primary regional outpatient service is offered by NBMLHD at locations in Penrith and Katoomba, and many other services are located outside the NBM region, requiring significant travel. This travel burden presents a challenge for those requiring ambulatory detoxification, particularly individuals who need to maintain family contact during inpatient programs. Moreover, there are no identified culturally secure services in the region that specialise in AOD services for Aboriginal and Torres Strait Islander people. While services such as Marrin Weejali, an Aboriginal Community Controlled Health Organisation (ACCHO), are available just outside the regional boundaries near Penrith, there remains a need for culturally appropriate services within the region.

Selective Access Criteria [9]

There are highly selective criteria for accessing local residential rehabilitation services in or close to the NBM region, primarily targeting young men or adult men who are at risk of homelessness or currently homeless.

Local services within the NBM region include ONE80TC (formerly Teen Challenge), located in Richmond, which offers long-term residential rehabilitation for males aged 18-35 years. The program is 12 months in length, and detoxification is required prior to entry. The facility focuses on life skills and management, with some flexibility to accept clients with co-morbid conditions on a case-by-case basis. Additionally, WHOs West in Penrith provides residential care for both men and women, offering assessment, referral services, and supported care for individuals from the NBM district. WHOs West has six transitional housing beds in Penrith and seven residential care beds at the Rozelle Campus.

Several key issues affect the availability and access to residential rehabilitation services in the region. For one, state-funded residential rehabilitation beds for the NBM region are located outside the region, approximately one hour's drive from the eastern border and Penrith. While ONE80TC

is the only non-government organisation (NGO) providing residential rehabilitation within the NBM region, its services are selective, offering long-term rehabilitation (3 to 12 months) for men. Additionally, Adele House, situated in Werrington on the eastern border of the region, provides a 9–12-month rehabilitation program for adult men at risk of homelessness. This facility offers MERIT (Magistrates Early Referral into Treatment) beds.

Like other alcohol and other drug treatment categories, a range of metropolitan residential rehabilitation services is available, though these require significant travel by train or road. Many of these services are private hospitals, necessitating private health insurance coverage, and lengthy travel presents a barrier for participants, particularly those needing to maintain contact with family during their stay. Furthermore, there are no self-indicated culturally secure residential rehabilitation beds available for Aboriginal and Torres Strait Islander people in metropolitan Sydney or the NBM region.

Access for Women [9]

Improved access to services for women, particularly women with children, was identified as the highest priority in community consultations. The NBMLHD has expanded its drug and alcohol program for Substance Use in Pregnancy within the Penrith LGA, with plans to extend outreach to other LGAs, including the Blue Mountains, Lithgow, and Hawkesbury.

ONE80TC has established a women's residential facility in Kurmond (Hawkesbury LGA), but it does not accommodate women with children. Meanwhile, the NBMPHN funds specialised dual diagnosis day rehabilitation services for women in Katoomba and Lithgow through Dianella Cottage. Additionally, the NBMLHD has expanded the Substance Use in Pregnancy program to address the needs of this vulnerable population.

Early Intervention

There are significant gaps in early intervention and shared care models between regional drug and alcohol services and general practice in the NBM region. Preliminary consultations with service providers have revealed that drug and alcohol presentations make up around 20% of all emergency department visits [9]. It is estimated that one in four inpatients could qualify for drug and alcohol treatment, though many of these individuals are unaware they have a problem. Excluding detoxification, drug and alcohol-related hospital separations rank among the top five medical diagnosis groups, with an average of 80 separations per month. However, challenges remain in obtaining consultations for patients presenting with drug and alcohol issues in emergency departments and other hospital services. Currently, there are no formal mechanisms for shared care or advice between the regional drug and alcohol service and general practitioners [9]. NBMPHN has implemented a general practice liaison service in Katoomba and Lithgow regions, provided by Lives Lived Well, however funding for this ends June 30, 2025.

The region also faces challenges related to access to early intervention, counselling, and aftercare services. There are strong indications that these services are fragmented and inadequately resourced. Limited hours and availability of counselling further exacerbate the situation. Aftercare, which is crucial to prevent relapse following treatment, remains underfunded and lacks a systematic approach.

