phn MURRAY

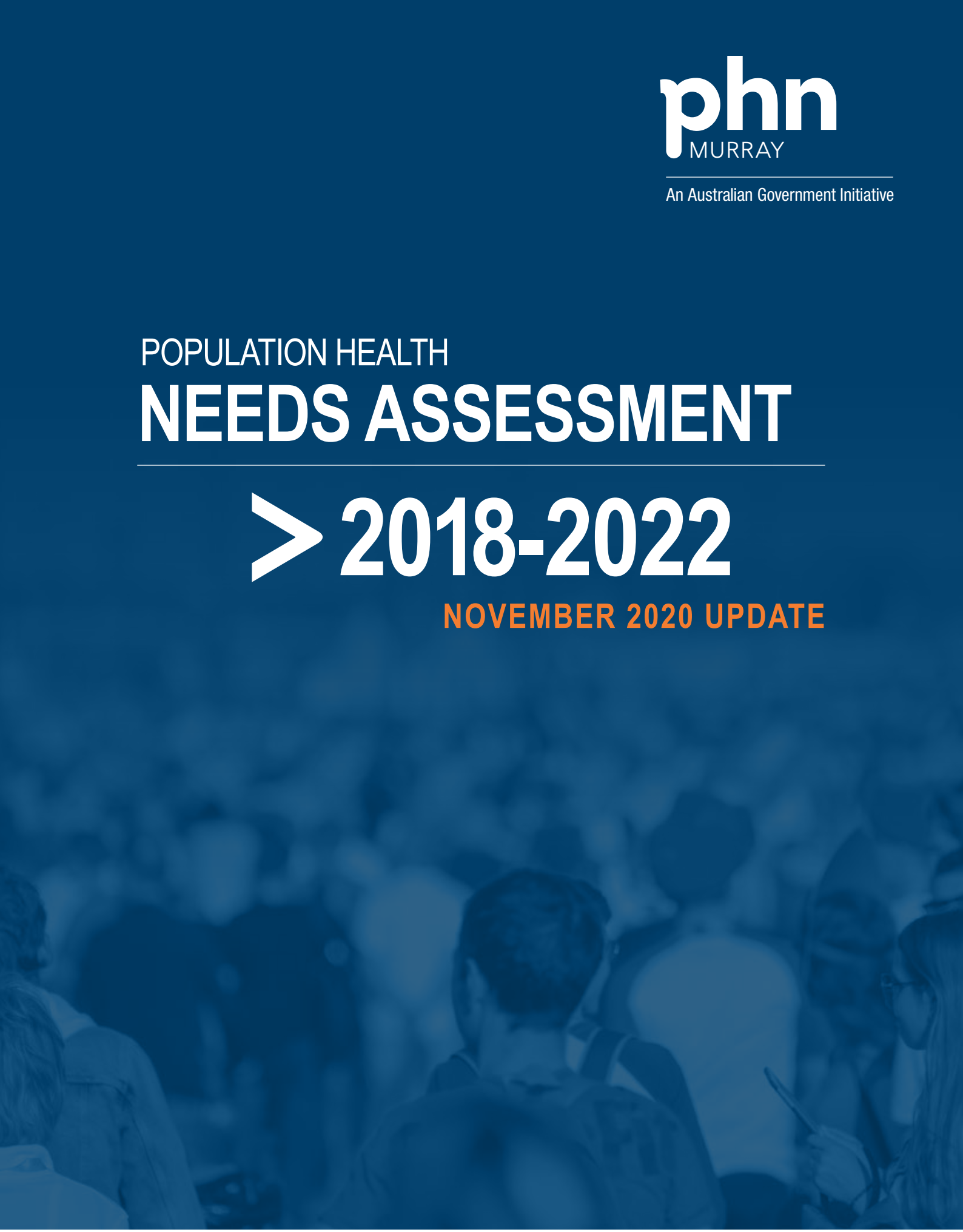
An Australian Government Initiative

POPULATION HEALTH

NEEDS ASSESSMENT

> 2018-2022

NOVEMBER 2020 UPDATE



Leadership | Collaboration | Knowledge | Innovation | Accountability

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Murray PHN acknowledges the Traditional Owners of the land on which we work and live. We recognise, celebrate and respect Aboriginal and Torres Strait Islander people as the First Australians.

We acknowledge their unique cultural and spiritual relationships to the land and waters, as we strive for healing, equality and safety in health care.

We pay our respects to their elders past, present and emerging, and extend that respect to all First Nations peoples.

This Needs Assessment was accepted by the Department of Health (Commonwealth) in March, 2021.

The programs and initiatives outlined within have been made possible through funding provided by the Australian Government under the PHN Program.

Abbreviations

ABS	Australian Bureau of Statistics
ACCOs	Aboriginal Community Controlled Organisations
ACP	Advanced Care Planning
ACSC	Ambulatory Care Sensitive Conditions
ADHD	Attention Deficit Hyperactivity Disorder
ADIS	Alcohol and Drug Information System
AEDI	Australian Early Development Index
AH	After Hours
AIHW	Australian Institute of Health and Welfare
AOD	Alcohol and Other Drugs
AS	Age Standardised
ATAPs	Access to Allied Psychological Services
BEACH	Bettering the Evaluation and Care of Health
CALD	Culturally and Linguistically Diverse
CANSAS	Camberwell Assessment of Need Short Assessment Scale
CDM	Chronic Disease Management
CHF	Congestive Health Failure
CHSP	Commonwealth Home Support Program
COPD	Chronic Obstructive Pulmonary Disease
CoS	Continuity of Support
CPD	Continuing Professional Development
CPI	Consumer Price Index
CV	Central Victoria – Murray PHN region
CYMHS	Child and Youth Mental Health Services
DET	Department of Education and Training
DHHS	Victorian Government Department of Health and Human Services
DHSV	Dental Health Services Victoria
DoH	Australian Government Department of Health
DVA	Department of Veterans Affairs
ED	Emergency Department
ENT	Ear Nose Throat
FOBT	Faecal Occult Blood Test
GP	General Practitioner
GPMP	General Practitioner Management Plan
GSD	Gender and Sexually Diverse
GV	Goulburn Valley – Murray PHN region
HPV	Human Papillomavirus
IARE	Indigenous Areas (statistical geographic unit)

IT	Information Technology
K10	Kessler 10 Psychological Distress Scale
LGA	Local Government Area
LGBTIQA+	Lesbian Gay Bisexual Transgender Intersex Queer
LHN	Local Hospital Network
LMM	Loddon Mallee Murray
MBS	Medicare Benefits Schedule
MH	Mental Health
MHNIP	Mental Health Nurse Incentive Program
MHSSRA	Mental Health Services in Rural and Remote Areas
MHTP	Mental Health Treatment Plans
MMM	Modified Monash Model
MPHN	Murray Primary Health Network
MRI	Magnetic Resonance Imaging
MTOP	Medical Termination of Pregnancy
MyHR	My Health Record
NBCSP	National Bowel Cancer Screening Program
NDIS	National Disability Insurance Scheme
NE	North East – Murray PHN region
NFP	Not for Profit
NW	North West – Murray PHN region
OOHC	Out of Home Care
PAH	Potentially Avoidable Hospitalisation
PATCAT	Practice Aggregation Tool for the Clinical Audit Tool
PCP	Primary Care Partnership
PDSA	Plan Do Study Act
PHIDU	Public Health Information Development Unit (Torrens University)
PHN	Primary Health Network
PIP	Practice Incentive Payment
PIR	Partners in Recovery
PMHCCC	Primary Mental Health Clinical Care Coordination
PTS	Psychological Therapy Services
RACF	Residential Aged Care Facility
RACGP	Royal Australian College of General Practitioners
RFDS	Royal Flying Doctor Service
RIPERN	Rural and Isolated Practice Endorsed Registered Nurse
RWA	Rural Workforce Agency Victoria
SA	Statistical Area
SEIFA	Socio Economic Indexes for Areas
SES	Socioeconomic Status

SR	Standardised Ratio
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infections
STOP	Surgical Termination of Pregnancy
TCA	Team Care Arrangement
UCC	Urgent Care Centre
VACCHO	Victorian Aboriginal Community Controlled Health Organisation
VAED	Victorian Admitted Episodes Dataset
VCAMS	Victorian Child and Adolescent Monitoring System
VEMD	Victorian Emergency Minimum Dataset
VHISS	Victorian Health Information Surveillance System
VPHS	Victorian Population Health Survey

INTRODUCTION

About our region

Murray PHN operates across 22 local government areas across the north of Victoria, along the Murray River. The region is a diverse area that covers almost 100,000 square kilometres of mountains, semi-deserts and regional cities. With close to one third of all Victorian Aboriginal persons living in the Murray PHN region, there are several different Traditional Owners and Aboriginal language groups on whose land we live and work.

Structure of the Needs Assessment

The Murray PHN Needs Assessment 2018-22 is presented as a comprehensive analysis of health and service needs, organised under our 10 strategic health priorities. Alignment to our health priority areas provides a strategic focus for our work and demonstrates the depth of needs and knowledge we have in each area. There are several “in focus” areas within the Needs Assessment which provide a more in-depth description of a health issue or population group. The information presented in focus is the result of a concentration of effort to improve understanding and inform future activity.

Needs Assessment Updates

Our Needs Assessment is updated annually for submission to the Commonwealth Department of Health. Each update includes a comprehensive review and update of the data presented across the 10 strategic priority areas. The sections titled *Emerging Issues in Rural and Regional Health* and *Service System Challenges* are updated annually providing an exploration of social and system issues which have emerged over the past 12 months and are impacting on the health of our communities. The *Community Voice* section provides a summary of the community and health sector consultations that have occurred during the previous year and also includes the activity of the clinical and community advisory councils.

Process

The needs analysis is informed by a foresight methodology (Conway & Voros 2001) that moves from problem/gap identification through to options and opportunities that then inform the choice of operational interventions. The Needs Assessment provides an analysis of the current health and service needs of the region, organised across the organisation’s 10 health priority areas.

The foresight process model that underpins the enquiry methodology has involved staff working with key stakeholders, colleagues and, where possible, consumers to strengthen the broader Murray PHN Needs Assessment.

Murray PHN Needs Assessment activity has likewise been supported by the clinical and community advisory councils across the region, along with Health Voices, which is our network of community members who can respond to and advise on Murray PHN activities electronically. These structures are bringing a deeper dimension to our understanding of health at the local level and are referred to in this document as “Community Voice”.

As part of the analysis, the professional judgment of PHN staff, stakeholders and service providers has been considered. Where possible, needs have been validated through feedback processes, and multiple sources of normative, felt, expressed, and comparative need were considered. Significant volumes of data have been sourced and reviewed to establish breadth of knowledge from key informants and provide some indication as to what is privileged through, or validated by, other funding drivers such as chronic disease management and service coordination.

Outcomes of the health needs analysis

Each health priority area includes information summarising the findings of the health needs analysis to-date, including risk factors, comorbidities and vulnerable populations.

The summary is not presented as an exhaustive list nor a comprehensive evidence base, as it has sought to strategically build on existing local knowledge and professional judgment as to what matters most for future planning.

Outcomes of the service needs analysis

Each health priority area includes a summary of the findings of the service needs analysis. The service needs were identified through consultation with consumers, stakeholders and advisory structures and informed through internal processes and reports. Analysed alongside the health needs, the service needs highlight where there are opportunities in respect of gaps in service provision, innovative approaches to complex issues, rural challenges and service needs of our diverse communities.

Key issues

The foremost issues identified across the region include:

- Ageing rural population within the Murray PHN region placing pressure on access to health services.
- Lower SEIFA scores than state and national median indicating high rates of disadvantage.
- Emerging health service access issues in relation to refugee health, women's health services, child health and aged care.
- Being home to a large and diverse range of Aboriginal and Torres Strait Islander communities.
- Higher avoidable mortality rates, poorer cancer survival rates, and lower life expectancy than metropolitan areas.
- High rates of psychological distress, self-harm and suicide.
- Limited access to specialist mental health services and targeted mental health care.
- GP Mental Health services per 100 people have shown a steady, marginal decline from 15.17 in 2015-16 to 14.36 in 2018-19 for the Murray PHN region (AIHW, 2020f).
- Physical health co-morbidities for people with mental health conditions.
- Higher than state average rates for co-occurring mental health and AOD disorders.
- ED presentations for co-occurring AOD and mental health disorders are increasing across the Murray PHN region.
- It is estimated that 16,529 persons identify as Aboriginal and Torres Strait Islander in the Murray PHN region. This represents 29% of the total Victorian Aboriginal and Torres Strait Islander population. Murray PHN has significant populations residing in the local government areas of Swan Hill, Mildura, Greater Shepparton and Greater Bendigo (ABS, 2018).
- A need for stronger partnerships with Aboriginal Community Controlled Organisations to ensure services support self-determination in meeting the needs of local Aboriginal and Torres Strait Islander communities.
- Limited access to geriatricians and GPs in residential aged care.
- An ageing population, rural location and implementation of NDIS is having an impact on the availability of carer support respite places (DHHS, 2018).
- Transitioning to NDIS is disrupting services, creating gaps and difficulties for people in the mental health, child health and aged care service systems, especially in rural areas of low population.

- Potentially avoidable hospitalisations for COPD and diabetes complications remain high across the region, while current Murray PHN projects are having some impact.
- Improved multidisciplinary coordination of care is required for people experiencing chronic disease, especially at the interface between acute and primary care services.
- Increased support is required for GPs to better meet the mental health, and other complex needs of children and young people.
- Improved systems for coordination of care for children and young people across the health and community services sectors.
- Lack of access in rural areas to paediatricians and child psychologists.
- Six “hotspots” identified in the Murray PHN region *at risk* of inadequate primary care access (general practice), and many other areas *vulnerable*.
- In 2018-19 in the Murray PHN region, 34% of GP Standard (Level B) consultations involve patients aged 65 years or over (AIHW, 2020f).
- Changing landscape of general practice such as working conditions (on-call and After Hours), MBS billing changes, and patient expectations are having disproportionate impacts in rural areas.
- Issues of rural health workforce recruitment and retention are ongoing.
- Limited availability or access to GPs continues to result in increased burden on EDs in rural and regional areas.
- Digital health challenges persist and relate to system limitations such as internet reliability, software interoperability, along with professional and consumer expectations about change management, previous negative experiences, and education.

Limitations

Population estimates

The Murray PHN region is home to several population groups that are known to be underrepresented in data collection instruments such as the census. It is well established that Aboriginal and Torres Strait Islander community participation in the census is inconsistent and the Victorian undercount rate hovers around 20% (Andrews 2018). The flawed count affects the purpose of the census, which is to provide and distribute services adequately, based on reliable population estimates. However, compiling a statistical profile of the Aboriginal and Torres Strait Islander populations of our region is not straightforward. Our ACCOs regularly report that the population they service is significantly greater than official numbers, therefore the information presented herein needs to be considered as a probable underrepresentation of actual figures.

The Refugee Health project implemented in 2017-18 focusing on the needs of Hazara refugees in the Murray PHN region also highlighted significant discrepancies in the official estimated population of refugees, compared to estimates provided by local community leaders. Across all areas within the Murray PHN region, Hazara community leaders estimated the local population to be at least double to the number reported in census information. Reasons for these discrepancies may include: people choosing not to participate in the census (this may be due to limited understanding of purpose, language, fear of government authorities); issues with online submission of census form; and new arrivals that have come to the locations after the census.

The North West and Goulburn Valley regions of the Murray PHN region are also home to large fruit and vegetable growing and processing industries that attract large populations of seasonal workers. In many cases, these workers are not captured in official population estimates due to the seasonal and transient nature of the work, the legal or visa status of the workers, and the general attitude of distrust of government. The impact on the health and community services within these regions is that the volume of

people they service varies significantly, and they experience workloads far greater than the population estimates would predict.

The other characteristic of the region to be considered is the tourism industry which the Murray River generates, and the influx of visitors to the region across the year. Impact of tourism on primary care services results in longer waiting times for appointments, increased After Hours service usage, and greater burden on EDs. It is also worth noting that locations in the Murray PHN region attract tourists of an older demographic, placing further burden on the primary care system.

Data availability

The Needs Assessment was prepared using local, state, national datasets and relevant literature, along with contribution from community, stakeholder and staff consultations and reports. In determining the data sources, several factors influenced the selection, being:

- a traditional suite of demographic data and a dataset related to health status, health behaviours and health conditions
- access in a form that was relevant to the Murray PHN region
- opportunity for ongoing time series data to be developed
- opportunity for data to be integrated into discrete projects, communities and population needs
- data governance and integrity.

Whilst a significantly large selection has been compiled, there are gaps identified in the work to date. These include:

- identified datasets have limited usefulness for analysis specifically for the Aboriginal and Torres Strait Islander population in the region because key data is not as available at the local level or by Aboriginal and Torres Strait Islander status
- EDs are no longer collecting Indigenous status. This will have implications for monitoring Aboriginal and Torres Strait Islanders presenting in crisis and impact of care coordination on chronic disease management
- inability to conclude whether the population is getting healthier or unhealthier because time series data is not presented
- inability to conclude whether Murray PHN is doing better or not as good as, than like PHNs (same age structure/SES profile) because the current comparator is either Victorian or Australian levels.

Murray PHN also engages with peak bodies and other relevant organisations to obtain data. It is often the case that data sharing agreements do not permit the widespread release or publication of the information. Such cases arise with the following:

- Coroners Court (suicide data)
- hospital admission data at postcode level (Victorian HosData)
- Victorian Emergency Minimum Dataset (VEMD).

Further complication is due to data sharing agreements, where there are often embargoes between the receipt of data by the PHN and the public release date. Sensitivities regarding publishing of localised service use data in that actual numbers of clients may compromise the de-identification of the data. Consequently, Murray PHN has access to such data which is used to guide strategy, planning and commissioning that is not presented here but does inform the organisation.

PHN Exchange

Through design and development of the PHN Exchange, Murray PHN has generated a centralised population health knowledge initiative that is:

- enterprise-wide and will embed a wide range of Murray PHN activities
- accessible to internal and external stakeholders
- transparent by publishing key information that is evidence-based about its commissioning design which reflects:
    - residents of the community who use the service system
    - data evidence relating to demographics, health conditions, behaviours and status.

Indicator and risk factor data has been compiled for each local government area within the Murray PHN region and automatic “hotspot” identification has been built into the PHN Exchange. This has been created with an increasing appreciation that developing health and service needs data over multiple years will better inform future decision-making. Future needs identification processes have been enhanced by development of outcome performance measures, providing opportunity for greater scope with predictive and trend analytics over time, as well as the increase in community participation through the advisory council structure.

GP data collected through specialised tools and software yields considerable data and is currently supporting GP engagement and quality improvement activities.

Notwithstanding the current gaps in health data and information, we will continue to consider the needs identification and assessment to be an ongoing and iterative process that is under continuing and progressive development.

It is within this context that we submit this Needs Assessment report, acknowledging our progress towards responsible and responsive planning and delivery within the primary health care sector across the Murray PHN region.

Future directions

Capture of data and information alone is inadequate to determine priority setting, systems change and resource mobilisation. Development of an evidence base for Murray PHN is ongoing and is on track to become a robust, trusted source on which solid analysis can be based and interpreted in a range of forms that stakeholders - including communities and specific population groups - can use. Since the initial Needs Assessment, Murray PHN has strengthened its future capability in knowledge management. The design and development of our population health knowledge base, known as the “PHN Exchange”, has been a significant milestone in the assembly of quality health-related information that is as contemporary, meaningful and as accessible as possible for broad stakeholder and community consideration.

EMERGING ISSUES IN RURAL AND REGIONAL HEALTH

2020 Update

COVID-19 & Health

On 11 March 2020, the novel Corona virus (COVID-19) disease was classified as a global pandemic. It triggered physical distancing and quarantine orders to mitigate its transmission. Initial impacts on communities as a result of the pandemic are widespread and considerable. As a result of prolonged isolation, imposed restrictions, and resulting unemployment, working-from-home, and social distancing requirements, individuals have suffered significant material and immaterial consequences. Victoria remains by far the most affected part of Australia in terms of number of COVID-19 cases, with a clear divide between metro and regional areas.

Psychological impact

Whilst published data regarding psychological impact of COVID-19 is scarce, some early findings from surveys and self-reported measures start to emerge. Recently published data from COVID-19 studies in China revealed significantly higher levels of anxiety along with increased negative emotions (e.g., depression) and decreased positive emotions (e.g., happiness) in the general population. Some findings were corroborated and expanded on in a Spanish study, where being female and younger were found to be risk factors associated with higher levels of distress and loneliness. In a recent national study on the impacts of COVID-19 on acute mental health, results on self-reported questionnaires revealed that 78% of respondents reported that their mental health had worsened since the outbreak, with one quarter (26%) being very or extremely worried about contracting COVID-19 themselves, and half (52%) worrying out their family or friends contracting the virus. Rates of psychological distress showed that 62% of respondents reported elevated depression, with 50% and 64% of respondents reporting elevated anxiety and stress levels respectively. Respondents with self-reported history of mental ill health had significantly higher distress, health anxiety and COVID-19 fears than those with good mental health, *ex ante*. Identifying as female predicted lower depression, whereas identifying as non-binary or a different gender identity was associated with higher self-reported anxiety and stress. First Nations peoples also reported higher anxiety and stress levels. Another national online survey, conducted in March 2020 (early acute phase of the pandemic) by the Australian National University with Australian (English-speaking) adults, revealed marked elevated rates of depression and anxiety, even among individuals with no current diagnosis. Possibly this worsening of mental health may have been exacerbated by recent severe bushfire season Australians had experienced in the few months prior, despite controlling for this variable during the analysis. Impaired work and social functioning, as well as financial distress were all found to be strongly associated with elevated depression and anxiety symptoms, as well as decreased psychological wellbeing.

With some early studies reporting highly significant levels of psychological distress meeting the threshold for clinical relevance, mitigating the hazardous effects of COVID-19 on mental health is an international health priority. Further high-quality research into the mental health impacts of COVID-19 is urgently needed.

Alcohol consumption

Since the first case of COVID-19 was reported in Australia on 13 January, the impacts of swift government-enforced lifestyle changes have not only had an impact on people's mental health and wellbeing. Alcohol consumption, for example, has increased for one in five individuals, as identified in a recent national survey, with about 27% of respondents indicating a decrease in drinking during the pandemic. Women showed a larger increase in drinking compared to men. Loss of job or decline in

working hours was a strong predictor for increasing drinking for men, whereas for women having a child-caring role was the strongest predictor for increased drinking. Reasons for increased drinking habits were spending more time at home, boredom, and increased stress. Feelings of anxiety and depression were found to be associated with increased consumption.

Aged care

Nationally, information about the number of aged care facilities with an outbreak, how these were managed, and lessons learned remain difficult to access. The first wave of COVID-19 posed considerable challenges for aged care services and providers, but more particularly support staff. Tasked with delivering highly technical care, basic entry-level skilled staff found themselves in complex and urgent situations. The pandemic highlighted an unreasonable expectation for personal care attendants to "step-up". The reduction of number of nurses employed in RACF came to the fore rather strongly. Moreover, workforce composition in aged care is often predicated on a model of care that assumes aged care is a residence, where primarily older people stay who are well, occasionally requiring care. Reality prescribes the need for a different model of care though, recognising that residents are older frail persons with cognitive impairments and multiple other comorbidities who are vulnerable to dramatic consequences. An apology on behalf of the federal government, responsible for the aged care sector, has been made since, admitting that the response to the COVID-19 crisis had fallen short.