Consultations and reviews of drug and alcohol services in the region have identified several specific issues. These include a lack of after-hours services, especially for youth aged 12-20 years, and a shortage of addiction medicine specialists in community settings. Staffing levels are low, leading to long waiting lists, and outreach clinics for youth are very limited. Additionally, many general practitioners have limited experience in dealing with drug and alcohol clients, resulting in poorer access to services for Aboriginal and Torres Strait Islander people. Overall, drug and alcohol services are hampered by inadequate staffing, restricted hours of operation, and barriers for youth and Indigenous clients [9].

Mistrust of Authority Figures [177]

Young people, particularly those from unstable family situations, tend to have a general mistrust of authority figures, including general practitioners, psychiatrists, and counsellors, and are often unwilling to present to primary care with AOD issues as their primary health concern. Previous focus group discussions with at-risk students, who are typically from unstable family environments involving violence and substance abuse, homelessness, or involvement with the juvenile justice system, highlighted several key issues. Participants expressed an unwillingness to seek help from authority figures such as general practitioners and police. There was also a noted mistrust of psychiatrists and counsellors, which stemmed from their personal experiences. However, they were more willing to trust youth workers from a local youth centre. The focus group discussions also emphasised the interconnectedness of substance abuse with grief and trauma, with participants relating the onset of their own substance dependence, and that of family members, to traumatic events such as childhood sexual abuse, the suicide of a family member, or the death of a child. Additionally, the issue of intergenerational substance misuse within families was raised, indicating a predisposition to substance dependence.

A survey conducted among 19 general practitioners and Neighbourhood Centre managers in the Blue Mountains Local Government Area found that only a small proportion of patients presented with AOD issues as their primary health concern. However, it was noted that a significant proportion of patients had underlying substance use problems. Alcohol was identified as the most prevalent substance causing issues. General practitioners identified young people and those with dual diagnoses as the groups most in need of services, while centre managers highlighted young people as the population most in need of AOD services. Substance use was found to be prevalent among disadvantaged clients and their families. The groups identified as the highest priority among service providers were women with children, young people from disadvantaged families, individuals with dual diagnoses, and Aboriginal and Torres Strait Islander people.

Workforce Capacity [9]

There is a general view that the workforce capacity for drug and alcohol services in the region could be significantly improved through enhanced training and skills development. Stakeholders have highlighted several concerns, including the poor or non-existent engagement of individuals who use drugs by local general practitioners (GPs). There is a need to increase GPs' knowledge of available clinical and non-clinical services, along with their associated referral pathways. GPs also require greater capacity to identify early signs of substance use problems in their patients. Health professionals need trauma education, while dual diagnosis education, which covers both drug and alcohol use and severe mental illness, is lacking for GPs. Furthermore, there is insufficient support and supervision for private therapists dealing with dual diagnosis cases, and there is a lack of support workers available after hours and on weekends.

Consultations with primary care providers in the NBM region, including GPs and pharmacies, in 2019 sought to better understand how a "Communities of Practice" framework for alcohol and other drug treatment could be implemented. These consultations revealed that GPs with a greater interest and experience in working with AOD issues still faced similar barriers and challenges as their colleagues with less experience. These challenges primarily revolved around inadequate access to local support services for their patients, including pharmacies that dose under the Opioid Treatment Program and specialised services such as Pain Clinics. GPs noted that they were not equipped to manage the continuum of care required for patients needing AOD treatment.

Pathways in and out of specialised treatment, such as community-based counselling and treatment services, withdrawal management, OTP, or residential services, were not accessible to GPs.

Additionally, GPs often lacked the time or resources to follow up on these services, and how these external services operated was not clear to them. Time constraints and patient engagement issues further complicated GPs' confidence and ability to provide consistent care, contributing to their reluctance to take on patients with complex presentations. Despite these challenges, GPs acknowledged that AOD care is an important part of their work and indicated that improved access to information, resources, training, and a specialist or peer support framework would be beneficial. However, the COVID-19 response has consumed much of General Practice's attention, putting additional strain on the workforce, and creating a barrier to engaging GPs in the development of an AOD-focused network in the region.

There is a significant shortage of Aboriginal and Torres Strait Islander health workers in drug and alcohol services, further highlighting the need for culturally appropriate care.

To address this gap, NBMPHN commissioned training for Aboriginal and Torres Strait Islander people to obtain a Diploma in Mental Health, specialising in AOD, was introduced. By June 2019, nine Aboriginal and Torres Strait Islander students graduated from the Poche Program and began working in the Nepean Blue Mountains region, effectively more than doubling the number of trained Aboriginal and Torres Strait Islander workforce in AOD and mental health services.

Additionally, the Ted Noffs Foundation was commissioned to deliver early intervention programs for Aboriginal and Torres Strait Islander young people through two linked initiatives. The first program, Deadly Dreaming, provides early intervention in high schools across the region. The second program, Case Management & Support, follows Deadly Dreaming by offering ongoing support to Aboriginal and Torres Strait Islander young people and their families identified as being at risk. Preliminary results from these programs indicate that between 50-80% of Aboriginal and Torres Strait Islander young people in NBM high schools are at high risk for substance use and self-harm.

Culturally Safe Services [9]

There is inadequate access to culturally secure detoxification, rehabilitation, and aftercare services in the Nepean Blue Mountains region. Previous concerns raised by service providers in 2010 highlighted several barriers to effective service delivery for Aboriginal and Torres Strait Islander people involved in substance use. These concerns included the lack of aftercare support for individuals returning to environments where they faced peer pressure to resume substance use

following rehabilitation. Service providers also identified the need for training to raise awareness of the connection between substance use and issues stemming from the Stolen Generation.

Recommendations for improving access included developing strategies to engage young people at risk of transitioning from substance use to addiction, offering soft entry points to alcohol and other drug (AOD) treatment when issues arise in the context of other services, and providing post-treatment support for Aboriginal and Torres Strait Islander people who had completed residential rehabilitation programs. Additionally, the need for a culturally secure drop-in centre staffed by both male and female Aboriginal and Torres Strait Islander workers was emphasised.

In response, the WHOS Penrith Hub for day rehabilitation has been established in collaboration with Marrin Weejali Aboriginal and Torres Strait Islander Corporation. This service supports two trained Aboriginal and Torres Strait Islander workers who provide culturally safe care to NBM Aboriginal and Torres Strait Islander residents. Without this collaboration, Marrin Weejali, located in Western Sydney, would not be able to deliver culturally secure services directly to the NBM region.

DISASTER AND EMERGENCY MANAGEMENT

Health Needs

Temperature Related Illness

Since national records began in 1910, Australia's climate has warmed by an average of 1.51 ±0.23°C [178]. Penrith and the greater Nepean Blue Mountains region are increasingly experiencing extreme heat days, with temperatures often surpassing 50 degrees. This frequency of extreme heat events is higher than in other parts of Greater Sydney, driven by several key factors such as lack of cooling sea breezes, low annual precipitation, and urban development that intensifies the Urban Heat Island (UHI) effect. Penrith's location in a low-lying area of the Hawkesbury-Nepean Valley creates a natural heat trap due to limited air circulation, especially during summary. This effect is exacerbated by the presence of clay-rich soils that retain heat, further elevating daytime, and night-time temperatures across the region. The UHI effect is especially pronounced in the urban core of Penrith, where areas like St Marys can be up to 2.4 degrees warmer at night compared to less developed surrounding regions. The UHI effect results from heat retention in areas with extensive hard surfaces, such as roads and buildings, which absorb heat during the day and release it slowly at night. This leads to persistently high night temperatures that prevent cooling relief, contributing to increased health risks, especially among vulnerable populations [179].

The region's primary weather station is located on the outskirts of Penrith's urban areas, near the Penrith Lakes, a series of artificial lakes developed from former quarry sites. The station's position outside the densely built-up regions means it may not fully capture the UHI effects experienced within Penrith's central areas [179].

High temperatures, particularly those reaching or exceeding 50 degrees, have been shown to exacerbate heat related illnesses, including heat exhaustion, dehydration, and in severe cases, heatstroke. The heat events in Penrith are linked to increases in emergency presentations. The elderly, young children, and individuals with pre-existing health conditions are particularly at risk. In urban areas with high UHI effects, these populations face heightened risks due to prolonged retention of heat, which limits cooling at night and prevents adequate recovery from daily heat exposure. Extended periods of extreme heat are also linked to increased mental health burdens, including stress, anxiety, and fatigue, particularly in communities experiencing frequent emergency events. The Climate Council's 2023 survey reported that 51% of people impacted by recent disasters reported mental health challenges with a significant portion experiencing moderate to major impacts [179].