Family violence

Anecdotal evidence points towards increased numbers and reports of domestic, family, or gender-based violence. Being termed "essential services", and the expectation of face to face contact continuing as part of their support offerings, child protective services have experienced an exponential increase in reports of child abuse and domestic and family violence during the pandemic.

Infected healthcare workers

Healthcare worker infections have been much higher in the second wave of the COVID-19 pandemic compared to the first wave. Whereas the first wave may have seen 10-15% of health worker infections were acquired through their work, the second wave presents a different picture. Over the months July and August 2020, 5% of health worker cases was comprised of doctors; nurses made up 40% of healthcare worker cases; and those who care for older people made up another 40%.

Access to health services

Prevention, early detection, and ongoing patient monitoring are hallmarks of essential primary care. During the COVID-19 pandemic, patients and care providers have appropriately cancelled or postponed many outpatient visits and converted others to telemedicine due to shortages of healthcare resources or the risk of infection. The dramatic decline in testing and service provision, and delayed provision of chronic disease management may lead to condition exacerbation, increased hospitalisation and longer-term population-based consequences of failure to detect, prevent, and treat conditions.

To mitigate longer-term consequences several steps including resuming services as soon as it is safe and practical, identifying population-based registries of patients with gaps in care, specifically targeting the gaps resulting from COVID-19-related deferrals, and creating options for non-traditional screening options, such as pharmacy, other specimen collection centres, or home testing kits. Practices need to be supported to emphasise the importance of ongoing prevention screening, monitoring, and treatment to patients who may continue to be fearful about returning to healthcare facilities (Wright et al., 2020).

Long COVID-19 and recovery

A proportion of individuals who have recovered from a COVID-19 infection are reporting persistent symptoms such as fatigue, breathlessness and joint pain. These symptoms are independent of, and in

addition to, the expected recovery processes related to pneumonia or intensive care and appear unrelated to the severity of the infection. Chronic fatigue clinics in the United Kingdom are now managing significant numbers of COVID-19 patients. These long-term consequences are now referred to as “long-COVID” and appear to impact on approximately 2-5% of all people infected which, based on current numbers (October 2020), equates to 1,000 individuals in Victoria.

Community perspectives of COVID-19

A COVID-19 themed *Health Voices* survey was distributed on 29th May 2020 to help us understand the experiences and perspectives of our communities during the pandemic. A range of questions were asked relating to experience of isolation, the nature of the response in their community and experiences in the health system.

The Health Voices that participated were predominantly female (85%) and aged 55 and over (66%). When asked if they had a chronic disease, 42% responded “yes”.

For those with a chronic disease, we asked whether anything had changed for them in accessing healthcare for their condition during the pandemic. Most reported nothing had changed, however 19% indicated they could not attend their GP and 18% said their health-related program or class had been cancelled.

When asked about their own health-related behaviours, 30% of all respondents reported they had visited their GP “less than usual” (before the pandemic). Of those that had visited a GP, 36% had participated in a telehealth consultation and thought it was (selecting all that applied):

- Okay 67%
- Still prefer face to face 58%
- Excellent 38%
- Would like to use it again 21%
- Terrible 4%
- Had issues (connectivity) 4%.

2019-20 Bushfires

The 2019–20 bushfires had a devastating impact on the North East of the Murray PHN region. In total there were six Local Government Areas (LGAs) declared bushfire affected – Towong Shire, Alpine Shire, Mansfield Shire, Rural City of Wangaratta, Indigo Shire and the City of Wodonga. The most devastating impact was in the Towong Shire where large areas of farmland were burnt with severe property, infrastructure and stock losses, and livelihoods were greatly impacted. However, during the emergency and aftermath, each of the six LGAs experienced enormous stressors due to the ongoing nature of the fires, re-traumatisation of previous bushfire experience (particularly the 2009 Victorian bushfires), the constant smoke haze and poor air quality, and the economic downturn brought on by the fires.

Recovery

It is still very early in the bushfire recovery phase for most communities in the North East region. Recovery will include mid to long-term service needs, supports and solutions. During recovery, anticipated surges of mental health issues, substance use and suicide risk presentations will occur around 6 months, 12-18 months, and up to 5 -10 years post initial response phase. During the stages of recovery there will be a need to ensure services are available to provide counselling and mental health service options, and wellbeing supports across the affected communities.

Community Needs

Eight months on, communities most affected by the bushfires largely remain in the early stages of recovery. Some people still have accommodation issues, many farming communities have not yet been

able to replace infrastructure to allow them to re-build their businesses (as such livelihoods are severely impacted), and people are becoming anxious about the approaching summer and fire season.

Anxiety about the easing of COVID-19 restrictions is playing out in the Alpine Shire in some communities, more so than bushfire related issues, due to a perceived rush of tourists coming to the area once restrictions are eased and the increased risk of infections. However, people are starting to turn their thinking towards the coming bushfire season which (for some) is creating anxiety.

All bushfire affected LGAs saw a significant economic downturn and loss of employment during and after the bushfires, and the arrival of the COVID-19 pandemic has greatly compounded the situation.

With the added COVID-19 overlay, people in bushfire affected communities will need substantial mental health and wellbeing support for the foreseeable future, and for some, this will mean for years to come. Reducing risk by focusing on mental ill-health and suicide risk factors in the full social context (bushfire impact, COVID-19 impact, social determinants of health) will be vitally important aspects for commissioned service providers and an essential component to deliver.

Health Impacts

Family Violence - Family and domestic violence, which also has a major impact on mental health and wellbeing for all involved, is a major concern in the bushfire affected communities with an already reported increase in number of incidents and seriousness. Again, this has been compounded by COVID-19 restrictions. To-date this is not reflected in referrals for services or support, however, there has been a 30 percent increase in referrals to perpetrator programs in the North East of Victoria for the first 6 months of 2020, compared to the first 6 months of 2019. Post the 2009 Black Saturday bushfires, research found that increases in family violence were observed and anecdotally reported by funded family violence agencies, recovery authorities and community leaders (Women's Health Goulburn North East, 2012). Anecdotal reports also indicate an increase in alcohol consumption across bushfire affected communities which is a risk factor for increased rates of family violence.

Child Health - The mental health, developmental and wellbeing needs of pre-school age infants/children is showing up as a service gap across bushfire affected communities. This is being highlighted as a service area of need to prevent the longitudinal effects of trauma related to the bushfire experiences. Evidence from research following the Victoria 2009 bushfires is showing that young people who were in this age bracket and lived through the 2009 bushfires are now displaying school attendance and learning difficulties, behavioural problems and substance related issues at above average rates for this cohort across Victoria. An increased and ongoing focus on programs and interventions for this age group, and young families will be required.

Mental Health - The connection between mental illness and experience of trauma is well established. Events such as childhood trauma, abuse or catastrophic events like the recent bushfires can underpin the development of mental illness. The experience of vicarious trauma may also be an issue for health professionals.

Pregnancy and Air Quality - Research by the Menzies Institute shows that 'prolonged exposure to bushfire smoke increases the risk of pregnancy complications including high blood pressure, gestational diabetes, low birth weight and premature birth (before 37 weeks)'. Noted was the potential for elevated risk of heart disease in later life, coupled with an increased risk of cerebral palsy and visual or hearing impairments (The Conversation, January 2020). The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) has added weight to concerns relating to air quality during and post bush fires and increased rates of preterm birth, decreased birth weight, hypertensive disorder of pregnancy and gestational diabetes.

During a recent ABC media interview (September 2020), an Albury-based GP highlighted her concerns and direct experience this year with foetal growth restriction, retained placenta post-birth, and premature delivery potentially linked to bushfire-smoke exposure during pregnancy. A study conducted in 2019 in Colorado followed more than 500,000 pregnant women and demonstrated significant impacts on babies

born to wildfire smoke-affected mothers where small-for-dates and pre-term babies were found in increased numbers. The study showed that exposure to bushfire smoke over the full gestation period and the second trimester positively associated with preterm birth; whilst a decrease in birth weight was associated with exposure during the first trimester.

Family Violence

Family violence can cause terrible physical and psychological harm, particularly to women and children. It destroys families and undermines communities. Sometimes children who have directly experienced family violence or have been exposed to it go on to become victims or perpetrators of violence later in life, so that the effect of family violence is passed to the next generation (RCFV).

When using the term 'family violence' in this Needs Assessment we are applying the definition as outlined in Section 5 of the Family Violence Protection Act 2008 (Vic): Family violence can occur in any familial relationship—for example, between current or former intimate partners who are or were married or in de facto relationships, in heterosexual and same–sex relationships, between parents (or step-parents) and children, between siblings, and between grandparents, grandchildren, uncles, aunts, nephews, nieces and cousins. It can also occur in relationships that are considered 'family-like'—for example, in certain cultural traditions or between a person with a disability and their unrelated carer. The most common manifestation of family violence is intimate partner violence committed by men against their current or former female partners. This violence can also affect children. It is the form of family violence that we know most about, and it is the key focus of most services and programs. Family violence in the context of other relationships—including in extended families, by siblings, against men and in same–sex relationships—is also covered by the Family Violence Protection Act and falls within the scope of this Needs Assessment.

The causes of family violence are complex and include gender inequality and community attitudes towards women. Contributing factors may include financial pressures, alcohol and drug abuse, mental illness and social and economic exclusion. Local data suggests that full-time GPs are seeing up to five women per week who have experienced some form of intimate partner abuse in the past 12 months.

Intimate partner violence rates in 2019 for females of 160 per 10,000 persons for the LGA of Mildura, and 157 for Swan Hill are significant compared with the average Victorian rate (77). The rate of Family Violence against women showed a similar picture for both LGAs, with rates in excess of more than twice the Victorian average of 116 per 10,000 (248 for both Mildura and Swan Hill). The sexual offences rate per 10,000 in 2019 revealed several hotspots across the region compared to the Victorian average of 14, with the highest rates in Greater Bendigo (22) and Wangaratta (20). Furthermore, over the period 2016-2019, the rate for ambulance dispatches and paramedic interventions per 100,000, as provided by Ambulance Victoria for a domestic/family/sexual violence event, show higher numbers for LGAs of Murrindindi, Mitchell and Mildura, with 138, 134 and 151 respectively, compared to a 72 average Victorian rate.

The LGAs of Greater Shepparton (123) and Moira (114) also showed higher than average rates over the three-year period. Data provided by Victoria Police showed family incident rates for 2019-20 in Benalla (2,750), Greater Shepparton (2,409) and Mitchell (2,278) to be considerably higher than the Victorian average of 1,315 per 100,000 population. Highest numbers of family incident rates occurred however in Mildura and Swan Hill, revealing a similar pattern as the Ambulance Victoria data.

First Nations Health and Healing

Understanding First Nations health and wellbeing is crucial if we are to address, heal and improve outcomes. Reporting of the health of First Nations communities is often framed within a deficit discourse that privileges Western concepts and models of health. It narrowly situates responsibility for ill health and poor outcomes down to the individual losing all context of the impact larger socio- economic structures, policies and history have played. This results in homogenising Aboriginal and Torres Strait Islander

communities across Australia and then comparing them to Non-Indigenous Australians therefore risking assumptions of equality and comparing *like with like* underpinning the analysis of the data.

As a first step in addressing this, the 'First Nations Health and Healing Indicators' have been selected. These Indicators incorporate a view of health, where possible, which is more closely aligned to Indigenous worldviews centring the importance of connection to culture, Country and communities on good health. In addition, challenging race-based stereotypes within the datasets will highlight impact that colonisation, dislocation, racism and intergenerational trauma has had, and continues to have.

Indicator Framework

The selected indicators are based on a mix of Western and an Indigenous worldview of wellbeing and includes nine broad interrelated domains of wellbeing which are unique and relevant to Indigenous Australians (Butler et al., 2019). The domains are important on their own though the quality of the connections among these aspects of life greatly impact the level of wellbeing experienced.

First Nations Health and Healing Indicators
Domain 1: Autonomy, Empowerment and Recognition
Domain 2: Family and Community
Subdomain 2.1: Family
Subdomain 2.2: Community
Subdomain 2.3 Social and Cultural Connectedness and Social Capital
Subdomain 2.4 Disconnection from family and Community
Domain 3: Culture, Spirituality, and Identity
Domain 4: Country
Domain 5: Basic Needs
Subdomain 5.1: Money
Subdomain 5.2: Housing
Subdomain 5.3: Access to services
Domain 6: Work, Roles and Responsibilities
Subdomain 6.1: Paid work
Subdomain 6.2: Other roles and responsibilities
Domain 7: Education
Domain 8: Physical Health
Domain 9: Mental Health

The above indicators will inform future assessment and monitoring of health needs for and outcomes of Aboriginal and Torres Strait Islander communities across Murray PHN.

2019 Update

Climate change and health

The rural and regional communities within the Murray PHN region are vulnerable to the impact of climate change and the effect on human health through both direct and indirect environmental changes. Direct climate change will impact health through increased morbidity and mortality resulting from higher temperatures and heatwaves, particularly amongst vulnerable groups such as the elderly, children and those with pre-existing cardiovascular and respiratory diseases.

Analysis of the Victorian heatwave of January 2014 demonstrated increases in all the following indicators during, or immediately after, the four-day heatwave:

- Emergency department presentations
- High acuity ED presentations
- Deaths in, and prior to, arrival at public hospital ED
- ED presentations involving:
    - Heat-related conditions
    - Diseases of the circulatory system
    - Mental and behavioural disorders
- Ambulance emergency dispatches
- National home doctor service heat-related consultations
- Nurse-on-call heat-related consultations
- Deaths reported to the coroner
- Death admissions to the Victorian Institute of Forensic Medicine
- Total deaths (24% greater than expected)

(DHHS, 2014).

The indirect impacts of climate change result from the effect of adverse weather events on other areas such as agriculture, bushfire, infectious disease distribution (via mosquitos and other vectors), along with social change such as migration, conflict and impairment of livelihoods due to drought and flood. Vulnerability to climate change and adverse weather events will therefore impact rural and regional communities disproportionately and highlights the emerging role of the rural health workforce in identifying, reducing and managing the adverse health effects of weather events.

Climate change and adverse weather events pose a significant threat to the health and wellbeing of children because their behaviour may expose them to harm and their systems lack maturity to respond to such harms. Their vulnerability is highlighted by the following:

- Lower body weight increases risk from hazards such as air pollution, water shortage, contamination and malnutrition
- Decreased ability to cope with temperature stress
- Immature immune systems make them susceptible to infection
- In-utero exposure to harm leading to long-term conditions (e.g., asthma)
- Trauma associated with adverse weather events experienced in childhood leads to poor health outcomes
- Children lack self-protecting behaviours making them more susceptible to sunburn, dehydration and infection

- Reliance on primary care givers to protect and provide for them (DEA, 2015).

The Royal Australian College of General Practitioners (RACGP, 2019) and the Australian Medical Association (AMA, 2019) released position statements in June and September 2019, respectively, acknowledging the consequences of climate change on health, and the subsequent impact on the health system and workforce. The RACGP statement identifies key roles for GPs within each of the domains of general practice and promotes a framework for primary care to improve health by mitigation and adaptation to climate change.

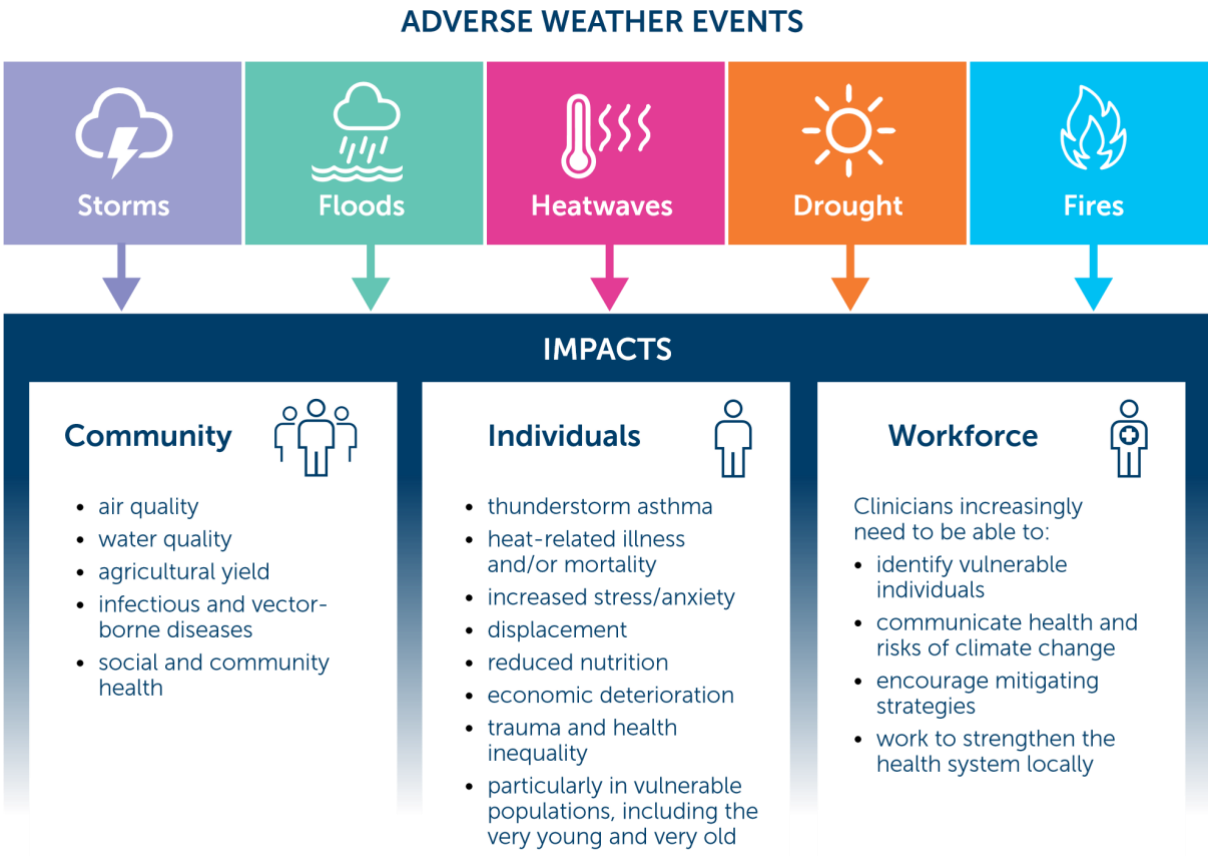


Figure 1. Framework for primary care actions to create health co-benefits, and mitigate or adapt to the health effects of climate change (RACGP, 2019)

River health

The Murray PHN region is home to several significant river systems including the Murray, Goulburn, Ovens, Coliban, Campaspe and Kiewa rivers. The rivers play a significant role in the identity and economic development of our region and are central to the cultural and spiritual wellbeing of our Aboriginal and Torres Strait Islander communities.

Climate change, land and water management plans, and floods and drought, along with pollution and contamination, are having a negative impact on river health leading to social and economic consequences for river communities. The social impact of poor river health is associated with decreased tourism, poorer agricultural and horticultural yields, and loss of recreation opportunities. The consequences for primary care are increased demand due to the impact of decreased and insecure incomes, loss of identity and community wellbeing leading to increased stress, anxiety, depression and relationship breakdown.

The traditional culture of our Aboriginal and Torres Strait Islander communities revolved around their relationship to land and water. The rivers provided, and continue to be places of significance, for places to camp, hunt, fish and hold ceremonies. The rivers are central to First Nation peoples' creation stories,

burial sites, birthing sites and provide spiritual connection to ancestors and dreaming stories (Dja Dja Wurrung, 2016). Declining river health and future uncertainty will impact on the spiritual and emotion wellbeing of our Aboriginal and Torres Strait Islander communities and have a negative impact on health outcomes.

Suicide prevention

Recently released research from Suicide Prevention Australia (2019) indicates there are a range of new risks for suicide related to economic security, family and relationships. These risks have emerged due to the changing nature of the Australian society and a greater understanding of the population groups that are at increased risk of suicide. These groups include Aboriginal and Torres Strait Islander people, the LGBTIQ+ community, those bereaved by suicide and those who struggle with alcohol and drug problems.

The Suicide Prevention Australia 'Turning Points' report, prepared with KPMG, identifies a range of risk and protective factors for suicide. These indicators, which focused on economic and relationship factors, were analysed on current trends with results indicating that prevalence of suicide will increase unless these issues are addressed. The report identifies factors which we have translated into indicators that can be used to determine an area's suicide risk. The list of indicators is presented below. Based on these indicators, analysis suggests that the local government areas within the Murray PHN at the greatest risk of increased suicide rate are Mildura and Mount Alexander, and those with the lowest are Alpine, Mansfield and Macedon Ranges.

Indicator	Measure
Risk factors	
Mental health condition	Mental health-related ED presentations (2017-18) per 1,000 persons (Available at SA3 level)
	Doctor diagnosed anxiety or depression % (VPHS, 2017)
	Sought help for a mental health-related condition % (VPHS, 2017)
Average daily alcohol consumption	Increased lifetime risk of alcohol-related harm % (VPHS, 2017)
Binge drinking	Increased risk of injury from a single occasion of drinking % (VPHS, 2017)
Self-reported health	Proportion of adult population with fair/poor self-reported health status % (VPHS, 2017)
	Low or medium life satisfaction % (VPHS, 2017)
Work related stress/ psychological distress	High or very high psychological distress % (VPHS, 2017)
Feelings of hopelessness	Feeling of life being worthwhile (low or medium) (VPHS, 2017)
Gender expectations	Proportion of males who performed 15hrs or more of unpaid domestic work % (ABS, 2016c)
	Proportion of females who performed 15hrs or more of unpaid domestic work % (ABS, 2016c)

Housing and finance	
Household income	Proportion of households with less than $650 gross weekly income % (ABS, 2016d)
Mortgage stress	Proportion of households with housing costs greater than 30% of household income % (ABS, 2016d)
Area of disadvantage	SEIFA (2016)
Employment	
Job loss during past year	Unemployment rate % (ABS, 2016d)
Relationships and household structures	
Single person households	Single (or lone) person households % (ABS, 2016d)
Relationship breakdown	Divorce rate % (ABS, 2016d)

Underserviced populations

Murray PHN is home to a range of population groups that are regularly referred to as vulnerable, underserviced, hard to reach or at risk. Usually referring to people who are experiencing disadvantage due to economic circumstance, ethnicity, rurality or a medical condition, services are incentivised to provide health care to these groups yet are often unsuccessful at adequate engagement and therefore unable to affect improved health outcomes. A new way to approach this issue has emerged by reframing the language from vulnerable and underserved people to *hard-to-reach services* and *exclusionary services*, thereby placing the onus on the services to improve accessibility as they hold responsibility to reach those that require care.

The complex nature of the Australian health system has been recently acknowledged in a policy paper by the Australian Health Policy Collaboration (AHPC). Whilst the system performs well by international standards, it struggles to provide equitable access to care for all Australians and often fails to manage chronic disease effectively (AHPC, 2019). The complexity of the system across multiple providers and funders, along with the increased demand for services due to an ageing population and a high burden of chronic disease, has resulted in a health system that is difficult to navigate and hard to access, especially for individuals and communities with vulnerabilities.

Within the Murray PHN region, the population groups who have been identified as underserviced are those that experience health inequalities, commonly through health inequity, and are listed below.

Rural populations
We define our rural populations as people living in a Monash Modified Model (MMM) 4 or above location, as per updated MMM definitions.

Aboriginal and Torres Strait Islander people
Aboriginal and Torres Strait Islander people continue to experience widespread socioeconomic disadvantage and have worse health than the rest of the population.

People experiencing socioeconomic disadvantage
People who live in areas with poorer socioeconomic conditions tend to have worse health than people from other areas.

People experiencing, or at risk of, homelessness
People experiencing homelessness have multiple complex health conditions yet are typically disengaged from primary health care services and place a significant burden on the acute health system.

Newly arrived communities (including refugees)
Refugees in Australia frequently have complex physical and psychological health needs.

Older adults
Increased use of health services by older age groups including higher hospitalisation rates, and higher rates of multimorbidity.

People with disability
People with disability have poorer health than the rest of the population, even when their health outcomes are unrelated to their impairment.

People with mental illness
People who live with a mental illness are also more at risk of experiencing a range of adverse social, economic and health outcomes.

People who identify as gender or sexuality diverse
A disproportionate number of people who identify as gender diverse or sexually diverse experience poorer mental health outcomes and have higher risk of suicidal behaviours than their peers.

People who have experienced natural disasters
Natural disasters can cause substantial social and mental health problems that may continue over extended periods of time.

The health and service system needs of our populations experiencing health inequalities highlights the role of Murray PHN to promote and support a service system that is accessible, safe, easy to navigate and actively seeks to reach individuals that require care.

Seasonal populations

Population variability across the Murray PHN region is a consistent issue for population health and other service-based planning. The Murray PHN region is bordered by the Murray River which experiences a significant seasonal influx of tourists. The Victorian ski-fields are another location within the region that attract seasonal visitors and temporary residents, along with the agricultural regions where there is a substantial seasonal workforce passing through.

Swan Hill Rural City Council recently commissioned a population estimation exercise to provide a more accurate measure of the actual, daily residential population of Robinvale due to substantial evidence that Robinvale's actual population is higher than the official Estimated Residential Population (ERP) calculated by the ABS. Modelling of the actual population was generated using bank and water usage data. Bank data reviewed regular transactions of goods and services within Robinvale, and water data used aggregate residential water consumption to estimate population based on a typical per capita consumption in a comparable rural area.

The modelling resulted in an estimated mean population in Robinvale of approximately 7,900 residents, which is significantly higher than the ERP of 3,359.

There are 17 of the 22 LGAs in the Murray PHN region with a tourist profile generated by Tourism Research Australia. These profiles are created where there are significant visitor numbers compared to resident population. Based on these data, the local government areas of Greater Bendigo, Albury, Macedon Ranges, Greater Shepparton, and Campaspe all have annual visitor number of over 1,000,000 per year. However, when visitor numbers are analysed compared to resident population, the LGAs of Murrindindi, Mansfield and Alpine all report more than 50 visitors per resident each year.

The impact of seasonal and tourist populations, and inaccurate estimates of residential populations, result in an increased and unplanned demand on in-hours and after-hours primary care, urgent care centres and emergency departments.

SERVICE SYSTEM CHALLENGES

2020 Update

Digital health

At a regional, rural and remote level - where distance, time and cost care can be barriers to accessing care, particularly if specialist services are required - telehealth and telemedicine offer convenience, flexibility and real-time advice from health providers. The benefits for patients are significant and compelling: hospital admissions avoided, fewer adverse drug events, reduced duplication of tests, better coordination of care for people with chronic and complex conditions, and better-informed treatment decisions.

Digital tools have fast become the norm for care provision during the Pandemic. Perhaps the most hyped are video consultations, but telephone appointments, electronic messaging and triage systems account for most of the remote care exchange. Telephone consultations are easier to use, more convenient (negating the need for travel) and not plagued by reliability issues. Electronic messaging enables both the patient and health care professional to respond to non-urgent simple care needs in short bursts when convenient, which helps avoid appointments for more simple transactional engagements such as repeat prescriptions. Triaging typically uses a sequence of questions to ascertain which healthcare professional would be able to address the care needs of the patient. This improves matching patient need against available expertise. Triage and electronic messaging are arguably the real digital innovations shaping care, as both can save time and improve the response to a patient's need (Mistry, 2020).

Service system challenges associated with Digital Health persist, and broadly fit into the following categories:

- Connectivity (unstable internet connections)
- Billing (allied health and other support services)
- Hardware and software platforms
- Staff capacity (e.g., within aged care)
- Patient preference needs (including LOTE) and capacity to use technology.

People with disability

In 1981, the International Year of Disabled Persons, was a watershed moment in Australia in terms of understanding *disability*. The maxim of the disability rights movement from this period, 'Nothing About Us, Without Us', has since been embedded within all key Australian Government Health policy frameworks. The subsequent National Disability Strategy 2010-2020 developed to lead policy implementation is based on the accepted *social model of disability*. This recognises that attitudes, practices and structures are disabling and can prevent people from enjoying economic participation, social inclusion and equality. Current disability policy focuses on social and economic participation outcomes, inclusion and choice (AIHW, 2020k).

Disability is the umbrella term for any limitation, restriction or impairment which restricts everyday activities, or a restriction in participation (the involvement of a person in life situations), and has lasted, or is likely to last, for at least six months (NDS). People can be born with disability whilst many people acquire a disability. This may be incurred for example through a transport or workplace accident or, with ageing. On average one in five people in Australia, have a disability and this proportion is increasing with an ageing population. There is a strong relationship between age and disability; as people grow older, there is a greater tendency to develop conditions which cause disability.

Murray PHN has nine LGAs with higher rates of people with a profound or severe disability than Victoria or Australia, including Loddon and Mildura. Data projections estimate that by 2023, the number of people with disability nearly doubles in the 70+ age group. Overall, the increase in people with disability between 2016 and 2023 hovers around the 20% mark.

Data obtained from the National Disability Insurance Agency showed that as of 31 December 2019, the Mallee region had significantly higher numbers of active participants with intellectual disability (ID) as the primary disability, 12-13% higher than benchmark. The projected number of participants of the Scheme over the next three to four years sees a dramatic increase across all the Murray PHN region, ranging between 19.9% for Loddon to doubling of the numbers in Goulburn Valley (104%). An estimated 20-40% of this group of individuals with intellectual disability will be experiencing a mental disorder of some kind (NDIA, 2020).

Chronic health conditions and disability

Chronic health conditions are often associated with some level of disability. Examples are coronary heart disease, stroke, diabetes, arthritis and related disorders, back pain and problems, osteoporosis, asthma and emphysema (AIHW, 2020k).

- 50% (half or 2.8 million) of people with 1 or more of 8 selected chronic conditions also have disability.
- 78% with emphysema as their main condition have disability.
- 64% with stroke as their main condition have disability.
- 9.8% with asthma as their main condition have disability.

Chronic health conditions often coexist with some form of disability:

- half (50%, or 2.8 million) of people with at least 1 selected chronic condition also have disability.
- 40% (1.5 million) of people who have 1 selected chronic condition as their main condition also have disability (ABS, 2019a).

There is a 2-way relationship between health conditions and disability. People with a health condition are more likely to develop disability, and people with disability are more likely to develop a health condition. Not everyone with a health condition will develop disability, and people with the same health condition who have disability may also experience different forms and level of disability (AIHW, 2020k).

Access to health services

Like everyone, people with disability have health-care needs, access health services to meet them, and have varying health-related experiences. They use a range of mainstream health services, such as GPs, medical specialists, dentists and hospitals. Their care may require coordination between different health professionals. People with disability may also rely on informal care, such as that provided by family and friends, to meet or supplement their health-care needs.

- 1 in 13 (7.6%) people aged under 65 with disability delay or do not see a GP when needed because of cost.
- 1 in 2 (47%) people aged 5–64 with disability who need health care assistance only receive informal assistance.
- 1 in 4 (24%) people aged 15–64 with disability wait longer than they feel acceptable to get an appointment with a GP.
- 1 in 4 (26%) people aged under 65 with disability visit a hospital ED each year (AIHW, 2020k).

It is well documented that the healthcare system is fragmented and delivers suboptimal outcomes for specific disadvantaged populations. The percentage of standard health assessments and cancer screening rates in the ID population is on average 20% less than the non-ID population. Various Productivity Commission reports unanimously lament the lack of integration across the broader

healthcare system; particularly the interface between the NDIS, primary health services, acute care, community housing, and justice. A survey amongst Murray PHN medical advisors highlighted the lack of care coordination and the absence of General Practice involvement in the multiple care episodes in the person's care trajectory. Early recognition and diagnosis of an ID also poses a significant concern, with a lack of access to specific specialists and communication pathways between primary health, schools and early development services.

Mental health and older people

In Australia, results of the ABS National Survey of Mental Health and Wellbeing revealed that adults aged 75–85 years with mental health needs reported some of the lowest rates of mental health service use compared to other age groups. Beyond the immediate impacts on wellbeing and quality of life, untreated mental ill health in older age can lead to a deterioration in overall health, increased hospital admissions and an earlier transition to residential aged care facilities (ABS, 2008).

Research has identified a range of factors that may act as barriers to appropriate mental health care for older adults. These barriers include:

- a lack of services specialising in mental health care for older adults
- the prioritisation of physical health care above mental health care for older adults
- older adults' poor mental health literacy
- the stigma associated with mental illness

An under-researched barrier to mental health care for older adults is the assumption that mental illness is a normal part of the ageing process. Normalising mental illness in older age may act as a barrier to an older adult's inclination to recognise a need for help, as well as a barrier to the identification, assessment and treatment of mental illness by professionals. Furthermore, additional research suggests that professionals in aged care services tend to view depression as a normal consequence of ageing and pay less attention to the impact that depressive illness can have on older adults than other age groups.

A greater focus on the harmful effects of normalising mental illness or not properly diagnosing mental illness in older age should inform the development of new strategies and policies to address the under-recognition and treatment of mental illness in older adults. The under-utilisation of mental health services suggests that better diagnosis of mental illness in older age is needed, including the support that RACF staff may need to help identify the signs of mental illness. Greater capacity in recognising signs of mental illness will help remove barriers that may currently prevent older people from receiving the treatment that would improve their mental health and wellbeing.

Aged care and support services

Residential and In-home care are under review through the Aged Care Reform, currently in its second year. High level concerns have been expressed through peak bodies that there are significant numbers of older people waiting for home care packages who need urgent support to ensure they can stay living safely at home and receive the care they need (AHHA, 2020). The first quarter report (2019-20) on Home Care Packages released by the Department of Health indicate that there are in vicinity of 100,000 older Australians who are either on the wait list for a package or have been offered a package at a lower level than they qualified for. Older Australians face unacceptably long waiting times resulting in limited choices with the wait list upwards of 12 months, depending upon the urgency and level of need required. Of the 100,000 people that are currently waiting for a home-care package, there is potential that they will need to move into residential care rather than receiving this support enabling them to stay at home (Grattan Institute, 2020).

The expected wait time for approved Home Care Package are:

Package level	Approximate wait time
Level 1	3 - 6 months

Level 2	12+ months
Level 3	12+ months
Level 4	12+ months

*Last updated 30 June 2020 (MyAgedCare, 2020).

2019 Update

Aged care

Aged care in Australia is currently under review through a Royal Commission which is likely to lead to significant reform of the sector to improve quality and safety, as well as improve the capacity of the system to grow and meet future need and changing demands. Within the Murray PHN region, service system challenges have emerged relating to in and out of hours GP coverage for residential aged care facility (RACF) residents. Increasingly, the number of GPs who are taking new RACF patients is decreasing across the region, leading to increased burden on fewer practitioners, and delays in older adults moving into RACFs for much needed care.

Prior to individuals entering aged care facilities, there must be an allocated GP who is willing to manage their care, including the provision of visits to the resident at the facility. Obtaining a GP is the responsibility of the resident and/or family and is the choice of the resident. Over the last 12 months, there have been various concerns expressed from the management of aged care facilities in their difficulty in maintaining GP access for their residents and these concerns have been increasing. Aged care facilities have indicated:

- difficulty in filling beds, regardless of the demand due to individuals not being able to access a GP
- current residents now without a GP – which is breaching aged care standards and accreditation
- GPs who are willing to support but does not include visits to the facility – staff are required to present to the general practice with paperwork and if able, residents are also required to present to the general practice for health care.

In a recent survey undertaken by Murray PHN, RACF highlighted a range of issues and impacts related to reduced GP coverage of their facilities. The main issue that was identified was timeliness of primary care provision and the subsequent impact of delayed care. Other concerns included, but were not limited to, the following:

- preventable deterioration due to constipation, urinary tract infection, pain and general infections leading to decreased quality of life for residents
- transfer to ED and/or preventable hospital admission
- delayed medication reviews and reliance on exchange of faxed medication charts, charts are unsigned, RACF staff waste time on follow up, and increased potential for medication errors
- prescriptions unfilled
- disgruntled residents and family
- GPs are rushed when onsite and unable to provide comprehensive, person-centred service
- overreliance on residential in-reach service
- very difficult to get GP after hours.

Many factors are impinging on general practices' capacity or willingness to work in providing a service to residents in aged care. Factors that include:

- The time required to appropriately manage the resident, including:

- to get to the nursing home
- to find the nurse in charge (if you can find the nurse)
- to get the patient into a private situation for the consultation
- no equipment to assess the patient
- to take a history and examine the frail and elderly
- to have to write both a script and a medication chart
- to have to write notes both for the nursing home and for one's own surgery notes
- to field inquiries from pharmacists who often want to have scripts ahead of time for the medication packs
- to make specialist appointments
- to transport patients to specialists and allied health professionals

- Skill set of RACF staff:
  - the skill of the staff within aged care facilities is at the very low end of what would be expected in managing individuals who are frail and have complex health issues, which adds to the time the GP is required at the facility
  - GPs receive frequent disruptions during the day from RACF staff; calls are often inappropriate and not needed, where there are times when a GP should be notified, and this does not happen

Homelessness or at risk of

According to the census, the rate of homelessness across the Murray PHN region has increased in nine local government areas between 2011 and 2016 (ABS, 2016c). Although it is problematic to rely on census data for accurate homelessness information due to poor census participation of those in insecure housing, these trends support anecdotal evidence regarding homelessness from health services and community consultations across our region.

An emerging group at risk of homelessness is women.

Research by the Australian Institute of Health and Welfare showed that in 2017-18, 64% of people seeking specialist homeless services (SHS) in Victoria were women (AIHW, 2018c). Many are experiencing family violence, financial stress, mental health issues and are unemployed. There is also a growing group of older women who have been unpaid carers, worked in casual jobs and have little to no savings or superannuation unable to find housing in the private rental market. This leads to couch surfing, living in crisis accommodation, living out of their car, or on the streets. Many are also primary carers to children.

The impact of homelessness on the primary health care sector is that housing instability and homelessness, unemployment and financial insecurity can exacerbate mental and physical health issues and substance abuse disorders. When children experience homelessness there are significant impacts on future health and wellbeing due to limited engagement with maternal and child health support, education settings and primary care.

2009 Victorian bushfires

Ten years have passed since the 2009 Victorian bushfires, and this year marked an important anniversary of what has been recognised as one of Victoria's most devastating tragedies. The 2009 bushfires resulted in the death of 173 people (State Government of Victoria, 2019), and also massive loss of natural forest and infrastructure throughout many regions and communities of Victoria (National Museum of Australia, n.d.).

The Bushfires of 2009 Community Support Committee (also known as the Kinglake Consortia) was a collaborative project conducted by health service providers and community representatives with funding

from the Victorian State Government to provide services, particularly mental health services, to people living in some of the communities impacted by the 2009 bushfires.

The objective of the Bushfires of 2009 Community Support Committee was to ensure appropriate and trauma-informed mental and community health supports, communications regarding services available and capacity building to support communities and service providers were available to all people in the regions of Mitchell, Murrindindi, Strathbogie, the Yarra Ranges, Whittlesea and Nillumbik during the recent anniversary of the fires.

The project provided a range of additional support services to the communities identified above, however uptake of these services was varied. Anecdotal evidence suggested that communities appreciated the increased service availability and acknowledgement of need, however uptake was not significantly increased during this period.

There is also emerging evidence that children who lived through the bushfires are displaying trauma-related behaviours that is impacting on educational outcomes. In a study recently conducted by University of Melbourne (Gibbs et al. 2019) analysis of numeracy and reading achievements of children demonstrated a close-dependent relationship with depressed learning outcomes and level of bushfire affectedness four years after the event. Without early intervention, these developmental patterns have the potential to impact educational and functional outcomes many years down the track. The wider evidence base indicates there are opportunities to intervene through positive multilevel school strategies and primary health care support. This provides further evidence that our bushfire affected communities require ongoing, specialist support.

Digital health

Following the release of the National Digital Health Strategy, digital health-mediated initiatives, such as My Health Record, have gained traction. However, wide-spread implementation of digital health has also uncovered a range of health service system issues.

RACGP are actively supporting members by providing advice on how to use digital health platforms safely and effectively, whilst ensuring adherence to the Privacy Act 1988. Concerns regarding the use of personal devices for capturing clinical images, understanding the ownership and responsibility of the clinical images (generally the property and responsibility of the health service, even if they have been taken on a private mobile phone), practitioner level understanding of health data privacy and compliance (e.g., secure messaging and referral), and the development and implementation of policies and procedures have all been identified as areas requiring further training and development.

An ongoing issue that the increase in digital health activity is highlighting is the trepidation of some health services to commit to participation in innovative digital health programs due to the perceived risks of web-based platforms. Whilst concerns are based upon maintaining the privacy of clients, limited understanding of the technology and fear of reputational issues is impacting on uptake. The need is to build the understanding and capacity for both practitioners and administrators to deliver a workforce that confidently uses digital health technologies to deliver health and care.

General practice will also require additional support to participate in digital health-mediated consultation due to the lack of MBS items available for direct patient consultation using videoconferencing and the requirement for e-script capability. Although there is a capacity and training need in digital health literacy and some system issues that need to be addressed, new technologies should be embraced as opportunities arise from the National Digital Health Strategy.

Refugee health needs

The rate of newly arrived settlers for humanitarian reasons between July 2018 and March 2019 was 0.48 per 1,000 persons across the Murray PHN region. This is higher than the national rate of 0.32. Rates for LGAs with the most newly arrived settlers for humanitarian reasons for the period are Greater Bendigo (0.66), Greater Shepparton (1.76), Mildura (1.03) and Wodonga (1.74) (DSS, 2019b).

Recent community health needs work with the Hazara community throughout the region has provided helpful illustration of the lived experience for many refugees. The Hazara make up one of the major groups of refugees and asylum seekers who have resettled in Victoria. There have been two main waves of Hazara refugee arrivals in Australia, with the first wave of refugee and asylum seekers arriving from Afghanistan between 1999 to 2002, and the second wave mostly resettled in Victoria, including in the Murray PHN region, between 2009 to 2013. Many of these refugees have received permanent residency visa; some are still living with temporary or bridging visas. Also, many Hazaras are entering Australia via refugee family reunion programs which is a different type of visa.

Most refugees from Afghanistan in the Murray PHN region have settled in four major centres – Bendigo, Mildura, Shepparton and Swan Hill. Hazara people make up most of these settlers from Afghanistan and estimates indicate there are over 2,000 Hazara refugees in the Shepparton area alone.

The main health issues identified by community members and service providers for the Hazara communities within the Murray PHN region included women's health issues (including cancer screening and post-natal support), mental health concerns, chronic pain, delayed presentations to health services, hepatitis B prevalence, health impacts of chewing tobacco, family issues related to resettlement, and health literacy. Given the central role of general practice in addressing the above health concerns, opportunity exists to develop and implement structures and supports to improve refugee engagement with general practice. Related to this, recent conversations with refugee health workers within the Murray PHN region have identified access and engagement with GPs as a significant barrier to primary care service access for refugee communities.

Therefore, opportunity exists for exploration of how general practice can improve engagement with local refugee communities. Known barriers include factors related to time, billing, and translator availability; yet opportunities such as peer-workers, care coordination and resourcing have yet to be trialled within the Murray PHN region.

Rural women's health

Following the finalisation of the 'Women's sexual and reproductive health needs across Murray PHN region' innovation project (2018), there remains a gap in knowledge regarding the specific needs and types of services required for women in outlying rural areas of the Murray PHN region. The report makes recommendations to progress place-based, nurse-led models of sexual and reproductive health care, explore service coordination links between family violence service providers and primary care; and highlights several access issues for women particularly relating to options counselling and medical and surgical termination of pregnancy. However, more specificity regarding the type of services and associated locations is required to progress action in this area.

The health and service needs of rural women located in selected rural local government areas in the Murray PHN region were investigated. The following key issues were consistently highlighted by women in the LGAs of Buloke, Loddon, Towong, and Benalla:

- Mental health
- Access to general practice (including waiting time and bulk-billing availability)
- Chronic disease management
- Sexual and reproductive health
- Social connection
- Transport

Another outcome of the study was that participants appreciated being consulted as they felt that women's health needs were often overlooked, especially in rural areas.

Child health

Childhood vulnerability is a complex problem, particularly in communities with high levels of disadvantage. Opportunistic health care is inadequate to meet the chronic and complex health needs of children in out of home care, experiencing social or economic disadvantage, or displaying developmental delay and/or autism spectrum disorder. Specialised paediatric care and early intervention is usually required from early childhood through to late adolescence to prevent lifelong effects of such conditions or adverse childhood experiences.

Children living in rural and regional Victoria often experience significant waiting times or costs to see a paediatrician or specialist paediatric health services. Transition to the NDIS has also highlighted the lack of services across the Murray PHN region with an increased demand due to the financial support provided by the scheme.

The service system challenges, and complexity, increase when children are in out of home care, or where child protection is involved. Murray PHN's Community Paediatric Project was in response to the unmet health needs of children and their families in the Mildura area in the Murray PHN region, and in particular to focus on addressing health needs and service gaps for Aboriginal and Torres Strait Islander children.