For each degree increase in maximum daily temperature, there was a 20% increase in the likelihood of an emergency department presentation for health-related issues. A study following the ED presentations for heat related illness over the 2017/18 and 2018/19 summer periods in Western Sydney found the median age of individuals presenting with heat related illnesses was 44 years, with ages ranging from 1 to 89 years. A majority of those affected were male, accounting for 68% of cases. 53% of patients were classified a triage category 3, indicating potentially life-threatening conditions, while 16% were in category 2, meaning their condition was imminently life-threatening. 73% of patients were discharged after treatment in the ED, while 21% required hospitalisation. Almost all individuals had been exposed to heat while outdoors, either working or engaged in

recreational activities. Specifically, 29% were involved in outdoor work, such a manual labour, 13% were doing outdoor housework, and 26% were partaking in recreational activities such as bushwalking or cycling. The study noted that it likely missed older adults and individuals with chronic conditions who were exposed to head within in their homes [180].

Review of Nepean Blue Mountains admission data notes that there is a clear seasonal trend in heat related admissions, peaking in the summer months of January and February each year. In both 2019 and 2020, there were high numbers of heat related admissions, with 62 in January and 55 in November 2019, and 42 in January 31 in February and another resurgence with 55 in November 2020. There were noticeable fluctuations in heat related admissions year to year. January 2019 saw 62 admissions, while January 2020 had 42, and January 2021 saw a much lower peak of just 15 admissions [181].

Cold related admissions predictably rose in the winter months, peaking in June, July, and August. The highest admissions for cold-related cases consistently occurred in July and August. n 2021, there were 35 admissions in both June and July, while in 2022, June saw 36 admissions and July saw 35. Admissions remained steady in the colder months but dropped significantly in warmer months, with only two cold-related admissions in February 2023 [181].

Environmental Disasters

The Bureau of Meteorology reports that extreme fire weather and fire seasons have increased across much of the country since the 1950's. Additionally, heavy short-term rainfall events are becoming more intense [178]. Residents impacted by natural disasters face increasing health challenges. Australia's bushfire prone regions have experienced severe health impacts, particularly during the 2019-20 bushfires, which caused a spike in hospital issues for respiratory issues and burns. The death toll from bushfires increased 15-fold in 2019-20 compared to previous years [182]. Poor air quality, particularly from pollutants like fine particulate matter (PM2.5), presents a serious health risk, leading to increased rates of respiratory and cardiovascular illness. These fine particles are capable of penetrating deep into the lungs and even entering the bloodstream, which can worsen conditions such as asthma, COPD, and heart disease. During extreme events like bushfires, air quality can deteriorate dramatically, as seen in the 2019-20 Australian bushfires, where PM2.5 levels soared to hazardous levels in cities like Canberra and Sydney. Air pollution is a well-established risk factor for non-communicable diseases and can severely affect vulnerable populations, including the elderly, children, and those with pre-existing health conditions. Exposure to high pollution level can not only aggravate existing respiratory conditions but also contribute to the development of chronic diseases over time [183].

Storms and heavy rains lead to injuries such as drownings, falls, and injuries from debris. Between 2012 and 2022, there were 348 hospitalisations and 77 deaths related to rain and storms in Australia. Younger males and those in remote areas are at a higher risk during flood events [182]. Flood events pose a heightened risk for physical injuries, waterborne diseases, and lasting mental conditions, such as post-traumatic stress disorder. Remote communities are especially vulnerable, facing higher rates of drowning incidents and experiencing significant post-disaster trauma. Additionally, heavy rainfall during these events can degrade water quality by introducing contaminants into water sources, which in turn compromise drinking water safety and raises the likelihood of disease transmission [183].

Community consultations conducted for the NBMPHN Flood Needs Assessment and Bushfire Needs Assessment revealed several key issues. In flood-affected areas, residents who rely on tank water lost access to fresh drinking water, leading to concerns about basic hygiene and sanitation. Additionally, the combination of floodwaters and humid weather has promoted the growth of mould, exposing people to respiratory risks [184].

Physical health problems have also been reported, with some residents developing sores on their legs due to exposure to contaminated water. During bushfire season, asthma-related emergency department presentations have surged, reflecting the impact of poor air quality on respiratory conditions. There is a significant risk of isolation and homelessness as communities struggle to recover [185].

Individuals and communities can potentially face and experience greater risks of loss, injury, illness, and death during disasters. People may have impaired mobility and multiple chronic health conditions, and/or social and economic limitations with one or more of these characteristics reducing their ability to prepare for, respond to, and adapt during disasters.