The project's aim was to better understand their needs by developing a place-based, best practice model of community paediatric care. Community paediatrics differs from general paediatrics. Community paediatricians generally work with ambulatory patients who may have a chronic illness, complications of prematurity, genetic diseases, developmental disabilities, autism and behavioural issues (Hall 2000, Kronick, Hilliard et al. 2009). While working with individual patients, community paediatricians also focus their work more broadly on children and youth within a community, not just those who come into a clinic. The project identified the following needs:

- Need for and benefits of community paediatricians
    - There is need for a full-time, salaried community paediatrician based in Mildura, whose role should be shared/co-located across Mallee District Aboriginal Services (MDAS) and Sunraysia Community Health Services (SCHS) in order to best serve the needs of families in Mildura and the surrounding areas.
- Clinical outcomes are anticipated and value for money propositions need to be tested
    - A business model to support this role that includes several funding streams and draws upon health economics evidence to demonstrate value.
- Clinic scope needs to be any child who is vulnerable
    - In the future the service is available to vulnerable and disadvantaged families from non-Indigenous backgrounds, including children from culturally and linguistically diverse families.
- Community paediatrics deliver beyond the clinic
    - That a paediatrician servicing this population group should be a community paediatrician with dedicated time to be actively involved in developing and maintaining collaborative working relationships with various local professionals and key organisations, along with providing capacity building activities.
    - That the professional and personal needs of prospective community paediatricians be considered when recruiting.
- Additional, related paediatric services need to be strengthened to support the community paediatrician, families and the wider community.

Cancer Survivorship Project

The term ‘cancer survivor’ has been used irregularly; most commonly, a cancer survivor refers to any person who has been diagnosed with cancer. Therefore, survivorship begins at the time of diagnosis and includes the periods of initial treatment with intent to cure, become cancer free, or need to manage chronic or sporadic disease, and end of life care.

Reports suggest that cancer survivors do not receive appropriate oncological or primary care services, where there is often an overuse, misuse or underuse of appropriate services. Related reports indicate that cancer survivors are less likely to receive regular primary prevention such as heart and lung health checks, cancer screening and immunisations.

Patients in rural areas face significant obstacles associated with a lack of resources, health workforce challenges, increased financial burden and social isolation. Understanding the specific care required means solutions can be matched to the unique needs of the rural patient.

The Cancer Survivorship Project identified the following key local issues related to cancer care:

- There is increased prevalence and poorer survivorship in rural areas
- There is significant variability in cancers and care pathways
- Supportive care screening, risk stratification and advance care planning isn’t routinely completed for, or offered to all patients, regardless of the setting
- Access to care is limited due to distribution of services, geographic distance, limited transport and fragmented/non-existent telehealth options
- Limited workforce with no or limited knowledge of cancer survivorship care
- General practice is mostly not involved with
- ‘formal’ cancer survivorship care
- There is a clear disconnect between primary care and specialists/tertiary health centres regarding sharing information around patient care.

Analysis of patient stories exposed that the patient journey was highly variable. The problem of distance, inconsistent supportive care assessments, unreliable communication and geographic limitations were all barriers to embedding cancer survivorship care in the region. General practice is well positioned to provide continuity of care and many rural health services are well positioned to provide cancer survivorship care.

Following the development and implementation of a Cancer Survivorship Model of Care, the outstanding service system needs include:

- A cancer care coordinator should be a funded essential service across rural health service sectors
- Cancer survivorship needs to be standard training item for Aboriginal health workers and practice nurses
- The shared care model between the acute and primary care sectors needs to be financially resourced to support primary care implementation
- Cancer survivorship should be embedded into accreditation frameworks
- Cancer survivorship training and education providers need to ensure content meets the needs of rural agencies and survivors
- PHNs should consider the development of one chronic disease management plan that encompasses most chronic diseases.

Rural primary care access, workforce and sustainability

In rural areas, the lack of health professionals per head of populations is further exacerbated by their need to serve small populations spread over large geographic areas. This means that it is more likely that these health professionals will be working in very small, geographically dispersed practices, with a lack of economies of scale that occur in denser population areas. In 2017, there were 217 GP practices in the Murray PHN region and 15% of these (32) were solo practices (RWAV, 2017). This is the highest percentage of solo practices across all PHN regions in Victoria. The 2016 National Health Workforce (DoH, 2019) dataset indicates that shortages of GPs, compared to state averages and patient needs, within the Murray PHN region continues to be a problem. For example, Loddon has the lowest provision of GPs per head of population of any LGA in Victoria, and many of these GPs are aged over 60 years (unpublished data, 2019). Looking beyond the existing vacancies, many towns within the Murray PHN region have precarious GP workforces. Some towns have a solo GP who doesn't live in the region full-time or is older and approaching retirement.

Workforce shortages are also apparent across other disciplines and services in the Murray PHN region, including a significant shortage of allied health professionals. For example, DHHS has calculated that if the allied health workforce in the Gannawarra Shire was perfectly distributed, an additional 45 FTE would be registered there, in addition to the current 16.2 registered in that region in 2017 (unpublished data, 2019). In addition to the other challenges with rural practice like professional isolation and the need for broader skills, often only part-time employment is available for allied health professionals, which can reduce the attractiveness of working in these areas.

A new approach that connects the primary care system across communities will address some of the workforce issues that drive poor health care access and will improve the sustainability of these services over time.

COMMUNITY VOICE

Murray PHN's community engagement occurs predominately across two channels, Health Voices our online survey platform, and through our four Community Advisory Councils.

2020 Update

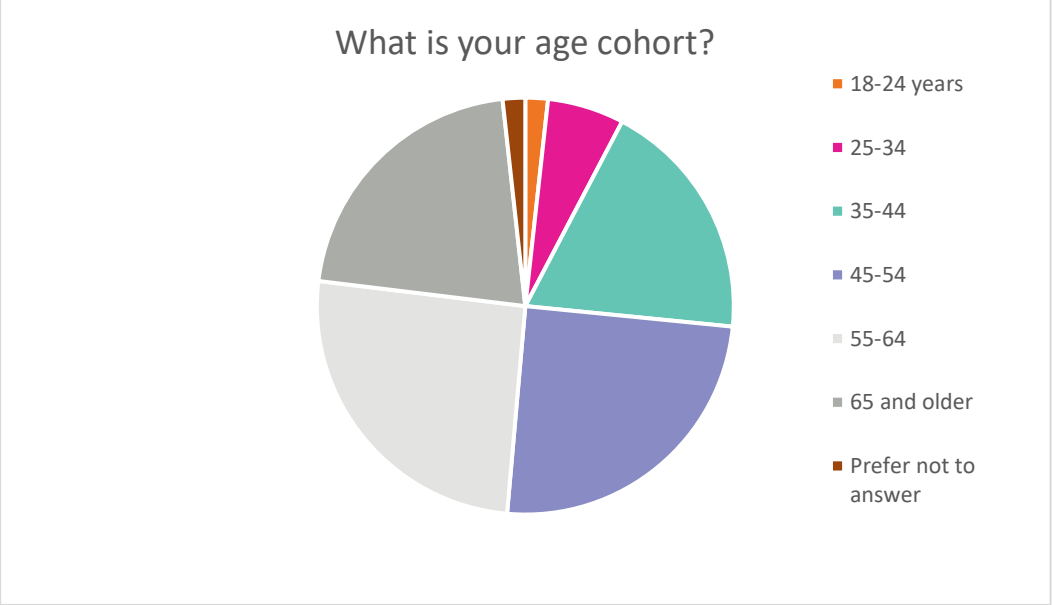
The following information summarises our engagement activities during 2019-2020.

Health Needs of the Community: Health Voices and Community Advisory Councils

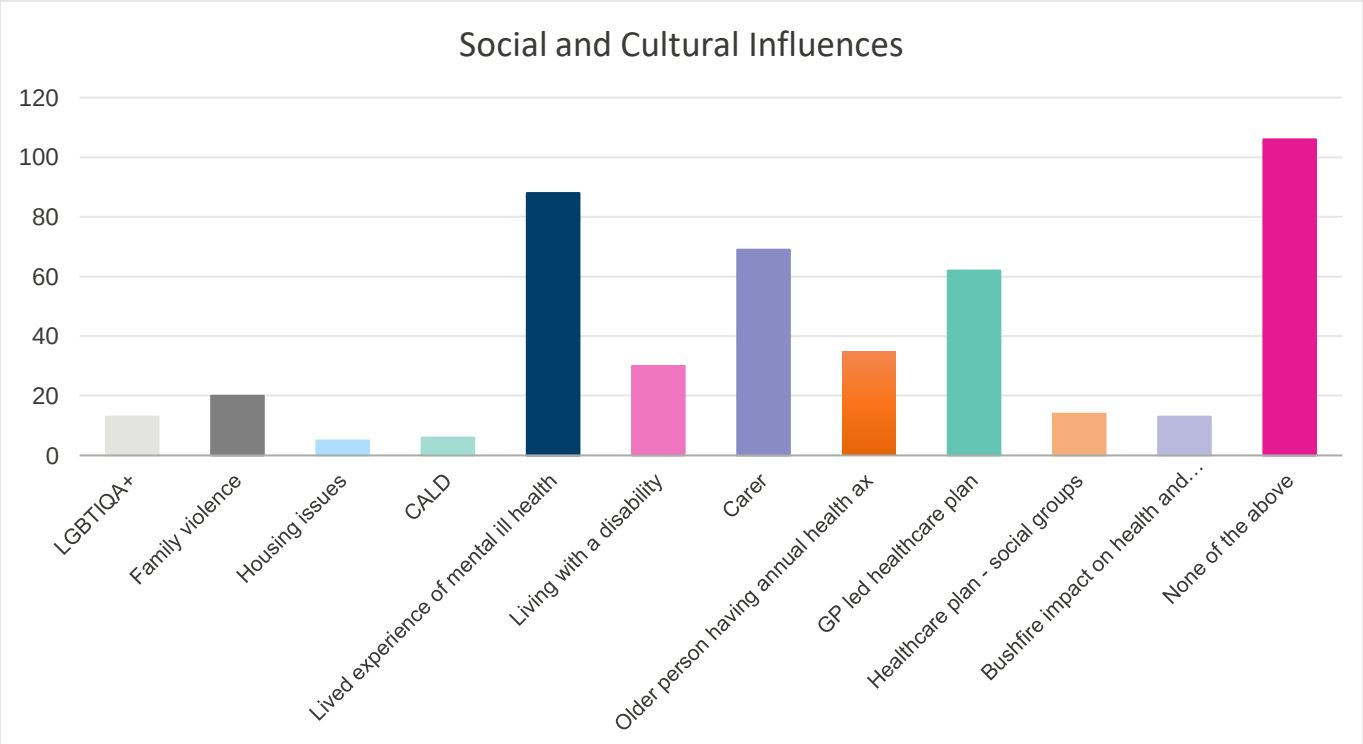
Surveys exploring communities' perception of the health needs in their districts were collected during October 2020. There were 286 respondents and surveys were completed online or via hardcopy distribution.

Respondents were asked to provide their postcode for enabling aggregation of data across LGAs, and more confidently report on identified local community health needs. About 2% of respondents identified as being Aboriginal, whilst 95% was neither Aboriginal nor Torres Strait Islander. Of the 286 respondents, 50% filled out the question asking about what First Nations Country there were living on.

Majority of respondents identified as female (84%), 15% as male, and 1% preferred not to answer the question about gender identity. The pie-chart below shows the distribution of respondents across age cohort. Over 50% of total number of respondents fell in the 45-65 age bracket.



Responses provided on the question of social and cultural influences revealed that 31% of respondents identify as having a lived experience of mental ill health, and 24% provides carer support to a family member. Ten percent of respondents indicate to be living with disability, whilst 22% have a GP-led healthcare plan. About 20 out of the 286 (7%) respondents has experienced or is currently experiencing domestic violence or intimate partner violence. Results are presented in the graph below.



Health Issues

Mental health was by far the biggest health issue identified by respondents for themselves and their communities. Regularly, specific mention was made in relation to the effects of COVID-19 and bushfires on mental health of communities, young people and accompanying social isolation. Initial analyses showed nearly 50% of respondents listing mental health, anxiety, depression, access to mental health supports, psycho-social supports and related AOD misuse as primary health concerns for communities and themselves.

Access to health care, specialist care, and above all long wait lists were other often listed concerns. Access to chronic disease support, particularly arthritis and heart disease, was a second response that came up often for individual health needs. Other responses for individual health concerns were weight, obesity, keeping fit (including support for those aged 65 and older), autoimmune disease, cancer (breast and skin), lung disease and diabetes.

The impact of COVID-19 was clearly felt for individuals and communities alike. Responses ranged from "*fear of bringing the virus home*", to respondents sharing stories about the impact of COVID-19 on their lives and their health. One person shares her story of her partner passing away from cancer and the inability to have a funeral, in addition to having difficulties accessing grief support services.

The impact of both bushfires and COVID-19 was also clearly felt by individuals, resulting in poor sleep and deteriorated mental health. Concerns listed for communities included an ageing population, absence of GPs, lack of social housing, lack of specialists, domestic violence and age-related conditions like Alzheimer Disease, dementia more generally, care in old age, osteoporosis and arthritis. COVID-19 again featured prominently as a health concern for the community as well. One person put it like this, responding to her individual health concerns:

> *"As I age (in my 50s), concerns for the future of what is coming for older people."*

The table below provides some more detailed analysis of health concerns for individuals and communities by LGA.

LGA	Health concern
Albury	Mental health
	Diabetes
	Obesity
Alpine	Mental health
	Dementia
	Diabetes
	Aged care
Benalla	Mental health
	Suicide
Buloke	Mental health
	Radiology
	Allied health
	GP access
Campaspe	Diabetes
	Arthritis
	Obesity
	AOD
	Mental health
	Aged care
Central Goldfields	Obesity
	Cancer
Gannawarra	Mental health
	AOD
	Arthritis
	Aged care
Greater Bendigo	Mental health
	Cancer
	Diabetes
	Dementia
	Heart disease
	Asthma
	Aged care
Greater Shepparton	Obesity
	Mental health
	Diabetes
	Diet
	AOD
	Cancer
	Disability
	Domestic violence
Loddon	Aged care
	Mental health
	Obesity
	Heart disease
	Asthma

LGA	Health concern
Macedon Ranges	Mental health
	Maternity care
	Obesity
Mildura	Cancer
	Mental health
	Obstetrics
	Heart disease
Mitchell	Cancer
	AOD
	Aged care
	Obesity
	Arthritis
	Cardio-vascular
Moira	Arthritis
	Dementia
	Mental health
	Aged care
Mount Alexander	Auto-immune disease
	Obesity
	Mental health
	Arthritis
	Heart disease
	Family violence
	Suicide
Murrindindi	Obesity
	Cancer
	Mental health
Swan Hill	Diabetes
	Mental health
	Aged care
Towong	Mental health
	Arthritis
Wangaratta	Chronic pain
	Cancer
	Obesity
	Mental health
	Asthma
	Arthritis
Wodonga	Mental health
	Aged care
	Autoimmune disease
	Obesity

Digital Health

Queried about the reliability of their internet service enabling telehealth access, the vast majority (75%) of respondents respond positively about telehealth, phone support and online consultations, stating their internet accessibility has supported this new way of accessing supports. Some do prefer to access their treating physician face to face, if possible, whereas some hope for telehealth to stay, and access to healthcare is less of a barrier[1]. As this person states:

> *"…have used this service with GP which is good. Have also used for mental health consultation and has been good. Still miss the conversation you have when in person."*

Another person would appreciate weekend Telehealth appointments if they were available, as they

> *"don't need to be sourced from local doctors only practitioners can consult from anywhere in Australia."*

Service System Needs

On the question about what health services people would like to see available or improved in their community, mental health (across the age-range, including in schools, headspace support, and psycho-social supports) and counselling prominently stood out. A summary of other responses is provided in the table below (in no particular order).

Health promotion	Domestic violence support (inc. programs for men)
Maternity services	Local specialist services
Local nutritional programs	Drug and alcohol treatment services
Oncologist	Holistic health services
After Hours care	Occupational Therapist (Allied Health)
Dental services	Rheumatologist
Cardiologist	Lung specialist
Obstetrics	Grief support
Ear Nose and Throat	Paediatricians
Plastic surgery (inc. wound care)	In-home services
Pain specialist	Diabetes clinic (inc feet, eyes health check)

Other feedback provided was around a digital divide in the communities, a gap in general practices with GPs who can speak English well enough to understand them, respondents thanking Murray PHN for the work, reduced skill sets in rural hospitals and reduced ambulance accessibility costing lives, increased geriatric services, and need for multidisciplinary services (not solely through telehealth service provision). Educating communities by undertaking sound communication strategies with LGAs to reach communities in the broader region was another suggestion put forward for improvement opportunities.

[1] A note of caution that survey responses were predominantly collected online, so in itself this can indicate a skewed result

Advisory Councils Feedback

Throughout 2019 and 2020 the Community and Clinical Advisory Councils provided a number of communiques to the Murray PHN board highlighting issues identified from their communities. The following is a summary of this feedback that relates to health and service system needs:

- Mental Health support to communities post-drought, bushfires and now further economic hardship due to COVID-19.
- Limited, timely access to flu vaccinations.
- Simple information to inform communities regarding COVID-19.
- Advocacy to Commonwealth regarding expansion of telehealth MBS items.
- Provide MyHR information and promote uptake using support services such as Centrelink and Community Houses.
- Monitor single vehicle accidents and suicide rates across region.
- Cross-border communication and support with border closures.
- Health Literacy.

2019 Update

The following information is a compilation of our engagement activities during 2018-2019.

My Health Record

In the latter part of 2018 and early 2019, as part of the My Health Record Expansion Program, Murray PHN conducted community engagement events/activities to inform consumers about My Health Record. In total, 169 education activities were conducted across the Murray PHN region, including 92 presentations, resulting in 3,346 engagements (excluding collateral dissemination/extended reach).

Through Health Voices, our community demonstrated high awareness of My Health Record, with 97% of respondents having heard about My Health Record and 70% knowing what type of information was contained within a My Health Record. Almost one third of Voices had spoken to their doctor or health professional about My Health Record.

In relation to My Health Record, 62% of the Health Voices respondents thought it was great because health care providers will be more informed, 14% will be opting out, 12% were unsure because of not knowing enough; and 12% were not bothered either way.

As of October 2019, across Murray PHN's region there are 434 health care providers registered for the My Health Record system: 198 general practices, 128 pharmacies, 15 public hospitals and health services, four private hospitals and clinics, one aged care provider, 42 allied health, 15 specialists and one pathology and diagnostic imaging service.

Access to primary care

During October and November 2018, Murray PHN's Community Advisory Council members consulted with their local networks and gathered more than 800 responses to questions about primary health and the primary health care system.

Our community told us they are most concerned about access to general practitioners and attracting and retaining GPs, particularly in rural areas. The top five health issues concerning our community across the region related to GP access (28%), mental health (27%), chronic disease (20%), aged care (14%), and alcohol and other drugs (10%). The community was also asked to identify community strengths which

included health services (28%), caring and supportive community (25%), social connection (21%), social capital (13%) and services, shops and amenities (13%).

General practice

The previous community consultation identified access to general practice was one of the main primary health concerns across Murray PHN communities. This was investigated further with a focus on access to and experiences of primary care.

In relation to general practice access, 90% of Health Voices have a GP that they prefer to see however, in the past 12 months only 10% of Voices could get an appointment with that GP when required. Of the 58% of Voices that didn't see a GP when they needed to, the main reasons for not doing so was because the service not available when required (35%), other (24%), waiting time too long (14%), cost, or too busy (9%), already had an upcoming appointment (7%) and dislike or fear of service (2%).

Unlike hospitals and community health services, general practices are not required to undergo a health care quality accreditation to provide health care. Voices were asked if they would prefer to visit an accredited general practice with the majority responding Yes (70%).

When asked about recent experience with their GPs, almost half (48%) of Health Voices always felt involved in decisions about their health care. In relation to care co-ordination, over the past 12 months, 50% of Voices had seen three or more different health professionals (such as a GP, specialist, physiotherapist or nurse) for the same condition. The health professionals who were deemed as helping the most in coordinating their care was their GP (35%). The majority of Health Voices thought that care coordination was seen to have helped to some or a large extent (56%). Almost half of Health Voices reported that they hadn't experienced any issues in their care that were a result of poor communication or coordination between health professionals, however, 23% did, and 5% couldn't remember if they did or didn't.

Through our Community Advisory Councils (CAC), the community told us that care coordinators could offer considerable advantages for their health care, including the recording of a more complete medical history and the provision of more holistic care with potential time saving benefits. However, concerns were raised around trust and communication, privacy and confidentiality and inconvenience. Overall, 43% of those consulted concluded care coordinators would be potentially beneficial, 40% obtrusive and 17% were undecided.

Digital health

Community Advisory Council consultations explored community perceptions about digital health-mediated consultations with many preferring face-to-face consultations with their health care providers. Other barriers were identified such as internet access, internet quality, connectivity and reliability in rural areas, the impact on aged people and access to computers or smart phones, and the ability to access pharmacy medications after hours.

Through the CACs our community also told us that in relation to the possibility of using home monitoring devices for managing chronic conditions, 74% were in favour of using this type of technology, 14% were not in favour and 12% were undecided.

After Hours

Through Health Voices our community has told us that in relation to after-hours care in the past 12 months, 16% of Voices had seen a GP After Hours for their own health, including both urgent and nonurgent care. One third of Voices experienced a time when they needed to go to the GP After Hours but didn't, which was mainly due to the service not being available when required (28%).

Of the 25% of Voices that had been to a hospital emergency department (ED) for their own health, 20% of Voices thought that the care could have been provided at a general practice, while 38% said it couldn't and 5% didn't know if it could or couldn't.

Navigating the health system

Many people find it difficult to access the health system due to its complexity. It's a system with multiple moving parts, including intricate funding models, patients with complex, chronic and diverse needs, and numerous interventions and treatment options. A new type of service Murray PHN is exploring could place 'health navigators' into local communities. Health navigators are knowledgeable people who would help community members access or evaluate health information. They would be locally accessible and help create better links to community and health-based resources.

Through Health Voices our community has told us if a service was available that helped people understand medical information and included services such as assistance completing forms, making appointments and organising health-related travel, this service should be located (other than at the GP clinic or local health service) at a pharmacy (69%), neighbourhood/ community house (45%), library (32%) or council office (29%). Other ideas for locations suggested included post offices, Centrelink offices, hospitals, banks, schools and religious settings.

Place and wellbeing

Where we spend our time has an important effect on our lives and health and wellbeing. Strong, resilient and cohesive communities can positively influence a person's perspective of place.

Community Advisory Council members were asked to conduct an audit of places or towns in their regions using the Place Standard tool (https://www.Placestandard.scot/). The Place Standard tool provides a framework to assess the quality of a place. It enables the physical, social and environmental qualities of a place to be evaluated in a structured way and can help to initiate conversations to identify areas where quality can be improved.

The purpose of conducting a wellbeing audit was to identify key strengths community members have identified about their respective places. On average, across the Murray PHN region, natural space, play and recreation and feeling safe were the most positive aspects and received higher scale ratings; while public transport, and work and the local economy received lower scale ratings. More specifically, through Health Voices our community has told us that across the Murray PHN region:

- 94% believed there are opportunities for people to experience and have contact with nature.
- 80% agreed that the community welcomed children playing outdoors.
- 76% thought there were a range of different spaces (indoor, outdoor, purpose-built and more informal) where people can meet.
- 75% of people felt safe both at home and when out and about.
- 70% agreed that there were adequate public areas such as local paths and parks which are suitable spaces for physical activity.
- 53% thought people could feel connected to their neighbours and community, whatever their background.
- 44% thought people took priority over cars and other traffic.
- 37% believed organisations such as local authorities, health services or housing associations actively worked with the community to understand their needs.