Disaster may also disrupt vital support systems people with vulnerabilities may rely on. Vital services may be unavailable resulting in increased susceptibility of vulnerable populations to the impact of disasters. Aboriginal and Torres Strait Islander people were among those most affected by the 2019–2020 bushfires in south-eastern Australia. Aside from renewed public interest in cultural burning practices, Aboriginal and Torres Strait Islander people have received little attention in relation to post-bushfire response [186]. People from culturally and linguistically diverse backgrounds, are considerably less aware than others of emergency recovery communication and of the opportunities to become involved in either emergency preparedness or recovery activities [187].

Disasters such as floods and bushfires have a profound impact on public health, particularly exacerbating chronic health conditions. These events significantly worsen respiratory illnesses like asthma, which are highly sensitive to environmental changes, especially due to the increased levels of air pollution generated during bushfires. Smoke and particulate matter from fires, coupled with humidity and mould growth after floods, lead to severe respiratory issues. People with pre-existing conditions, such as asthma or COPD, face heightened risks during such events, often requiring medical intervention or hospitalisation [188]. During the 2019-20 bushfire season, Nepean Blue Mountains saw more than 2600 ED presentations for asthma like illness (covering FY year 18/19 and 19/2020) this steeply declined in the following years where there were less than 2000 presentations in 20/21 and 21/22 [189].

Lower socioeconomic communities are disproportionately impacted by climate-related stressors. These groups often live in areas with inadequate infrastructure to withstand extreme weather events and have limited access to health services, making them more vulnerable to the adverse health outcomes caused by disasters. Financial constraints can also make it difficult for these individuals to afford necessary healthcare or relocate from high-risk areas [188].

Coping Mechanisms [9]

The cumulative effects of natural disasters have led to a rise in the use of drugs and alcohol as coping mechanisms. In areas heavily impacted by the Victorian bushfires, residents reported a 25% increase in heavy drinking. This pattern was similarly observed in the NBM region following the 2019 bushfires, where workers reported an increase in alcohol consumption. Consultations with an Aboriginal and Torres Strait Islander support workers highlighted an increase in drug and alcohol use among residents to manage the stress and trauma caused by the disasters. There has also been a growing dependence on, and misuse of, antidepressants as part of this coping strategy.

Increase of Domestic Family and Sexual Violence

Evidence from Black Saturday bushfires and other disasters indicates a rise in domestic family violence following such incidents. The intense pressure of not meeting traditional male roles, such as being the protector or provider, during crises can drive some individuals towards violent behaviours. Unfortunately, emergency management frameworks often overlook domestic family violence, missing key opportunities to provide targeted support during and after disasters [53].

Impact of Natural Disasters on Mental Health

Extreme weather events, such as floods and bushfires, significantly impact mental health, particularly amongst young people. These events often result in increased psychological distress, anxiety, and depression [190]. This is evident in the aftermath of the disasters that have impacted the NBM region, where residents, particularly young people have reported heightened levels of anxiety and trauma due to the cumulative effects of repeated disasters.

Young people who have been affected by floods and bushfires have experienced disruptions to their education, social lives, and daily routines. The psychological impact is compounded by the prolonged recovery process, during which many families remain displaced and are dealing with ongoing damage and rebuilding efforts [184].

COVID-19 Impacts on Population Forecast

COVID-19 is expected to cause a significant decline in Australia's population growth. The pandemic has led to a reduction in both net overseas migration and natural population increase, which are the two main drivers of population expansion. Australia's strict border closures during the pandemic have play a crucial role in reducing migration. The lack of international students, skilled workers, and other migrants entering the country is expected to have long term implications. The economic instability caused by the pandemic has led to uncertainty for many families. As a result, some are likely to delay having children which would further slow population growth in the coming years [191].

COVID-19 Impacts on Screening and Chronic Disease Management

BreastScreen services were suspended in March 2020, with a phased reopening starting in late April. This caused a sharp decline in screening mammograms, particularly during April 2020. Screening numbers rebounded by July and surpassed 2018 levels by September. Women aged 60 and over returned quicker than those under 60, with younger women slower to resume pre-pandemic levels of screening. Recovery also varied geographically, with women in remote areas and lower socioeconomic groups slower to return to screening compared to others [192].