GENERAL POPULATION HEALTH

The populations of the Murray PHN region are diverse with significant communities of Aboriginal and Torres Strait Islanders, newly arrived humanitarian settlers, ageing communities, rurally isolated and those experiencing financial disadvantage. A significant proportion of the region is rural, leading to additional vulnerability related to climate events such as drought, flood and bushfires, all of which have occurred in the region in the last decade. There is diversity in the services, stakeholders and places (regional and rural centres and outlying communities) within the Murray PHN region. All of these characteristics contribute to the range of health and service needs identified across the health priorities within this Needs Assessment.

This general population health section provides an overview of the health of our population, with a specific focus on the social determinants of health, health-related risk factors and behaviours, prevention activity such as cancer screening and immunisations, and vulnerable population groups. Most of the information presented here relates directly to the prevalence of our health priorities and should be considered in a comprehensive approach to primary health care. These factors can strengthen or undermine the health and welfare of individuals and communities.

Key issues

- The age distribution in the Murray PHN region demonstrates an older population when compared with Victorian and Australian averages.
- Eleven of 22 LGAs in the Murray PHN region have a SEIFA (Index of Relative Socio-economic Disadvantage) decile ranking of 5 or lower within Australia. Murray PHN has seven LGAs ranked within the lowest 20 in Victoria (ABS, 2016f).
- There are emerging issues regarding women's health across the region.
- New settler and refugee arrivals are significant for the Murray PHN region.
- The Murray PHN region has a diverse range of Aboriginal and Torres Strait Islander communities representing approximately 29% of the total Victorian Aboriginal and Torres Strait Islander population.
- Higher total avoidable mortality rates (compared to the Victorian rate) exist for 20 out of 21 LGAs within the Murray PHN region 2012-16. Life expectancy in the Murray PHN region is also lower than the national average (VHISS, 2020).
- The top five causes of mortality in the Murray PHN region in 2013-2017 were coronary heart disease (12.3%), dementia and Alzheimer's disease (7.1%), cerebrovascular disease (6.5%), COPD (5.5%) and lung cancer (5.1%) (AIHW, 2019h).
- Victorians living in regional and remote locations have a poorer cancer survival expectancy. In 2013-2017, the age-standardised mortality rate for all cancers combined was highest in remote and very remote areas combined and lowest in major cities, (181 compared to 155 deaths per 100,000 persons) (NCCI, 2020).
- Cancer screening rates in the Murray PHN region are higher than the Australian average for breast, cervical and bowel cancer. However, LGA data available for breast cancer screening for 2016-17 shows ten LGAs within the Murray PHN region to have lower rates than the Victorian rate (54.1%), with LGAs in the North East having particularly low rates (PHIDU, 2020b).
- Twelve of the 21 LGAs within the Murray PHN region have higher rates of people delaying visits to dental professionals due to cost, and timely access to public dentals clinics is limited in our region (VPHS, 2017).

Community voice

Integration and effectiveness of services is a major consideration of service providers across the region. Workforce capacity and retention is a significant issue in remote and regional areas.

Cancer incidence in the Goulburn Valley region was identified by the GV Clinical Council as an issue for further investigation.

The following themes emerged during oral health consultation with the community:

- Value is in 'soft screening' with kindergarten children the focus
- School policies (encouraging healthy eating and water as first beverage choice)
- Incorporating achievement programs like Healthy Living.

Health needs

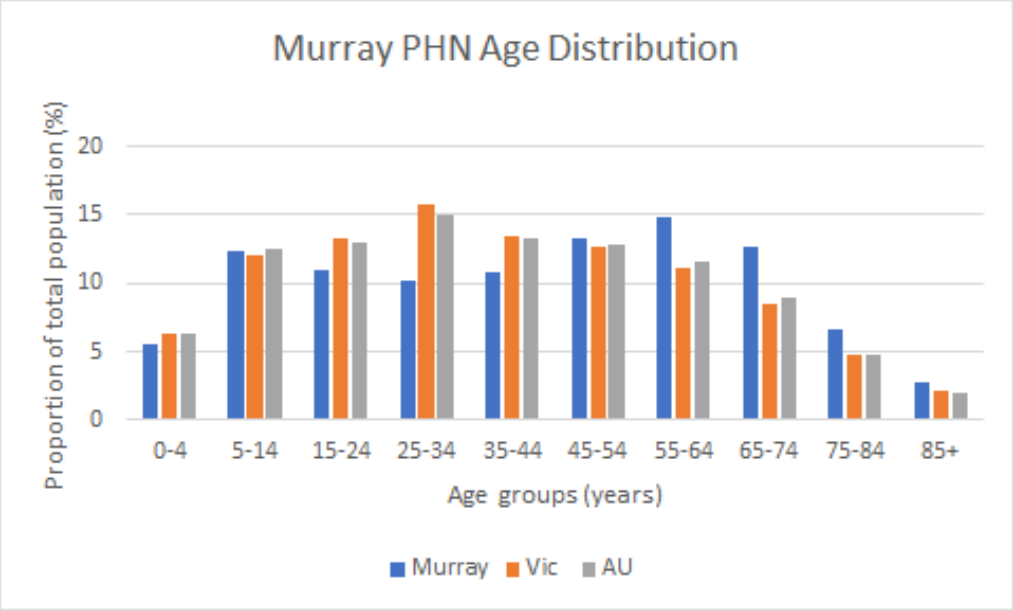
Description of evidence

Demographics

The Murray PHN region had a total estimated residential population of 678,473 persons in 2019. The region is projected to experience steady population growth over the next 10 years. In round figures, Central Victoria has a population of 243,700, North East 184,400, Goulburn Valley 167,900 and North West 82,500 (ABS, 2020).

The age distribution in the Murray PHN region demonstrates an older population when compared with Victoria and Australia. There is a higher proportion of people aged 55 and over (37%), and a significantly lower proportion of people aged 25-44 (21%) residing in the Murray PHN region (ABS, 2020).

In some communities, particularly rural local government areas such as the Shires of Benalla, Buloke, Gannawarra, Loddon Strathbogie and Towong, people aged over 65 years represent more than one quarter of the total population (ABS, 2020).



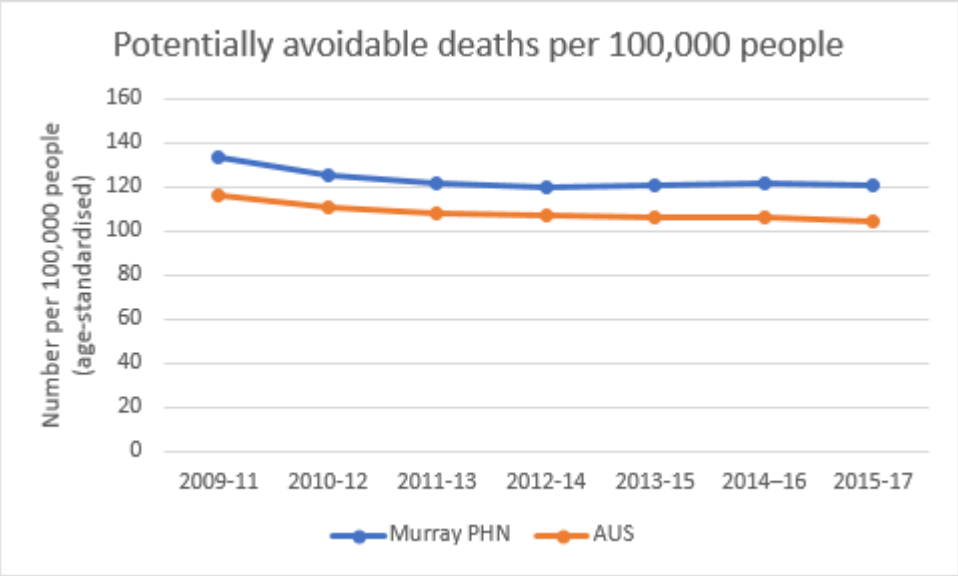
The total fertility rate in the Murray PHN region is 2.12 babies per woman, which is higher than Australian rate (1.74). The local government areas of Swan Hill (2.54), Towong (2.53), Moira (2.31) and Gannawarra (2.30) are all significantly higher than the national rate (ABS, 2018a).

Disadvantage and income

- Eleven of 22 LGAs in the Murray PHN region have a SEIFA (Index of Relative Socio-economic Disadvantage) decile ranking of 5 or lower within Australia (ABS, 2016f).
- Specific SA2 communities of significant disadvantage include California Gully – Eaglehawk (899), Seymour (897), Mooroopna (896), Mildura North (886) and Robinvale (871) (ABS, 2016g).
- Mildura is ranked the fifth most disadvantaged LGA in Victoria and Loddon (ranked 9th) is also among the 10 most disadvantaged LGAs in Victoria. Murray PHN has seven LGAs ranked within the lowest 20 in Victoria (ABS, 2016f).
- Over 40% of households within the Murray PHN region report a household income of less than $1,000 per week (ABS, 2016c).
- The average unemployment rate in 2019 across the Murray PHN region is 6.3% compared to the national rate (5.2%) (PHIDU, 2020b).
- As of June 2020, Murray PHN's population was more likely to receive JobSeeker, age pension, disability support pension or single parenting payments compared to the Victorian average (DSS, 2020).
- The proportion of people receiving JobSeeker payments in the Murray PHN region (5.6%) is higher than the Victorian rate (5.2%) as of June 2020. The local government areas of Loddon (7%), Mildura (6.8%) Greater Shepparton and Albury (both 6.4%) have rates significantly higher than the Murray PHN average rate (DSS, 2020).

Mortality

- Life expectancy at birth (2015-2017) in the Murray PHN region is 81.4 years, which is lower than the national rate (82.5 years) (AIHW, 2019f).
- The top five causes of mortality in the Murray PHN region in 2013-2017 were coronary heart disease (12.3%), dementia and Alzheimer's disease (7.1%), cerebrovascular disease (6.5%), COPD (5.5%) and lung cancer (5.1%) (AIHW, 2019h).



Source: AIHW, 2019d

- Avoidable mortality (0-74 years) 2015-2017:
    - 121 deaths per 100,000 people are potentially avoidable in the Murray PHN region, which is higher than the national rate of 104 per 100,000 and Victorian rate of 94 per 100,000.

- All SA3 areas in the Murray PHN region have a higher rate than the Victorian rate, with Murray River-Swan Hill having the highest rate (139), followed by Mildura (136), Wangaratta-Benalla (135) and Campaspe (133). Heathcote-Castlemaine-Kyneton (97), Wodonga-Alpine (109) and Albury (112) have the lowest rates for the Murray PHN region (AIHW, 2019f).

- For 2013-2017, compared with Greater Melbourne and Victoria, the Murray PHN region has higher premature mortality rates for total deaths, 0 to 74 years (252.2 per 100,000). Rates for Greater Melbourne and Victoria are 200.6 per 100,000 and 218.1 per 100,000 respectively (PHIDU, 2020b).

Vulnerable populations

- As of 30 June 2016, it is estimated 16,529 persons identify as Aboriginal and Torres Strait Islander in the Murray PHN region This represents 29% of the total Victorian Aboriginal and Torres Strait Islander population. Murray PHN has significant populations residing in the local government areas of Swan Hill, Mildura, Greater Shepparton and Greater Bendigo (ABS, 2018c)
- The homelessness rate for the Murray PHN region per 10,000 population is 28, which is lower than the Victorian rate (41.9 per 10,000). However, rates higher than the state rate exist in the LGAs of Greater Shepparton (55.6), Loddon (54.6) and Swan Hill (46.1) (ASDF Research, 2018).
- The percentage of people with a core need for assistance for activities of daily living is 5.8% compared with the Victorian rate of 5.1%. Used as an estimation of the number of people with a disability, the Loddon Shire is the highest local government area with 7.4%, and Mildura, Strathbogie, and Benalla are also well above the Victorian rate at 6.8% (ABS, 2016c).
- The percentage of people who receive the disability support pension (DSP) is higher in 21 out of 22 LGAs in the Murray PHN region compared to the Victorian rate (4.9%). The local government areas of Loddon (13.3%), Benalla (10.2%) and Buloke (10%) have the highest rates, while Macedon Ranges (4%) is the only LGA below the state average (PHIDU, 2020b).
- The Murray PHN region experienced five of the 15 most damaging fires that burned in Victoria on 7 February 2009 during the 'Black Saturday' bushfires. These fires were significant because of their size and impact, including significant loss of life, and deeply scarred the Victorian people and landscape (VBRC, 2010).
- Currently emerging drought conditions in the Murray PHN region may make rural communities more vulnerable and can result in various health concerns, such as respiratory and mental health issues, and may impact on food security and livelihoods (Vins et al, 2015).

Education

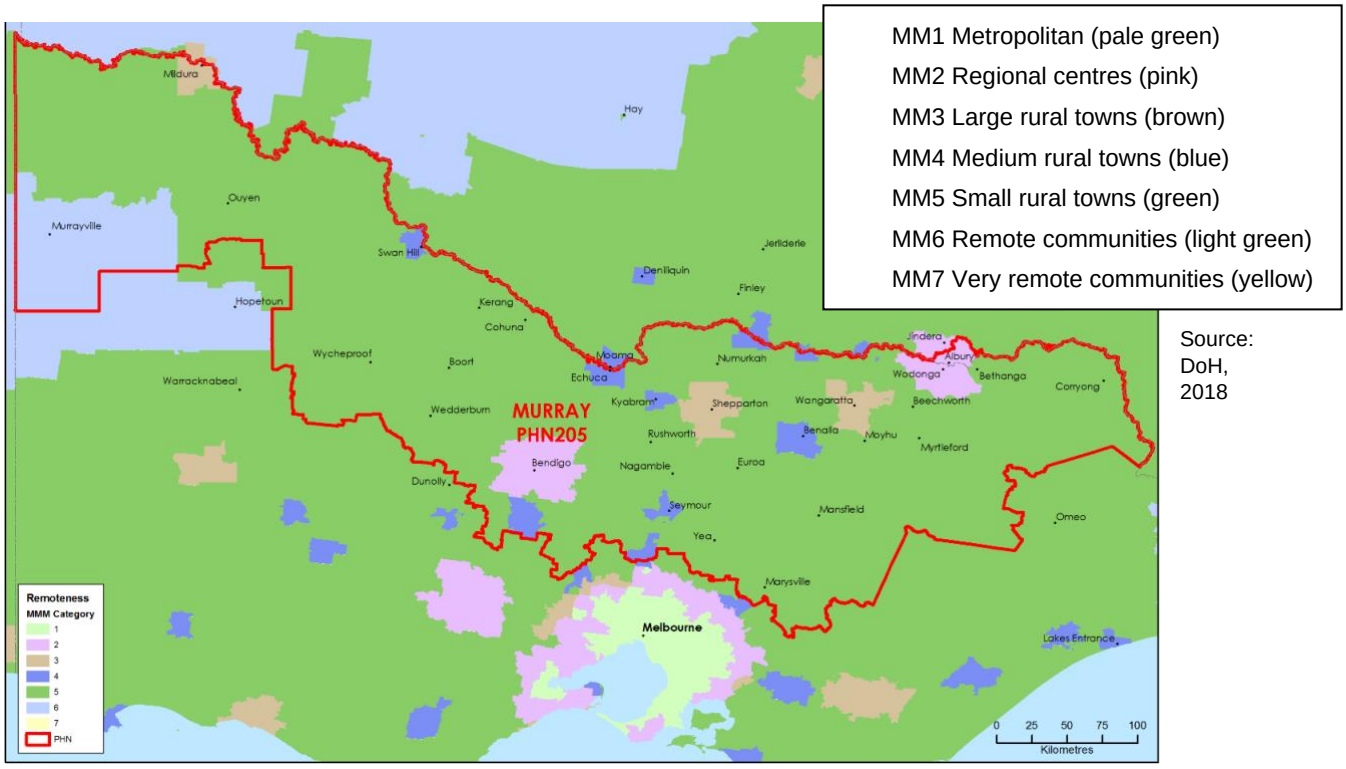
- The percentage of adults in the Murray PHN region who have completed year 12 (or equivalent) is 30.3%, which is lower than the national rate of 42.2%. The areas (SA3) of Campaspe, Loddon-Elmore, Moira, and Murray River – Swan Hill have 25% or less with year 12 or equivalent qualifications (ABS, 2016c).
- Across the Murray PHN region in 2014, the local government areas of Buloke (96.2%) and Wodonga (90.1%) are the only areas with a higher Year 12 or equivalent completion rate than the Victorian average (88.2%). Murrindindi (73.3%) and Benalla (69.3%) have the lowest rates (VCAMS, 2019).

Social isolation

- The Murray PHN region has a higher percentage of lone person households (29.4%) compared with Victoria (24.7%). Over one third of households in the LGAs of Buloke (34.3%) and Loddon (34.2%) are lone person households (ABS, 2016d).
- The percentage of people who spoke with fewer than five people the previous day, was higher in 11 out of 21 LGAs in the Murray PHN region, compared with the state average (78.4%) (DHHS, 2015).

Access

- The percentage of households able to access the internet in the Murray PHN region is 76.3%, which is lower than both the Victorian (83.7%) and national (83.2%) rates. Buloke (68.8%), Gannawarra (69.7%), and Loddon (68.4%), all report fewer than 70% of dwellings with internet access (ABS, 2016c).
- The percentage of internet users in Australia accessing the internet for health services or health research has increased from 22% of internet users in 2014-15 to 46% in 2016-17 (ABS, 2018d).
- The proportion of people who experienced transport limitations in the past 12 months was slightly higher in the Murray PHN region (4.6 per 100 persons) compared to the Victorian rate (4.4 per 100 persons) Fifteen out of 22 LGAs within the Murray PHN region reported transport limitations in the last 12 months higher than the Victorian rate (4.4 per 100 persons): Mildura (5.2), Mount Alexander (5.1), Swan Hill (4.9), Gannawarra (4.9), Loddon (4.9), Greater Shepparton (4.9) and Benalla (4.9) had the highest rates (DHHS, 2015).
- Transport issues, such as timetabling, connections to regional centres/services, and cost are frequently identified in local transport plans and reports.
- The Modified Monash Model (MMM) classifies areas according to geographical remoteness and town size. Most of the Murray PHN region is classified as MM2 to MM5, and as such, people living in these areas can find it harder to access medical care (DoH, 2020c).



Source: DoH, 2018

Modifiable health risk behaviours

- Across the Murray PHN region, the LGAs of Alpine (56.5%), Benalla (58.4%), Buloke (55.1%), Campaspe (53.9%), Gannawarra (62.7%), Greater Bendigo (52.5%), Greater Shepparton (63.0%), Loddon (60.4%), Mildura (54.0%), Mitchell (58.5%), Moira (56.7%), Strathbogie (58.3%) and Wodonga (56.9%), have a higher proportion of people not meeting fruit and vegetable consumption guidelines compared to the Victorian average (51.7%) (VPHS, 2017).
- All LGAs in the Murray PHN region aside from Alpine (7.5%), Buloke (4.9%) and Macedon Ranges (7.5%), have a higher proportion of people who consume sugar-sweetened soft drinks daily, compared to the Victorian average (10.1%) (VPHS, 2017).
- Fourteen out of 21 LGAs have a lower proportion of people who do not meet physical activity guidelines compared to the Victorian average (44.1%). The Shires of Strathbogie and Benalla have the highest percentages of people who do not meet physical activity guidelines (56.1% and 54.0% respectively) (VPHS, 2017).

Self-reported health

- Thirteen out of 21 LGAs have a higher proportion of people ranking their health as fair/poor, compared to the Victorian average (20.3%). Swan Hill (27.0%), Moira (26.4%) and Strathbogie (25.3%) have the highest percentage of people in the region ranking their health as fair/poor, while Towong (14.8%), Murrindindi (16.0%) and Alpine (16.1%) have the lowest (VPHS, 2017).
- All three LGAs in the North West region recorded rates of fair or poor self-assessed health that were higher than the state average.

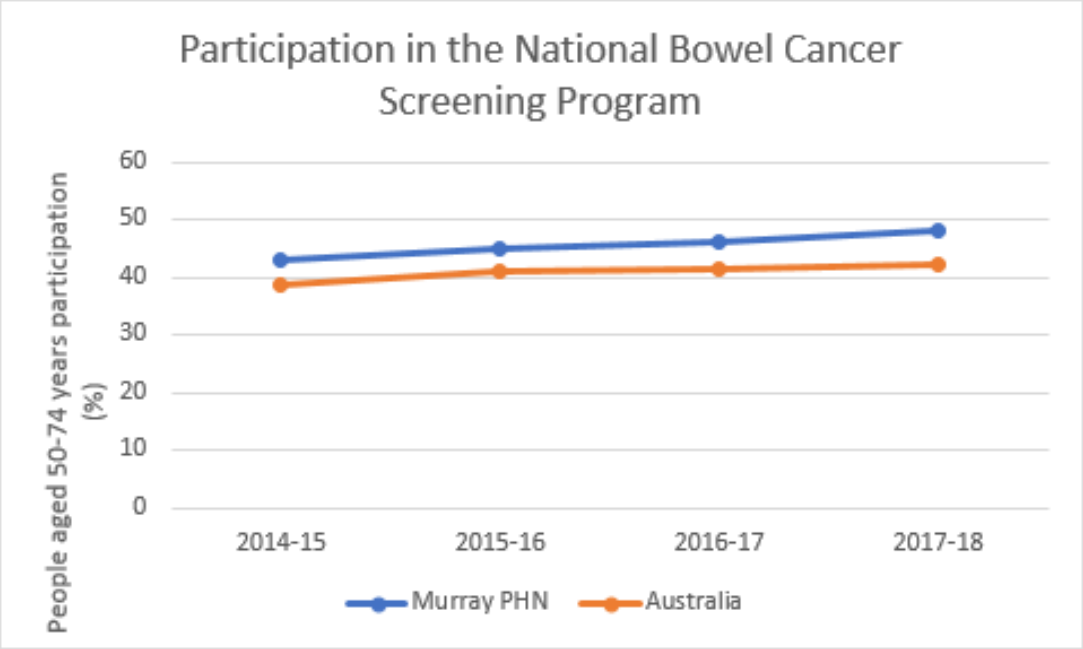
Cancer incidence and mortality

- All cancers combined:
    - the incidence rate of cancer in the Murray PHN region (2010-2014) was 502.5 per 100,000 (age standardised), which was comparable to the national rate of 495.7
    - the mortality rate of cancer in the Murray PHN region (2010-2014) was 179.4 per 100,000 (age standardised), which was higher than the national rate of 169.2
    - between 2011-2015 in the Murray PHN region, lung cancer caused 18.5% of cancer deaths, followed by bowel (9.4%), prostate (8.13%), and breast (6.2%).
- Bowel cancer:
    - the incidence of bowel cancer in the Murray PHN region (20010-2014) was 68.3 per 100,000 persons (age standardised), compared to national rate of 59.3 of per 100,000 persons
    - the mortality rate of bowel cancer in the Murray PHN region (2010-2014) was 23.6 per 100,000 persons (age standardised), which is higher than the national rate of 20 per 100,000 persons.
- Breast cancer:
    - the incidence of breast cancer (females) in the Murray PHN region (2010-2014) was 125.1 per 100,000 persons (age standardised), compared to national rate of 122.3 per100,000 persons
    - the mortality rate of breast cancer (females) in the Murray PHN region (2010-14) was 21.6 per 100,000 persons (age standardised), which is higher than the national rate of 20.9 per 100,000 persons.
- Cervical cancer:

- the incidence of cervical cancer in the Murray PHN region (2010-2014) was 7.9 per 100,000 persons (age standardised), compared to national rate of 7.1 per 100,000 persons
- the mortality rate of cervical cancer in the Murray PHN region (2010-2014) was 1.8 per 100,000 persons (age standardised), equal to the national rate of 1.8 per 100,000 persons (AIHW, 2019c).