The National Cervical Screening Program was not suspended during the pandemic, but in-person consultations were affected by COVID-19 restrictions. As a result, the number of screening tests fell in March and April 2020, and remained lower in May and June. Older individuals, particularly those aged 60 and above were less likely to return to cervical screening after restrictions were lifted [192].

The National Bowel Cancer Screening Program, which relies on mailed test kits, was less affected by the pandemic compared to other programs. There were some fluctuations in the number of invitations sent out, however, these did not show a direct pattern link to COVID-19 restrictions [192].

Compliance rates among NBM diabetic patients with glycaemic testing guidelines remained stable throughout the COVID-19 pandemic. Additionally, there was a marginal improvement in glycaemic control noted across all patient subgroups over this period. Nonetheless, the enduring effects of COVID-19 on the management of type 2 diabetes remain uncertain [193].

36% of respondents to the NBM Community Health and Wellbeing Survey indicated they had missed a preventative health check due to an emergency or disaster [2].

COVID-19 Impacts on Mental Health

In Australia, the initial impacts of the pandemic had increased levels of psychological distress, particularly for adults aged 18–45 with mental health on average having a greater impact on life satisfaction than physical health [194].

The social, economic and health conditions created by COVID-19 have also increased the prevalence of mental ill health in the Australian population and 3.2% of suicides reported in Australia between 2019 and 2020 cited the COVID-19 Pandemic as a direct or indirect risk factor. It is important to note however that of these patients 60% also have mood disorders, over 50% had problems relating to employment/unemployment and 25% also had problems related to their social environment including feeling isolated [195].

Service Needs

Health Service Resilience

The health system must be resilient to cope with the impacts of climate-related disasters, ensuring continuous access to essential services such as mental health support, housing assistance, and medical care during and after these events. Disasters like floods and fires can disrupt healthcare infrastructure and access to critical resources, making it essential for health services to adapt and maintain service continuity in times of crisis [184].

As the health burden from climate change grows, it is placing increasing pressure on the sustainability of the healthcare system. Rising temperatures, air pollution, and extreme weather events are leading to more frequent and severe health conditions, which the current system must address. To cope with these challenges, significant investment is required to expand healthcare capacity and build systems that can continue providing services during future climate-related disasters [196].

Governments, policymakers, and health leaders must commit to transitioning toward a resilient healthcare system. This includes efforts to reduce the carbon footprint of the healthcare sector and take actions that ensure both the long-term prosperity of populations and the environment. Additionally, healthcare systems must be prepared for compound and cascading disasters, such as simultaneous floods, fires, and pandemics, through planning for medical stockpiles and establishing mechanisms for regular information sharing between jurisdictions. By taking these proactive measures, the healthcare system will be better equipped to manage the increasing demands brought on by climate change and disasters [196].

Workforce Impacts

Sudden-impact disasters, such as floods and fires, cause significant social disruption and place additional pressures on health service delivery. These events lead to a surge in demand for medical care, requiring the healthcare system to quickly adapt to manage the increased patient load. In response, there is a pressing need to expand the health workforce, including GPs, specialists, and volunteers, to cope with surge capacity both during and after these disasters [9].

To ensure the safety and effectiveness of the healthcare workforce during such crises, specific risk matrix development is necessary. This approach would help prioritise the health and safety of medical staff, particularly when faced with converging disasters that overlap in their impacts, such as simultaneous floods and heatwaves. The healthcare system must also be prepared to address the additional pressures caused by higher temperatures, air pollution, and climate change-related morbidity, especially among vulnerable populations like the elderly, who are particularly susceptible to these risks [196].

Planning is also required to support the mental health of emergency responders and health professionals. Providing mental health training focused on trauma recovery is essential for building resilience within the healthcare workforce. Tailored mental health support is especially critical for emergency responders and volunteers who may experience post-traumatic stress disorder (PTSD), depression, and anxiety because of their work in disaster settings. Addressing these mental health challenges will help maintain the wellbeing of healthcare workers and ensure they can continue to provide vital services during and after emergencies [197].

71% of respondents to the NBM Community Health and Wellbeing Survey that indicated they could not access their usual health services reported that they were unable to access their usual GP, 36% could not access their allied health professional, 30% could not access their usual pharmacy, 26% could not access their local hospital. 30% did not seek alternative services, 43% used telehealth services with their usual provider, and 19% visited a different healthcare provider [2].