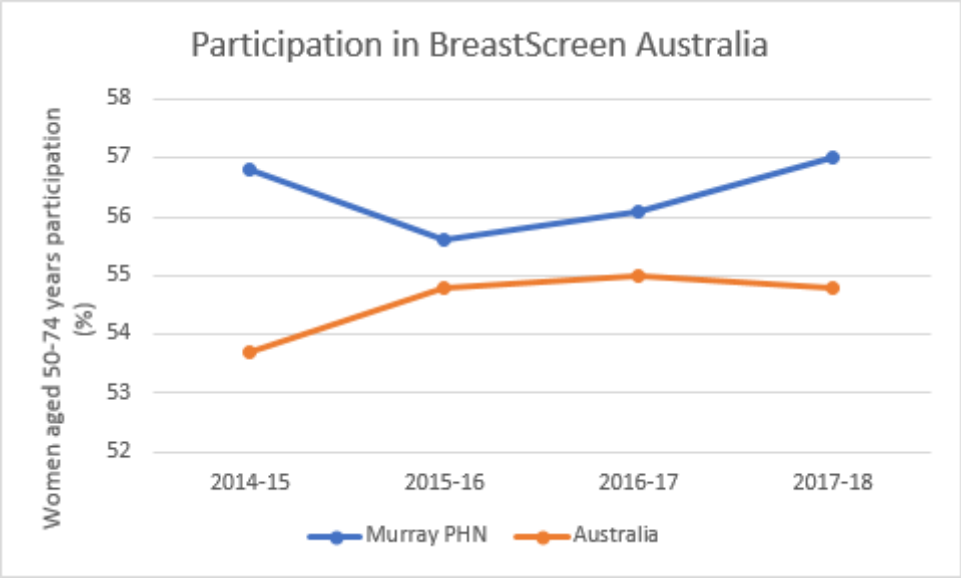
Cancer screening rates

- Bowel cancer:
  - bowel cancer screening participation rates for people aged 50-74 across the Murray PHN region for 2017-18 are higher than the Australian rate (48.1% compared to 42.4%) (AIHW, 2020h). LGA data available for 2016-17 reveals Mildura (40.5%) to be the only LGA within the region with a screening rate lower than the Australian rate (PHIDU, 2020b).



Source: AIHW, 2020

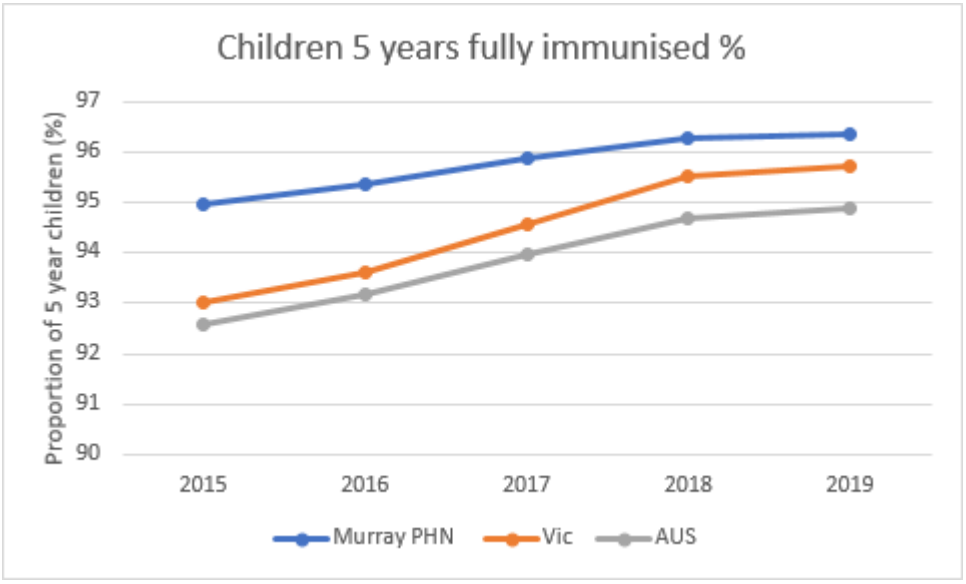
  - compared with the Victorian average of 7.9%, rates of new diagnosis of those screened for bowel cancer in 2016 and 2017 were highest in Loddon (10.2%), Towong (10.2%), Mitchell (9.8%), Buloke (9.5%) and Alpine (9.2%) (PHIDU, 2020b).
- Breast cancer:
  - breast cancer screening participation rates in 2017-18 for women aged 50-74 in the Murray PHN region (57%) are higher than the national average (54.8%) (AIHW, 2020h). However, LGA data available for 2016-17 shows ten LGAs within the Murray PHN region to have lower rates than the Victorian rate (54.1%), with LGAs in the North East having particularly low rates (PHIDU, 2020b).



Source: AIHW, 2020

- Cervical cancer:
  - average cervical cancer screening rates in 2015-16 for women aged 20-69 in the Murray PHN region are 60.8%, which is higher than the national rate of 55.4% (AIHW, 2020h). However, there are eight LGAs within the region with lower screening rates than the state rate (57.1%) (PHIDU,2020b).

- Child immunisation rates



Source: Department of Health 2020

- For the reporting period 1st July 2019- 30th June 2020, the percent of children who were fully immunised in the Murray PHN region
  - fully immunised at 1 year: 95.3%
  - fully immunised at 2 years: 92.7%
  - fully immunised at 5 years: 96.0% (DoH, 2020a).

- The SA3 areas in the Murray PHN region with the highest proportion of 5-year-old children fully immunised as at 30th June 2020 are: Campaspe (97.7%), Moira (97.6%) and Murray River-Swan Hill (97.4%). Upper Goulburn Valley (94.6%) and Loddon- Elmore (95.5%) had the lowest percentage of 5-year-olds fully immunised (DoH, 2020b).
- In the Murray PHN region for 2017, 83.3% of girls, and 80.1% of boys were fully immunised against HPV, which are above Australian rates of 80.5% and 76.1% respectively (PHIDU, 2020b).

Oral health

- The ambulatory care sensitive condition rate in 2018-19 for dental conditions was higher than the Victorian average (2.59 per 1,000 persons) in 13 LGAs in the Murray PHN region. Mildura had the highest rate (6.18), followed by Mitchell (4.73) and Swan Hill (4.27) (VHISS, 2020).
- Across the region, 12 of 21 LGAs report higher rates of persons who avoided or delayed visiting a dental professional due to cost, compared to the Victorian rate (33.9%). The Shires of Mitchell and Campaspe have the highest rates, 41.1% and 40.8% respectively, while Mildura had the lowest rate (26.3%) (VPHS, 2017).
- Twelve of the 21 LGAs across the Murray PHN region had higher rates of persons who described their dental health status as fair/poor, compared to the Victorian rate (24.4%). Within the region, Benalla (36.3%), Buloke (36.0%), Indigo (34.0%), Loddon (33.6%) and Swan Hill (31.2%) all had a notably higher rate compared to the Victorian average (VPHS, 2017).
- In the Murray PHN region, the percentage of adults who saw a dentist, hygienist or dental specialist in the preceding 12 months (2016-17) was lower (41.5%) than the national average (48.1%) (AIHW, 2018b).
- The rate of potentially preventable hospital admissions related to children with caries needing extractions points to lack of oral health literacy, cost, and rural/remote access to dental services.
- Lack of public dental services in Buloke and Gannawarra result in admissions for dental conditions/ extractions (especially for children).
- Towns currently without fluoridation exist across the Murray PHN region including Cobram, Numurkah, Myrtleford, Tatura, Bright, Woodend, Broadford, Mansfield and Alexandra. A fluoridation upgrade for Cohuna has commenced, with expected completion by November 2019, and Rochester and Heathcote have been wait-listed for water plant fluoridation upgrades. Many households also rely on tank water as their primary water source (Coliban Water, 2020).

Women's health

- The population of women in the Murray PHN region is 337,637, which is 49.9% of the total population (ABS, 2020).
- Although the education attainment and level of qualifications are comparable between males and females in the region, there are significantly more women who have an income below the minimum wage in the Murray PHN Region (47.3%), which is also higher than the Victorian rate (45.7%) (VWHA, 2018).
- Over 50% of women living in the LGAs of Towong, Benalla, Loddon, Gannawarra, and Buloke earn below the weekly minimum wage (VWHA, 2018).
- The *Mothers Index indicator* quantifies the best place for a mother to live based on one's health, education, socioeconomic status, and children's wellbeing. It ranks Victorian local government areas from one to 79 where one represents the best place for a mother to live. Benalla, Loddon, Buloke, Swan Hill, and Mildura all rank greater than 70, with Gannawarra, Campaspe, Moira, and Greater Shepparton ranking greater than 60, indicating that the Murray PHN region has nine of the poorest 19 areas for mothers to live in Victoria (Save the Children, 2016).

- The rate of chlamydia notifications for women in the Murray PHN region in 2018 (21.7 per 10000) was higher than the Victorian rate (20.8 per 10000), with significantly higher rates in the local government areas of Loddon (117.1 per 10,000), Wodonga (28.7 per 10,000) and Murrindindi (26.2 per 10,000) (VWHA, 2018).
- The rate of gonorrhoea notifications for women in the Murray PHN region in 2018 (1.4 per 10,000) was lower than the state average (2.1 per 10,000). Loddon (3.33 per 10,000) and Mansfield (2.91 per 10,000) were higher than the state rate (VWHA, 2018).
- The rate of Hepatitis B for women in the Murray PHN region in 2018 (0.4 per 10,000) was lower than the Victorian rate (1 per 10,000), with higher rates in Gannawarra (2.37 per 10,000), and Swan Hill LGAs (1.21 per 10,000) (VWHA, 2018).
- Approximately 200,000 Victorian women have endometriosis, however numbers are approximate due to lack of data collection procedures for the condition (Endometriosis Australia, 2018).
- Polycystic ovary syndrome (PCOS) affects 8-13% of Australian women of reproductive age. It is more common in some high-risk groups, such as Indigenous women (Jean Hailes, 2020).

Refugee health

- Victoria received 4261 humanitarian new settler arrivals between 1st July 2019- 30th June 2020. The Victorian average per LGA is 54 people. The LGAs with the highest number of newly arrived settlers for humanitarian reasons for this period are Greater Shepparton (142), Wodonga (118), Mildura (68), Albury (55) and Greater Bendigo (37) (DHA, 2020).
- Five of the seven regional and rural refugee settlement areas in Victoria are within the Murray PHN region: Greater Shepparton, Mildura, Wodonga, Greater Bendigo and Swan Hill (VRHN, 2018).

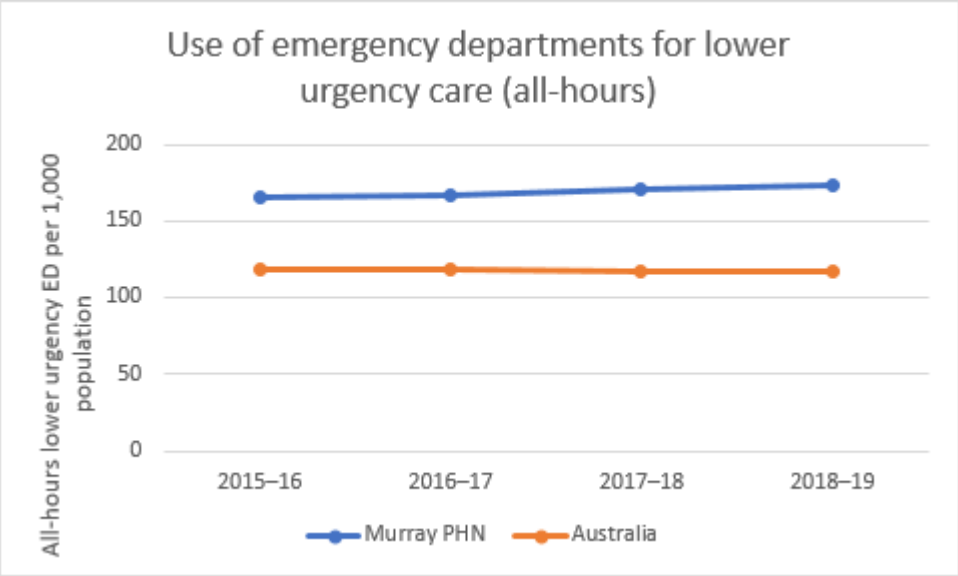
Service needs

Description of evidence

Service availability

- Central Victoria (CV)region has 71 general practices, one large regional health service, 13 small rural health services, two bush nursing hospitals and 12 community health sites. There are three Primary Care Partnerships (PCPs). ACCOs within the region operate two general practices. The Murray PHN Central Victoria office is in Bendigo.
- North East (NE) region has 47 general practices, three regional and rural health services, two PCPs, and a range of small rural health services. ACCOs operate one general practice. The Murray PHN North East office is in Albury.
- Goulburn Valley (GV) region consists of approximately 42 general practices, a large regional health service, an ACCO, 11 small rural health services; three of which are fully funded community health services, and six are associated with the small rural health services. ACCOs operate one general practice. There are two PCPs and the Murray PHN Goulburn Valley office is in Shepparton.
- North West (NW) region has 34 general practices, one large regional health service and a range of small rural health services. It also includes two PCPs. ACCOs operate two general practices. The Murray PHN North West office is in Mildura.
- Across the Murray PHN region, 37% of adults stated they could not access their preferred GP in preceding 12 months (2013-14) (ABS, 2016e).

- In 2013–14, 24.1% of adults in the Murray PHN region felt they waited longer than acceptable to get an appointment with a GP, this rate being higher than the national average (22.6%) (ABS, 2016e).
- In 2017-18, the overall percentage of adults who were admitted to any hospital in the preceding 12 months in the Murray PHN region (15.7%), was more than the national average (12.5%) (AIHW, 2020j).
- In 2018-19, the average all-hours lower urgency emergency department presentations per 1,000 persons for the Murray PHN region population is 173.1, compared to the national rate of 117.4. Rates differ significantly for SA3 areas across the region (AIHW, 2020n).



- In 2017-18, the percentage of adults in the Murray PHN region (7.1%) who delayed or avoided filling a prescription due to cost, in the preceding 12 months, was slightly higher than the national average (7.0%) (AIHW, 2020j).
- In 2016-2017, the number of specialist attendances per person, age-standardised, was slightly lower for the Murray PHN region (0.85) than the national average (0.89) (AIHW, 2018b).
- Alpine (22.1%) and Mansfield (22.5%) are the only two LGAs in the Murray PHN region with lower rates of adults having two or more chronic diseases compared to the Victorian rate of 25.5%. The local government area of Loddon (39.2%) is significantly higher than the state rate (VPHS, 2017).

Women's health

- There is a need for sexual and reproductive health services for women that are delivered with a life course perspective (WHLM, 2018).
- Older GSD women continue to experience stigma and marginalisation from health care institutions, which detrimentally impact their health outcomes. Practitioners often assume patients are heterosexual and fail to consider their specific needs as lesbian and/or transwomen with intersecting identities (Dune et al. 2018).
- Primary care-targeted workforce development on:
    - menstruation
    - endometriosis diagnosis, treatment and management
    - polycystic ovary syndrome diagnosis and treatment

    - contemporary contraception options
    - pregnancy counselling/options
    - sexual and reproductive health (SRH) care for people with disability
    - culturally appropriate sexual and reproductive health and CALD communities (WHLM, 2018).
- Community rights-based SRH education and training (to improve SRH health literacy).
- Address service gaps, specifically access to MTOP and STOP across the Murray PHN region.
- Increase knowledge of, and access to, women's health nurses and nurse-led models of SRH care (e.g., well women's clinics).
- Expanded nurse practitioner scope of practice for STI screening and telehealth termination services.

Immunisation services

Population immunisations - whole of life approach implementation needs to include:

- RACF immunisations for residents and staff
- immunisation programs for people aged over 65 years
- Aboriginal and Torres Strait Islander state funded activity for Aboriginal children
- chronic disease high-risk groups
- pregnant women
- hospital staff immunisation
- staff of childcare facilities.

Cancer screening

General data quality issues regarding cancer screening exist for many GP practices across the region. There is opportunity for Murray PHN, through its established relationship with general practice, to work towards a better understanding of the GP practice in improving cancer screening.

Oral health

- Public dental clinics - There are 92 chairs across 15 clinics, managed by 12 agencies, in the Murray PHN region. Clinics are located in Mildura, Robinvale, Ouyen, Boort, Swan Hill, Echuca, Bendigo, Mooroopna, Shepparton, Cobram, Seymour, Benalla, Wangaratta, and Wodonga. Outreach services are also provided to the Murray PHN region from Rumbalara to Bendigo and District Aboriginal Co-Operative and Njernda, North Richmond Community Dental to Murray Valley Aboriginal Co-operative in Robinvale (DHSV, n.d.).
- The Royal Flying Doctor Service has a mobile dental care program that provides dental services to people that live more than 50km from a public dental clinic.
- The average waiting times for general dental care at public dental agencies in the Murray PHN region, as of June 2019 varies considerably across the region, and were (in months):
    - Echuca Regional Health: 26.3
    - Northeast Health: 25.6
    - Albury Wodonga Health: 25.5
    - Seymour Health: 21.5
    - Sunraysia Community Health: 14.9

- Goulburn Valley Health: 12.3
- Mallee Track Health & Community Service: 10.4
- Boort District Health: 9.5
- Bendigo Health: 5.0
- Swan Hill District Health: 0.4
- Rumbalara: (unknown) (ADAVB, 2020).

In focus: Hazara community

Hazaras are the third largest ethnic group in Afghanistan, and the majority are Shiite Muslims. People of Hazara background are one of the major groups of people from refugee backgrounds and asylum seekers who have resettled in Victoria.

There have been two main waves of Hazara refugee arrivals in Australia. The first wave of refugee and asylum seekers arrived from Afghanistan between 1999 to 2002 and the second wave arrived in Australia and mostly resettled in Victoria, including the Murray PHN region between 2009 to 2013. Some of these refugees have received a permanent residency visa, but many of them are still living with temporary or bridging visas.

Many Hazara refugees are suffering from multiple and complex physical and psychological health issues, which may be influenced by both pre-and post-arrival experiences. The experience of trauma and torture in their home country, dangerous journeys to Australia and prolonged periods in immigration detention centres may have direct and indirect impacts on their physical and mental health and wellbeing.

As new residents, Hazara refugees often have poor understanding of the health system of Australia, lower levels of health literacy and many have difficulty accessing health care services. These barriers result in this population not receiving an appropriate level of treatment and support for physical and mental health issues.

As part of Murray PHN's work to understand its different populations, a discrete project was undertaken to understand the health and service needs of the Hazara population in the Murray PHN region. A Hazara community member, who trained as a doctor in Afghanistan, was employed to undertake this project. As part of this project, 250 Hazara people attended community meetings and 70 Hazara adults (48 male and 22 female) were interviewed and completed a verbal health assessment.

From the community discussions and engagement, it is apparent that community understandings of the size of the Hazara population is different to ABS census data. This is detailed in the table below. Reasons for these discrepancies may include: people choosing not to participate in the census (this may be due to limited understanding of purpose, language, fear of government authorities); issues with online submission of census form; new arrivals that have come to the locations after the census; or over estimates by community leaders (although these higher numbers were consistent for each location).

Area	Census 2016 Australia	Community leader population size estimates	Community leader estimated population breakdown by sex - male	Community leader estimated population breakdown by sex - female	Community leader population size estimates by age
Greater Shepparton	755	Up to 2000	60%	40%	65% <50 25% <18

Mildura	260	Over 900	58%	42%	72% < 50 24% < 18
Swan Hill	162	Over 270	62%	38%	60% <50 18% <18
Greater Bendigo	90	Up to 200	55%	45%	95% < 50 35% < 18

From community discussions and interviews with individuals, the following health and service needs have been identified.

Health needs

- Mental health is a common and serious issue at individual and community levels. Some identified causes include family separation, pre-and post-arrival experiences, depression, anxiety and social isolation.
- Support for ongoing connection to culture and customs is important for mental health and to support family structure and functioning.
- There is a need to support health literacy, including understanding the health system, greater awareness of screening and early detection, healthy lifestyle behaviours, and common conditions.
- There is a need for tobacco cessation support for smokeless tobacco users (chewing tobacco).
- Within a social determinants of health framework, identified needs included supported access to employment, particularly for younger adults as unemployment/under-employment was causing stress for individuals and families.

Service needs

- There is need for health services to improve engagement and to build trust with Hazara communities.
- There is a need for health services to improve their understanding of the Hazara communities they service, in particular, to better understand health literacy, culture and pre-and post-arrival experiences.
- There is a need for interpreters to be readily available, and for these to be perceived by community members as confidential and trustworthy, which may improve medication/treatment compliance.

Key issues

- Hazara community members perceive that there is a poor relationship between their community and local health service providers.
- Hazara community members are avoiding accessing health services due to lack of interpreters.
- Hazara community members are not complying with prescribed treatment of medication due to not understanding the purpose or their diagnosis/health condition.
- Of the 70 people who completed a health assessment there was only one smoker, but 33% (16/49) of the men interviewed indicated they chewed tobacco (MPHN, 2018b).

Data and consultation sources

- Murray PHN regional team (Nov 2016-July 2017).
- Murray PHN Advisory councils (Nov 2016-July 2017).
- Murray Health Voices (July 2017).
- Population Health Planning Network (July 2017).
- Murray PHN evaluation and feedback from GP Continuing Professional Development sessions (Nov 2016-July 2017).
- Murray PHN community consultation – Needs Assessment planning (Sept-Oct 2017).
- Women's Sexual and Reproductive Health Needs in the Murray Region: Final Report (2018).
- Women's Health Loddon Mallee, Bendigo.

PRIMARY MENTAL HEALTH (INCLUDING SUICIDE PREVENTION)

This section presents an overview of the health and service needs of the Murray PHN region specifically related to mental health and suicide prevention. The information presented below predominantly focuses on those who are already unwell and using our mental health service system. This section needs to be considered with a view of the social determinants of mental health and risk factors such as homelessness (or at risk of), ageing, trauma, drug and alcohol use, low income, social isolation, and the lack of meaningful occupation such as employment. As described in the general population health section herein, the Murray PHN region has hotspot areas of low income, high drug and alcohol use, an ageing population and populations who have high rates of trauma such as Aboriginal and Torres Strait Islander peoples and newly arrived humanitarian settlers. People experiencing poor mental health are also more likely to experience poor physical health, homelessness, have poor oral health, and comorbidities such as chronic disease and alcohol and other drug dependencies. Information relating to Aboriginal and Torres Strait Islander communities and mental health is described in the Aboriginal health section.

The mental health service sector continues to undergo significant transitions at both the Commonwealth and state level which is impacting on this sensitive population group. The transition to NDIS is presenting some emerging needs for people at risk of, or living with, mental illness. People aged over 65 years are not eligible for NDIS support, nor are people who were born overseas and are not Australian citizens. There will also be groups of service users that were previously eligible for services that due to slight modifications of criteria, or changed programs, will lose funding.

Another significant transition in the mental health sector is the introduction of a stepped care approach. Stepped care is a consumer-centred model of care that integrates mental health services within communities and supports general practitioners to help those who may be vulnerable to developing mental illness. A continuum of primary mental health services within a stepped care approach will ensure a range of service types that are matched to individual and population levels of need.

Action in the mental health priority area will be targeted towards the six mental health priority areas of the stepped care model which include the development or commissioning of low-intensity mental health services; region-specific, primary care-based services for children and young people; addressing service gaps in psychological therapies for vulnerable groups; commissioning services for people with severe and complex mental illness; a regional approach to suicide prevention; and enhanced local mental health services for Aboriginal and Torres Strait Islander communities.

Key issues

- Eight out of 22 LGAs in the Murray PHN region have higher rates of adults with high, or very high, levels of psychological distress than the state rate (13.3 age standardised rate per 100). Greater Shepparton (14.9), Mildura and Mitchell (both 14.7) have the highest rates per 100 population for the region (PHIDU, 2020b).
- GP Mental Health services per 100 people have shown a steady, marginal decline from 15.17 in 2015-16 to 14.36 in 2018-19 for the Murray PHN region (AIHW, 2020f).
- Significant rates of suicide are experienced in the Murray PHN regions of North West, Goulburn Valley and North East, with significantly high rates of ambulance attendance to suicide attempts in these regions. Eighteen LGAs within the Murray PHN region have average annual age standardised rates higher than the state average (10.1 per 100,000) for avoidable deaths from suicide and self-inflicted injuries (2013-2017). Benalla has the highest rate (27.8), followed by Buloke (22.5) and Indigo (21.9) (PHIDU, 2020b).
- Rates of hospital admission for intentional self-harm in 2017-18 for both males and females are higher for Murray PHN compared to state averages, but lower than national averages. Females

have almost double the rate of intentional self-harm injury hospital admissions compared to males for Murray PHN in 2017-18 (PHIDU, 2020b).

- It is estimated that 19.6% of the population (aged 18 to 85 years) will experience mental ill-health across the Murray PHN region. Of this group, estimates indicate 20,841 people will have moderate to low mental health needs and 4,420 people will have severe and persistent mental illness with complex needs, although only a proportion of these people will access services (as defined in a stepped model of care) *ex ante*.
- Access to specialist services and targeted primary mental health care is limited across the region.
- People with serious mental illness typically live between 10 and 32 years less than the general population. Around 80% of this higher mortality rate can be attributed to the much higher rates of physical illnesses, such as cardiovascular and respiratory diseases and cancer experienced by this population (Harris et al. 2018).

Community voice

Across several community consultations, five key themes emerged regarding mental health needs and service system issues:

- ACCESS: relating to costs, specialist services, outreach, telehealth models, waiting times, stigma, and mental health literacy.
- MENTAL HEALTH SYSTEM: inflexible funding models, cross-border issues including discharge planning, services informed by people with lived experience, and transition to NDIS support.
- RURALITY: counter-productive impact of competitive tendering in rural areas and need for alternative models of care including community-based and peer-led.
- WORKFORCE: limited availability of child and adolescent specialists, lack of female practitioners, underreporting of mental health conditions.
- PERSON-CENTRED CARE: inadequate cultural awareness and support for co-morbidities.

Health needs

Description of evidence

Registered mental health clients

- Benalla (26.3 per 1,000 persons, age-standardised), followed by Mildura (24) have the highest rates of registered mental health clients in the Murray PHN region, more than double the Victorian average (11.9) and are ranked 4th and 6th highest in Victoria respectively. Also ranked in the top 10 LGAs in the state, Wangaratta, Indigo and Wodonga have rates significantly higher than the Victorian average (DHHS, 2015).

Mental health overnight hospitalisations

- The mental health overnight hospitalisation rate (2017-18) in the Murray PHN region (101.5 per 10,000) is lower than the national average (104.9 per 10,000) (AIHW, 2019i).
- The SA3 areas of Albury (115.3 per 10,000), Bendigo (113.7 per 10,000), Campaspe (111.1 per 10,000) and Shepparton (106 per 10,000) are all higher than the national average (AIHW, 2019i).

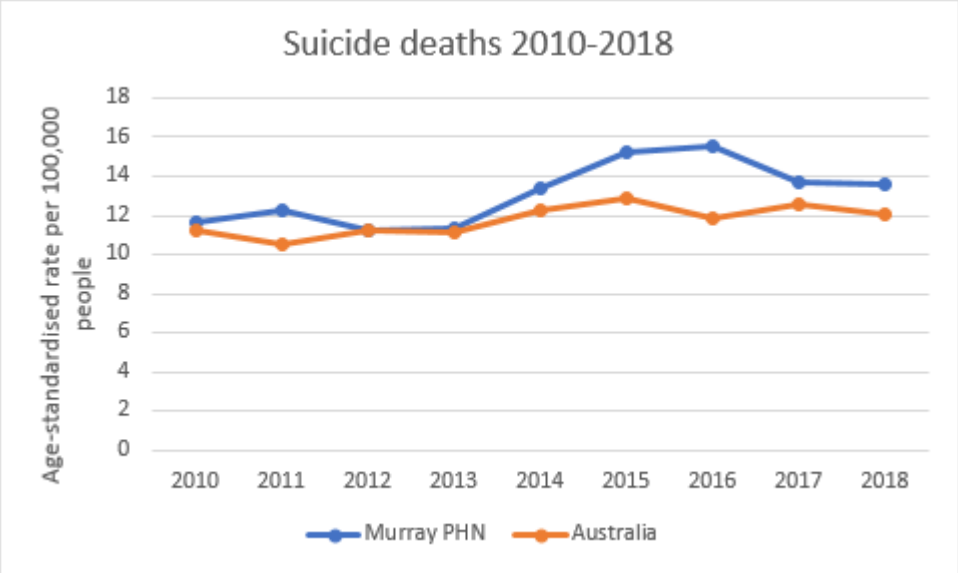
Adult population with high or very high psychological distress (K10)

- Greater Shepparton (14.9), Mildura and Mitchell (both 14.7) are significantly above the Victorian age standardised rate (13.3 per 100) for the proportion of the population reporting high or very high psychological distress. Eight out of 22 LGAs in the Murray PHN region have higher rates than the state rate (PHIDU, 2020b).

GP Mental Health Services

- In 2018-19, Murray PHN population received an average 14.36 GP Mental Health Services per 100 people. The SA3 areas of Shepparton (18.1), Macedon Ranges (17.67), Upper Goulburn (17.18), Moira (17.1), Heathcote-Castlemaine-Kyneton (16.64) and Bendigo (16.46) have higher rates of GP Mental Health Services than the Murray PHN average (AIHW, 2020f).

Suicide prevention



Source: AIHW National Mortality Database 2018

- The age-standardised rate per 100,000 people for suicide deaths in 2018 is 13.6 for the Murray PHN region, which is higher than the national rate of 12.1 (AIHW, 2020m). There are 10 local government areas in the Murray PHN region with annual suicide frequency rates higher than the regional Victorian rate (Coroner's Report, 2018).
- Avoidable deaths from suicide and self-inflicted injuries in the Murray PHN region area in 2013-2017 had an average annual age standardised rate of 15.5 per 100,000, significantly higher than the state rate of 10.1. Benalla had the highest rate at 27.8 per 100,000, followed by Buloke (22.5) and Indigo (21.9) (PHIDU, 2020b).
- In 2017-18, public hospital admissions by principal diagnosis- intentional self-harm, age standardised rate per 100,000 females for the Murray PHN region is 139.7, considerably higher than the Victorian rate of 115.5 per 100,000 females. Greater Bendigo has the highest rate for the Murray PHN region of 210.3 (PHIDU, 2020b).
- For males in 2017-18, public hospital admissions by principal diagnosis- intentional self-harm, age standardised rate per 100,000 for the Murray PHN region is 74.3, again considerably higher than the Victorian rate of 57.6 per 100,000 males. Greater Bendigo has the highest rate for the Murray PHN region at 116.5, followed by Benalla 114.7 (PHIDU, 2020b).

Service needs

Description of evidence

Stakeholder consultations:

CONSUMER AND CARER EXPERIENCES

- Mechanisms to support greater and more effective consumer and carer participation at an individual and systemic level across the continuum of need.

- A lack of consultative mechanisms for gaining feedback and input from mental health consumers and carers who use the primary mental health service system.
- Stigma impacts negatively upon the health and wellbeing of people who experience mental illness within the region, including stigma from providers of mental health services.

ACCESS

- Gap in services for eating disorders, particularly in the North East of the region.
- Lack of access to care coordination for people with severe mental illness being managed in a primary care setting.
- Potential service access limitations associated with mental health nurses located within specific general practices.
- Access to psychological therapy services and state funded mental health services is limited in some smaller regional areas.
- Access to private psychiatry is limited.
- Lack of transport is a barrier to service access.
- Outreach is limited, and some communities have absence of local service provision.
- Access to bulking billing GPs is limited in some areas.

SERVICE SYSTEM ISSUES

- Frustration with discharge and re-entry processes at the specialist mental health level.
- Missing those who fall through the gap between primary care and specialist mental health services.
- Frustration with lack of information sharing between care team and consumers and carers.
- The system is difficult to navigate.

SERVICES FOR PEOPLE WHO EXPERIENCE SEVERE MENTAL ILLNESS

- Lack of service response in acute circumstances.
- Significant barriers for people with severe and persistent mental illness in accessing the community, resulting in social exclusion and lack of participation.
- Timely discharge from inpatient units is compromised due to lack of supported accommodation options in rural communities.
- Dual diagnosis is poorly understood.
- Poor transition and integration across multiple sectors with limited coordination.
- Lack of available longer-term case management.
- Shortage of skilled workforce.

CHILD AND YOUNG PERSONS MENTAL HEALTH (CYMS)

- There are headspace centres located in across our region in Bendigo, Swan Hill, Mildura, Shepparton, and Albury Wodonga.
- There is a lack of services for children and young persons' mental health outside the locations where there is a headspace centre in operation.
- There is a lack of providers specialising in child and youth mental health in a primary care setting.
- Access to early identification, intervention and care options for children and adolescents is limited.

- Poor collaboration between services means that the potential benefits of headspace is not realised.
- Limited outreach restricts accessibility for the youth community.
- Lack of targeted services in some areas including specialist mental health, primary mental health and school-based services.
- There is a missing middle between current primary care services and Child and Youth Mental Health Services (CYMS) for complex presentations.

CALD COMMUNITIES

- Barriers in accessing support and intervention for people from culturally and linguistically diverse communities.
- Lower usage of translation services associated with provision of ATAPS/MHSSRA and MHNIP services in communities with high CALD populations, including new settlers.

Partners in Recovery and NDIS

- Murray PHN lead two Partners in Recovery (PIR) programs in its region: Loddon Mallee Murray (LMM) and Hume with a regional coverage that was slightly divergent to Murray PHN's footprint, operating in four NDIS rollout regions: Loddon, Murrumbidgee, Ovens Murray and Mallee.
- The Loddon NDIS region began NDIS rollout on 1 May 2017; the Murrumbidgee NDIS region began NDIS rollout on 1 July 2017; the Ovens Murray NDIS region began NDIS rollout on 1 October 2017; the Mallee NDIS region including the LGAs of Buloke, Gannawarra, and Swan Hill began roll out on 1 January 2019.
- PIR participants supported under the Hume and Loddon Mallee Murray program had in most cases, received adequate support coordination funding in plans. Often however, a plan review is instigated to address a lack of other supports such as transport.
- In general, NDIS transition presents a number of issues in relation to service needs:
    - access to the NDIS presents a significant issue for people with psychosocial disability for a number of reasons including; lack of understanding about what the Scheme offers, difficulties demonstrating eligibility criteria in relation to functional impairment and permanency, inconsistent assessment outcomes from the National Access Team and the impact of the process on the mental health of consumers
    - plan implementation is hindered by lack of appropriate services available to provide funded supports, waitlists are common and some providers "opt-out" of supporting people with mental illness and complex needs
    - choice and control are an *illusion* for many NDIS participants due to market thinness and rural locale described above, lack of participant knowledge, confidence and skills to navigate the new system (particularly those who don't have support coordination in their plan).

Suicide prevention

- Limited access to integrated suicide prevention services across the Murray PHN region.
- Prevention services exist in some areas but are not well integrated or known.
- Identifying the at-risk person is inconsistent and often missed.
- Training in risk assessment and safety planning is indicated.
- Poor discharge practices.
- Communities and front-line worker need awareness raising and training.
- Referral processes are variable.

- Lack of targeted services for social minority groups such as lesbian, gay, bisexual, transgender and intersex community (LGBTIQ+) people and people from CALD backgrounds.

In focus: Place-based suicide prevention

Murray PHN has partnered with the Victorian Government to develop and deliver place-based suicide prevention strategies in Mildura and Benalla – two of 12 sites where the state government is trialling this initiative. It forms part of the Victorian suicide prevention framework 2016-2025 that aims to halve the state's suicide rate by 2025.

Project officers are working in the two towns to coordinate strategies that address local priorities, engaging and consulting with community, looking at data and using an evidence-base as a foundation for decision making.

The aim is to use an evidence-based suicide prevention approach, drawing on available collective impact approaches and mental health-specific approaches. The strategies will be built around the nine evidence-based strategies for communities. Communities have driven the development of the local plans, based on identified needs. The interventions focus on capacity building and enhancing system effectiveness rather than service expansion or new services.

The projects, based in Benalla and Mildura, have identified health and service needs in the following areas:

- whole of community approach
- stronger links with Aboriginal and Torres Strait Islander workforce
- community capacity in Mental Health First Aid, suicide bereavement, Mindframe and safeTALK
- workforce capacity in *pathways to care*, Complex Systems Thinking, gatekeeper training, and general practice suicide prevention
- mechanisms to better collate and link data
- additional coordination resources to strengthen prevention and education support
- development of coordination protocols between agencies to initiate and coordinate effective responses.

Data and consultation sources

- Community consultation has been undertaken through the following:
- Murray PHN regional team (Nov 2016-July 2017).
- Murray PHN evaluation and feedback from GP continuing professional development sessions (Nov 2016-July 2017).
- Murray PHN Advisory councils (Nov 2016-July 2017).
- Murray Health Voices (July 2017).
- Partners in Recovery (PIR) Needs Assessment (through a consultative process with consumers, carers and feedback from PIR clients).
- Report: Contributing Lives, Thriving Communities - Review of Mental Health Programs and Services, National Mental Health Commission (2015).
- Pathways through the Jungle PIR Project Report - Hume PIR.
- Program documentation - Northwest (PIR and Mental Health Community Support Services (MHCSS) and Loddon Mallee Murray and Hume PIR regions).
- Feedback to Hume PIR from local migrant communities in Wangaratta.

ALCOHOL AND OTHER DRUGS

The consumption of alcohol, tobacco and other drugs is a major cause of preventable disease and illness.

Population groups vulnerable to harms related to alcohol and other drugs include Aboriginal and Torres Strait Islander people, homeless or at risk of people, older people, people from culturally and linguistically diverse backgrounds, people identifying as lesbian, gay, bisexual, transgender, intersex or queer (LGBTIQ+), people in contact with the criminal justice system, people with mental health conditions, and young people. There are four public prisons in the Murray PHN region, one youth justice centre, and as previously described, high numbers of the more vulnerable groups. It is also well established that rural communities have high rates of alcohol consumption and rural people experience disproportionately high levels of alcohol misuse and its associated burden of disease and injury (NRHA, 2014). Information relating to Aboriginal and Torres Strait Islander communities and AOD is described in the First Nations Health and Healing section. This health priority area is closely related to the mental health priority, with many AOD service users experiencing mental health comorbidities.

Key issues

- Smoking rates in the Murray PHN region are considerably higher than state and national averages.
- The rates of alcohol consumption and related harm indicate an enduring need to be comprehensive in the strategic effort and cognisant of rural community culture and subsequent impacts.
- For alcohol related assaults, the North West district has considerably higher rates than other regions within the Murray PHN region and the Victorian average rate.
- Emergency department presentations for co-occurring AOD and mental health disorders are increasing across the Murray PHN region.
- Rural Australians demonstrate higher rates of risky health behaviour, including risky alcohol and illicit drug use. This may suggest more complex use trends of methamphetamine use among those living in rural and regional locations (Monash University, 2017).
- In providing current AOD needs data and priority issues, it is viewed that the category has intrinsic overlap with related and broader priority issues; especially mental health.

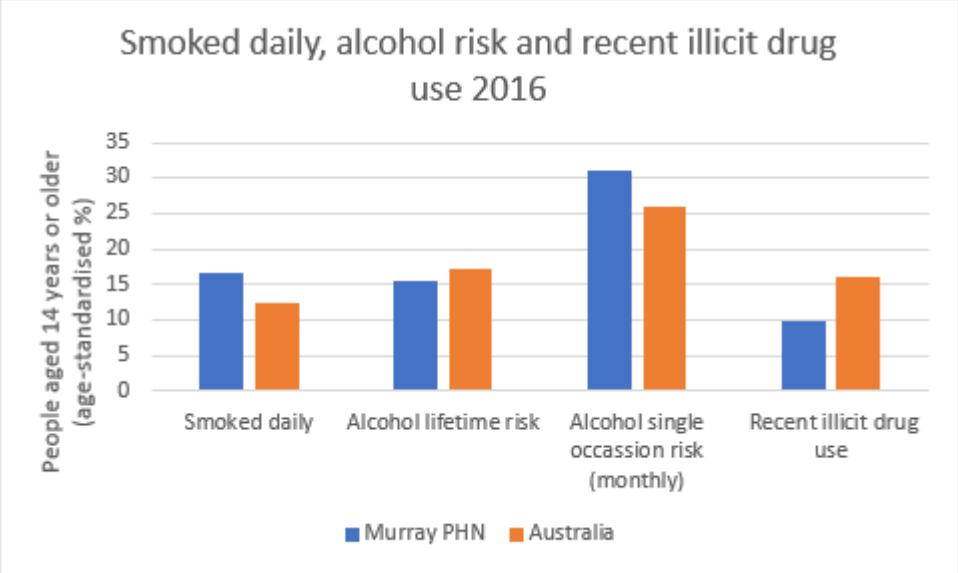
Community voice

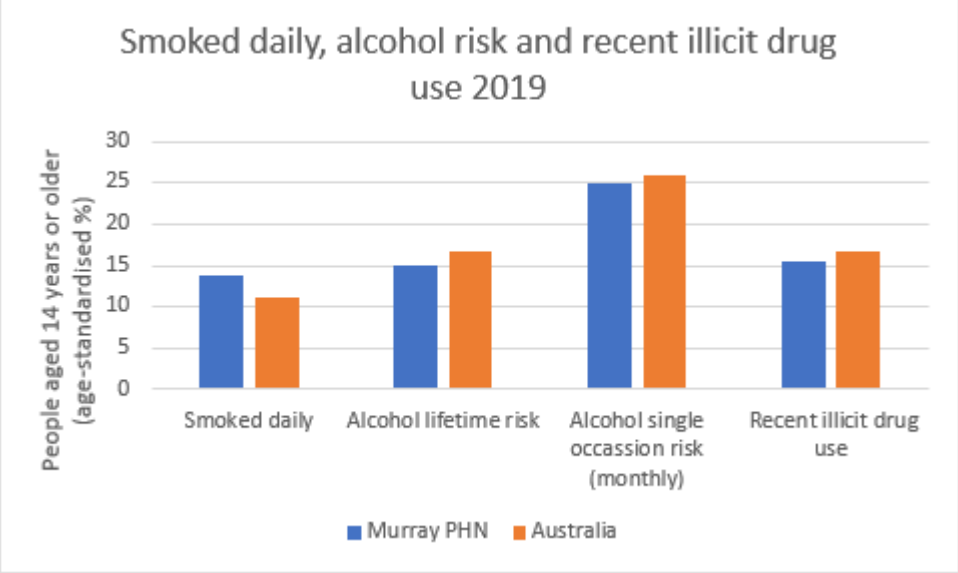
Across several community consultations, key themes emerged regarding alcohol and other drugs health needs and service system issues:

- the community noted that stigmatisation of alcohol and other drug clients was often greater than that experienced by mental health clients, also the need to promote non-judgemental treatment for AOD-related chronic disease
- a need for more specialist services including telehealth options, addiction specialists, place-based withdrawal, pain management and dual diagnosis
- a need for general practitioner skills training, early intervention options in primary care settings such as alcohol brief intervention, and specialist staff supervision
- improved system integration and support through better links with pharmacies, AOD service pathways, and adequate management of comorbid conditions such as diabetes
- PHN collaboration to systematise state-wide and cross-border discharge planning from detoxification facilities is needed.

Health needs

Description of evidence





Source: (AIHW, 2020i) National Drug Strategy Household Survey 2019

Smoking rates and alcohol risk (both lifetime and single occasion) have reduced for the Murray PHN region in 2019 from 2016, while recent illicit drug use has increased significantly (10% to 15.5%). Alcohol risk (both lifetime and single occasion) for Australia have remained similar when comparing 2016 and 2019, however, illicit drug use rates have increased (16% to 16.8%), while smoking rates have reduced from 12.4% to 11.2%.

Smoking rates

- In 2019, 13.7% of residents aged 14 years and over in the Murray PHN region smoked daily (age-standardised) which is higher than the national average of 11.2%. However, smoking rates have decreased for the Murray PHN region from 16.7% in 2016 (AIHW, 2020i).
- LGAs within the Murray PHN region with the highest rates of smoking include Loddon (26.9%), Mitchell (23.7%) and Swan Hill (23.2%), with rates all significantly higher than the Victorian rate (16.7%) (VPHS, 2017).

Alcohol consumption

- Consumption of alcohol at levels of increased lifetime risk of harm was higher for all LGAs in the Murray PHN region, except for two, compared to the Victorian average (59.5%). The LGAs with the highest proportion of adults who consume alcohol at a level that leads to alcohol related harm over their lifetime are Macedon Ranges, Towong and Wodonga (all 73%) (VPHS, 2017).
- There are 19 LGAs with populations who consumed alcohol at a level that leads to increased risk of alcohol related harm on a single occasion that are above the Victorian average (43%). Loddon LGA has the highest rate (57%), followed by Macedon Ranges and Towong (both 56%) (VPHS, 2017).