Disaster Preparedness and Response

Emergency preparedness in the health sector must focus on the ability to rapidly mobilise healthcare services in response to extreme weather events. This means healthcare systems need to be flexible and well-coordinated to meet the increased demands during and after disasters. The ability to respond quickly is crucial to ensuring that essential healthcare services remain accessible to those in need during critical times. Healthcare providers, particularly general practices, must have emergency response plans in place and be well-stocked with necessary supplies to operate effectively during crises. Having a solid plan ensures that practices can continue providing services

despite disruptions. It also allows them to adapt to emergencies, minimizing downtime and service disruptions [9].

At the community level, disaster preparedness should aim to improve access to essential services such as housing, financial aid, and mental health support. These services play a key role in recovery and must be easily accessible during and after a disaster. General practices are especially vulnerable to risks of closure during these times, with potential damage to infrastructure, loss of staff, and increased demand for healthcare services putting significant strain on their operations [184].

Patients should also be proactive in preparing for disasters by having personal medical action plans in place. This includes having medication lists readily available, either physically or uploaded to platforms like My Health Record, ensuring that critical health information is accessible during emergencies.
Initiatives must be established to ensure that primary care volunteers and general practitioners are registered and ready to provide continuous services during disasters. Pre-registering healthcare workers ensures that they are available when needed most, helping maintain healthcare continuity even in challenging circumstances [9].

It is essential to recognise that climate change exacerbates existing health inequities, as vulnerable populations are disproportionately affected by extreme weather events. Addressing these disparities requires targeted strategies to ensure that these communities receive the support and resources needed to withstand and recover from climate-related disasters [196].

People with disabilities and chronic health conditions face unique challenges during emergencies, making additional support essential for their safety and wellbeing. Research indicates that individuals with disabilities are two to four times more likely to dies in a disaster than the general population. They often encounter significant barriers to evacuation and sheltering and face higher risks of property loss [198, 199].

Disability support services are a cornerstone of emergency preparedness for people with disabilities, providing critical continuity of care. These services are uniquely positioned to support preparedness due to their close relationships with clients, allowing them to understand and respond to individual needs more effectively. NDIS have implemented policy requirements to bolster this support. Service providers are now mandated to ensure the continuity of critical supports, incorporating emergency risk assessments and preparedness into individual support strategies. Training is essential for effective preparedness. Disability service providers, community organisations and emergency responders need targeted training to understand and meet the additional support needs of people with disabilities in emergencies [198, 199].

46% of respondents to the NBM Community Health and Wellbeing Survey indicated they have a plan for managing their health during an emergency. 62% of respondents that reported they have a disability indicated they have a plan for managing their health during an emergency compared to only 53% who reported having a chronic condition. 58% of respondents indicated they do not have a plan for accessing their prescriptions during an emergency or disaster. 48% of those with a chronic condition have a plan for accessing their prescriptions, compared to 54% of those with a disability. 94% of respondents indicated that their GP had not spoken to them about planning for their health condition during an emergency [2]. Of those who looked for information regarding health services

and resources during an emergency or disaster, 69% of respondents were able to locate the information they needed with most people accessing information from their own health provider or a community service such as the SES [2].

Trauma-informed Care

Trauma-informed care training is essential for local health workforces to effectively address the mental health issues that arise in the aftermath of disasters. Expanding the capacity of mental health professionals to respond to trauma associated with extreme weather events is critical, as the psychological impacts of these events can be long-lasting and widespread. Establishing protocols to ensure the safety and protection of responders is necessary to prevent compromising other aspects of disaster response. By focusing on trauma-informed care, healthcare systems can better support individuals affected by disasters and ensure that responders are equipped to handle the mental health challenges they may encounter [9, 196].

Education and Capacity Building [9]

There is a pressing need for education programs that focus on disaster resilience and climate change, targeting both the public and health professionals. These programs are essential for improving preparedness and response to the increasing frequency and severity of climate-related events. By equipping people with the knowledge and skills to manage the health impacts of disasters, communities and healthcare providers can be better prepared to respond effectively.

Public health education initiatives play a key role in promoting preventative health actions, which help reduce the overall burden on the healthcare system during disasters. Developing educational resources for General Practices and communities is also critical for building capacity, reducing strain on healthcare services, and ensuring appropriate health responses both during and after emergencies.

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