Alcohol-related hospitalisations

- Rates for alcohol-related hospitalisations per 10,000 population (2018-19) in the Murray PHN region were significantly greater than the Victorian rate (56.5%) in Strathbogie (78.9%) and Benalla (74.2%) (AODStats, 2020).

Alcohol-related ambulance attendances

- Alcohol only (intoxication) ambulance attendances per 100,000 population (2018-19) were significantly higher than the Victorian rate (369.5), in the LGAs of Benalla (641.8) and Murrindindi (511.1) (Ambo-AOD Stats, 2019).

Alcohol-related serious road injuries

- In 2017-18, 211 alcohol-related serious road injuries during high alcohol hours occurred in the Murray PHN region, an increase from 123 in 2016-17. The average rate for the Murray PHN region (5.6 per 10,000 people) is well above the Victorian rate (2.4 per 10,000 people). The LGAs of Gannawarra (13.3), Towong (9.9) and Loddon (9.3) have alarmingly high rates (AODStats, 2020).

Alcohol-related assaults

- In 2017-18, the state average for assaults during high alcohol hours per 10,000 population was 10.0 per 10,000 population, with an average across the Murray PHN region of 12 per 10,000 population. The following LGAs in the Murray PHN region were significantly higher than the state and Murray PHN average: Mildura (23.6), Swan Hill (18.7) and Benalla (17.9) (AODStats, 2020).

Alcohol-related family violence

- Definitive or possible alcohol-related family violence incidents rate (33.7 per 10,000 population) in 2017-18 for the Murray PHN region is significantly higher when compared to the Victorian rate (17.3). Nineteen LGAs across the Murray PHN region have higher rates than the Victorian rate, with the highest being in Mildura (87.6), Swan Hill (87.3) and Greater Shepparton (41.8) (AODStats, 2020).

Alcohol-related deaths

- The rate of alcohol-related deaths (2017) in the Murray PHN region is greater than the Victorian average (1.3 per 10,000 people) in the LGAs of Campaspe and Wangaratta (both 2.4 per 10,000 people) (AODStats, 2020)

Alcohol-related episodes of care

- Compared with the Victorian average rate of 25.3 per 10,000 people (2018-19), the rate of episodes of care for alcohol-related problems was higher for the Murray PHN region (27.2 per 10,000 people). The LGAs of Mildura (63.8 per 10,000 people), Gannawarra (57.8 per 10,000 people) and Strathbogie (50.7 per 10,000 people) were substantially higher than the Victorian average (AODStats, 2020).

Illicit drug-related episodes of care

- The rate of episodes of care for illicit drug- related problems (2018-19) was notably higher in the LGAs of Greater Shepparton (105 per 10,000 people), Mildura (83) and Mitchell (50.6), having a substantially higher rate than the Victorian rate (37.8 per 10,000 people) and the Murray PHN average rate (30.8) (AODStats, 2020)

Illicit-drug related hospitalisation and ambulance attendance rates

- Hospitalisation rates for illicit drug use (2018-19) were higher compared with the state average (29.7 per 10,000 people) for four LGAs within the Murray PHN region, with Mount Alexander having the highest rate (34.3 per 10,000 people), followed by Greater Shepparton (33.3) (AODStats, 2020).
- Illicit drug-related ambulance attendance rates per 100,000 people in Victoria for 2018-19 is 208.3, with Murray PHN's average rate of 123.3 being much lower. However, Greater Bendigo and Greater Shepparton have rates well above the region's average, of 199.1 and 186.3 respectively (Ambo-AODStats, 2019).

Illicit drug use and possession crime rates

- For the year ending June 2020, compared with the Victorian average, rates for *drug use and possession* crime are particularly high in the North West region- 904 per 100,000 in Buloke, 432.1 in Mildura and 398.3 in Swan Hill.
- The highest number of incidents of criminal offences related to *cultivating or manufacturing drugs* for the year ending June 2020 in the Murray PHN region, occurred in the LGAs of Mildura, Greater Bendigo and Greater Shepparton (Crime Statistics Agency, 2020).

Co-occurring mental health and AOD disorders

- Presentations to emergency departments for co-occurring AOD and mental health disorders in 2019-20 increased by 5.3% from 2018-19 for the Murray PHN region, lower than the increase for the state (7.5%) (VEMD, 2020).

Methamphetamine offences

- Throughout 2010-16, the number of methamphetamine offences in Murray PHN's region accounted for 9.5% of all Victorian methamphetamine offences.
- For the period 2010-16, the rate of methamphetamine offences ranged from 9.5 per 100,000 in 2010 in Swan Hill, to 168 per 100,000 population in Swan Hill, to 168 per 100,000 population in Greater Shepparton in 2016. For the period 2014-16, the biggest increases were seen in Mildura (63%), Greater Shepparton (61%) and Greater Bendigo (60%). This compares to a state-wide increase of 174% for the same period (Monash University, 2017).

Service needs

Description of evidence

Coordination and integration

- Require increased effort to build collaboration and effective systems between primary care and AOD sector in line with stepped care approaches.
- Shared-care arrangements are variable, while there are pockets of good practice, coordination and mechanisms to support shared care are generally lacking.
- Ongoing education and support for general practice regarding opioid replacement treatment programs.
- Access to brief intervention, residential rehabilitation and family support services requires system modification to support increased usage.

- A lack of appropriate responses for the complexities of methamphetamine use that include social, clinical and environmental considerations.

Treatment services

- Bed-based withdrawal coverage increased during 2017 in Wangaratta and Bendigo, but availability is limited in other areas of the region.
- Availability of targeted youth services is disparate across the Murray PHN region.
- Low uptake of web-based treatment and support options in rural areas - largely influenced by gaps in telecommunication coverage and internet bandwidth.
- An absence of platforms for meaningful and effective consumer and carer engagement across the region.
- Service system mapping indicates that access to specialist services such as Aboriginal and Torres Strait Islander specific, youth and withdrawal is largely determined upon place of residence.

Workforce development

- Rural inequality in access to face-to-face professional development opportunities for AOD workforce, including general practice, particularly to support opioid and ice related issues.
- Recent training has included dual-diagnosis, chronic pain management, cultural safety, and AOD family support.
- Workforce has identified chronic pain management and co-occurring AOD and mental health conditions as priority training needs.
- Limited access to professional development and education for workers – metropolitan-based courses are cost prohibitive to attend.

Stakeholder consultations

- Independent Review of New Arrangements for the delivery of Mental Health Community Support Services and Drug Treatment Services found:
    - access to services in rural communities limited due to availability of skilled clinicians and service options - communities are underserviced
    - poor use of technology to support service access
    - poor uptake of family support services
    - lack of funding within services to respond to crisis situations
    - lack of tracking with clients between intake, assessment and treatment
    - homelessness, or at risk of and lack of crisis accommodation has subsequent impact on treatment options
    - lack of funding and activity in prevention and early intervention
    - appropriate facilities to deliver services difficult to access due to perceptions and stereotypes
    - lack of transport and/or cost, limited options to reach services (MPHN, 2016).
- Murray PHN consultation with AOD treatment services and other key stakeholders indicated some main themes:
    - difficulty in navigating system (including central intake via contracted service provider) and reluctance to make referrals
    - assessment/intake is complex and disengages clients

- due to central intake, treating agencies often need to undertake an additional (second) assessment
- a sense that since central intake commenced, referrals have dropped
- no common data system - lack of central data or client management system for dual diagnosis
- clients can impact care coordination, impeded by less than strong professional relationships
- limited outreach results in people not being treated earlier
- coordination of care is not funded
- roles of services in treatment can be poorly defined
- GPs are often the starting point for system entry but engagement and relationships less developed, where previously direct referral capacity from GP strengthened GP/AOD worker relationships
- discharge notifications from emergency departments and mental health services are inconsistent.

Data and consultation sources

Consultation has been undertaken through the following:

- Murray PHN regional team (Nov 2016-July 2017).
- Murray PHN evaluation and feedback from GP Continuing Professional Development sessions (Nov 2016-July 2017).
- Murray PHN community consultation – Needs Assessment planning (Sept–Oct 2017).
- Murray PHN Advisory councils (Nov 2016-July 2017).
- Murray Health Voices (July 2017).
- Murray PHN AOD sector consultation (Dec 2016).
- consultations with ACCOs and other key stakeholders.
- consultation with Victorian Aboriginal Community Controlled Health Organisation (VACCHO).
- Harm Reduction Victoria – consultations.
- AOD region plans.

FIRST NATIONS HEALTH AND HEALING

The Murray PHN region is home to a diverse population of Aboriginal and Torres Strait Islander people. There are more than 14 different Aboriginal language groups in our region and a range of community-led Aboriginal organisations. Aboriginal people view health as something that connects all aspects of life. It is "not just the physical wellbeing of the individual but the social, emotional, and cultural wellbeing of the whole community in which each individual is able to achieve their full potential" (NAHSWP, 1989). Describing the health of Aboriginal Victorians involves looking at individual characteristics and behaviours, as well as the broader social, economic and environmental factors that influence health. It is also important to understand the impact of a history of colonisation and the subsequent disadvantage experienced by Aboriginal people over more than two centuries. Recognising the fundamental influence of Aboriginal culture on health outcomes is one of the critical dimensions in both understanding and responding to the health disparities. Aboriginal health should be approached in terms of relationships, family, and community; and health-related decisions will be influenced by culture, social connections, racism, communication, choice, and distrust of service providers.

This section of the Needs Assessment includes information regarding Aboriginal and Torres Strait Islander people including chronic disease, mental health, alcohol and other drugs, and child health. Many of the data presented are aggregated at the state or national level due to the limited availability of local data. Where possible, we have included local information, and acknowledge that there are many different *units* of geographical areas described. The population health data also needs to be viewed considering the inconsistencies that are known in Aboriginal and Torres Strait Islander participation in the census and other surveys. Many reports and publications about Aboriginal and Torres Strait Islander people focus on the negative differences between Aboriginal and Torres Strait Islander people and non-Indigenous people, and we acknowledge this Needs Assessment is no different. We will ensure that in future we will include celebrations of positive differences and improvements in health where the information is available.

Limitations

Reporting for this Needs Assessment currently requires a focus on traditional disaggregate data at a population health level, which results in highlighting the gaps and informing a deficit discourse. Positioning the non-Indigenous person as the benchmark applies a reductive approach to homogenised statistics of First Nations people devoid of difference. Where possible, the focus of reporting will be on the trend rather than comparison and improvements will be celebrated. Obtaining locally useful data for Aboriginal and Torres Strait Islander Communities is difficult and usually unavailable at the LGA level. Therefore, unlike other priority areas, the predominant geography is IARE or Victoria rather than LGA.

Key issues

- Health data establishes that four preventable chronic conditions - cardiovascular disease, diabetes, cancer and mental illness - are the most significant direct contributors to the life expectancy gap between Indigenous and non-Indigenous Victorians.
- There is an over-representation of Aboriginal and Torres Strait Islander people in hospital separation data. In 2017-18, the age-adjusted separation rate for Aboriginal and Torres Strait Islander people was 2.6 times higher than for non-Indigenous people (HealthInfoNet, 2020).
- For 2017-18, Aboriginal and Torres Strait Islander people had a rate of overnight mental health related separation with specialised psychiatric care more than double that of other Australians (150.6 versus 63.7 per 10,000 population respectively) (AIHW, 2019g).

- A need to work in close partnership with Aboriginal health services and community organisations to identify needs and provide screening, assessment and early intervention programs more collaboratively - especially in chronic disease management and smoking cessation.
- Increased risk factors for social determinants of health, increased family violence, increased complexity and chronicity, and a lack of acknowledgment of the importance of culture within models of care – increasing the need for assistance for older community members such as health literacy issues and transport needs.
- EDs are no longer collecting cultural status. This will have implications for monitoring Aboriginal and Torres Strait Islanders presenting in crisis and impact of care coordination on chronic disease management.

Aboriginal and Torres Strait Islander voice

The following themes emerged during consultation with the Aboriginal and Torres Strait Islander community:

- build capacity for dual diagnosis response
- increase GP mental health expertise
- lack of specialist children's counselling services
- more communication required between services and the prison system
- need to improve cultural sensitivity
- lack of accessible and affordable treatment options
- build capacity of mainstream providers particularly with complex needs clients
- the stigma of mental health is a barrier to accessing services
- ACCOs have noted the under reporting of Aboriginal and Torres Strait Islander populations in government data sources, such as ABS, and that this is common across communities (Murray PHN Indigenous Health Advisory Council).
- VACCHO's recent study on the unmet GP need across the state in ACCOs indicated only 35% of need is met. Discussed difficulties in workforce recruitment, retention, pay matching and other workforce capacity concerns (Murray PHN Indigenous Health Advisory Council).

Key messages from Murray PHN Indigenous Health Advisory Council (April 2018)

- Continuity of funding is vital; without this, the retention of staff is difficult.
- Projects require funding for longer than 12-18 months to allow adequate time for impact and evaluation.
- Funding for projects needs to include adequate provision for on-costs.
- There is a shared interest and desire to work with Murray PHN on early years, which aligns with Murray PHN's priority area of child health and builds on the work of MDAS' early years program (Effective Change, 2016).

Health needs

Description of evidence

Family and community

- It is estimated 16,529 persons identify as Aboriginal and Torres Strait Islander in the Murray PHN region. This represents 29% of the total Victorian Aboriginal and Torres Strait Islander population.

Murray PHN has significant populations residing in the local government areas of Swan Hill, Mildura, Greater Shepparton and Greater Bendigo (ABS, 2018).

- In 2012, the proportion of Aboriginal and Torres Strait Islander children in OOHC who are placed in accordance with the Aboriginal Child Placement Principle (with relatives/kin or with indigenous carer/residential care), varied across LGAs within the Murray PHN region. The LGA of Wangaratta had the highest rate (84.6%), while Greater Bendigo had the lowest rate (53%) (VCAMS, 2019)
- Aboriginal and Torres Strait Islander children are over-represented in OOHC and through child protection data, with increasing concern about levels of risk. The 2016 Overcoming Indigenous Disadvantage Report, highlights that from 30 June 2005 to 2015, the number of Aboriginal and Torres Strait Islander children aged 0-17 years in OOHC in Victoria almost tripled from 526 to 1,511.
- *Taskforce 1000*, a collaborative project between the Department of Health and Human Services (Victoria) and the Commission for Children and Young People, found that the majority of Aboriginal and Torres Strait Islander children in OOHC experienced family violence, substance abuse and mental health problems within their family.
- Across Australia, 69% of Aboriginal and Torres Strait Islander people aged 15 years or over (2014-15) reported awareness of problems in their neighbourhood or community, with 25% reporting awareness of family violence and 21% reporting awareness of assault (NATSISS, 2015).

Basic needs

- For the *Indigenous Relative Socioeconomic Outcomes Index* (2016), the Murray PHN region has an average index score of 44, which is less favourable compared to Victorian (25) and Australian (43) scores. Of the region, the IARE of Mildura (66), Albury (part b) (57) and Swan Hill (54) have higher index scores, indicating worse socioeconomic outcomes (PHIDU, 2020a).
- Differences in aged care use exist between Indigenous and non-Indigenous Australians aged 50 years and over. Apart from those aged 75 + years using residential care, rates of aged care use were higher for Indigenous Australians than for non-Indigenous Australians. Among people aged 65–74 years, compared with non-Indigenous Australians, Indigenous Australians were 3.1 times as likely to use home support (2017–18), 7.1 times as likely to use home care (June 2018) and 2.1 times as likely to use residential aged care (June 2018) (AIHW, 2019a).
- In 2017–18, nearly 16,000 Indigenous Australians received disability support services under the National Disability Agreement (NDA) (constituting 6.1% of NDA disability support service users whose Indigenous status was recorded). The most common primary disability groups were psychiatric disability (25% of service users), intellectual disability (25%) and physical disability (21%) (AIHW, 2019d).
- National Disability Insurance Agency data as at 30 June 2018:
    - 9,255 Indigenous Australians were active NDIS participants, an increase from 4,515 participants at 30 June 2017
    - 5.4% of all NDIS participants were Indigenous (excluding those for whom Indigenous status was not stated)
    - in the Northern Territory, about three-quarters (77%) of NDIS participants were Indigenous
    - across the other states and territories, the proportion of Indigenous NDIS participants ranged between 2.3% and 9.6%

Work, roles and responsibilities

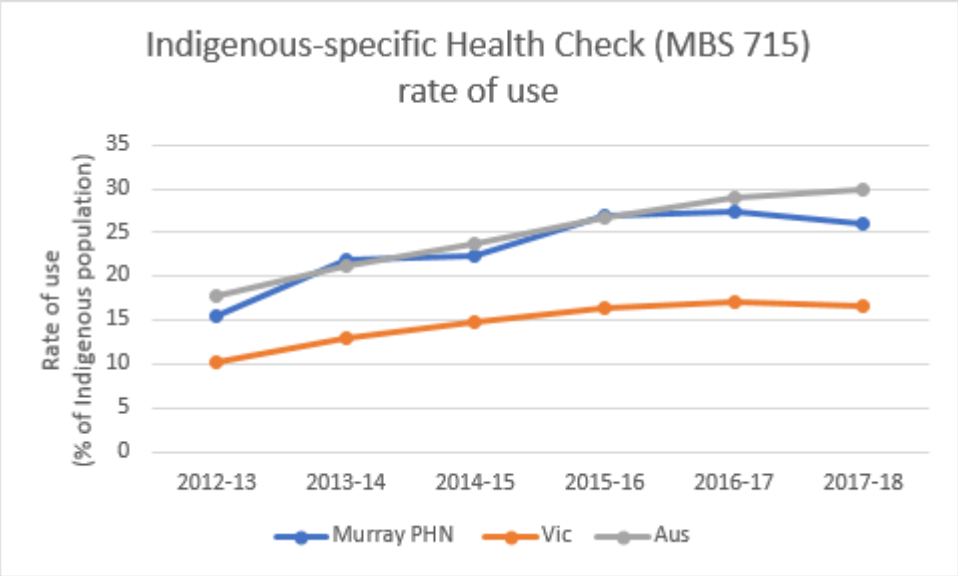
- For 2016, of the total Aboriginal and Torres Strait Islander labour force for the Murray PHN region,17.7% were unemployed, which is higher than the Victorian rate of 14%. The IARE areas of Albury (part b) and Mildura have particularly high rates of 23.6% and 23.2% respectively (PHIDU, 2020a).
- In 2016, the Murray PHN region had 14% of its workforce employed in the health care and social assistance industries (ABS, 2016c). For the Aboriginal and Torres Strait Islander population, the percentage was higher at almost 19% (ABS, 2016a).

Education

- Two thirds (66.8%) of Aboriginal and Torres Strait Islander children aged 4 or 5 years were enrolled in a preschool program in the Murray PHN region in 2018, which is higher than Victorian (61.8%) and national (48.8%) rates. Swan Hill IARE had the lowest enrolment rate for the region with 56.9% (PHIDU, 2020a).
- The proportion of Victorian Aboriginal and Torres Strait Islander students who report feeling connected with their school (2015) in years 5 and 6 is 80.5%, for year 7 to 9 this reduces to 55.3%. Victorian non-Aboriginal students' school connectedness is higher- 85% for years 5 and 6 and 62.6% for year 7 to 9 students (VCAMS, 2019).
- Across the Murray PHN region, 27% of Aboriginal and Torres Strait Islander people have year 12 or equivalent qualifications, which is lower than the Murray PHN average (30.3%) (ABS, 2016a).
- In 2016, the percentage of Aboriginal and Torres Strait Islander persons Learning or Earning at ages 15 to 24 in the Murray PHN region is 70.5%, which is lower than the rate for Victoria (75.7%), but higher than the national rate (65.4%). The IAREs of Albury (part b) (62.5%) and Swan Hill (62%) have the lowest rates across the region (PHIDU, 2020a).

Physical health

- In 2018–19, among Aboriginal and Torres Strait Islander people aged 15 and over, it was estimated that:
    - 45% rated their health as "excellent" or "very good", another 32% rated their health as "good" and 24% rated their health as "fair" or "poor". This health rating has improved since 2014–15 when 40% of Aboriginal and Torres Strait Islander people rated their health as excellent or very good, 35% as good and 26% as fair or poor.
    - More males rated their health as "excellent" or "very good" than females (47% compared with 43%, respectively).
    - Based on age-standardised rates, the rate of non-Indigenous Australians reporting "excellent" or "very good" health was 1.4 times the rate for Indigenous Australians (AIHW, 2020d).
- In 2018-19, among Aboriginal and Torres Strait Islander people aged 15 years and over, 19.7% of those living in Victoria reported excellent health, 26.3% reported very good health and 30.2% reported good health, being on par with national rates (AIHW, 2020d).
- During 2017-18, there were 4,139 patients who received Aboriginal Health Assessments (MBS item 715) in the Murray PHN region, indicating a usage rate of 26.0% (AIHW, 2019e). A greater number of Aboriginal Health Assessments were performed throughout 2016-17, with 4,252 patients receiving an Assessment in the Murray PHN region, indicating a usage rate of 27.5% (AIHW, 2017b).



Source: AIHW, 2019e Indigenous Health Checks

- The percentage of Aboriginal and Torres Strait Islander children who were fully immunised in the Murray PHN region as of 30 June 2020:
    - fully immunised at 1 year: 94.1%
    - fully immunised at 2 years: 89.4%
    - fully immunised at 5 years: 96.6%

  The rate for all children in the Murray PHN region to be fully immunised at 5 years is 96% (DoH, 2020b).
- For Aboriginal and Torres Strait Islander people born 2015-2017, life expectancy is estimated to be 71.6 years for males and 75.6 years for females, around 8-9 years less than the estimates for non-Indigenous males and females. However, life expectancy has increased in comparison to Aboriginal and Torres Strait Islander people born in 2010-2012, with males expected to live to 69.1 years and females to live to 73.7 years (HealthInfoNet, 2020).
- The percentage of Aboriginal and Torres Strait Islander women in the Murray PHN region who gave birth and had at least one antenatal visit in the first trimester (2014-2016) is 44%. This is considerably lower than the national average for all Aboriginal and Torres Strait Islander women (57.6%), and slightly lower than the Murray PHN rate (47.3%) for all women (AIHW, 2018b).
- In 2017, the average birthweight of babies born to Aboriginal and Torres Strait Islander mothers was 3,202 grams. The proportion of low birthweight babies born to Aboriginal and Torres Strait Islander mothers between 2007 and 2017 remained steady at around 13% (HealthInfoNet, 2020). For the Murray PHN region, the percentage of live births that were of low birthweight for Aboriginal and Torres Strait Islander women in 2014-16 was 10.3% (AIHW, 2018b).
- *Closing The Gap Report 2020* revealed the Aboriginal and Torres Strait Islander child mortality rate across Australia in 2018 to be 141 per 100,000; this is twice the rate of non-Indigenous children (67 per 100,000). Indigenous child mortality rates have improved (by 7 per cent) between 2008 and 2018. Non-Indigenous child mortality rates also improved between 2008 and 2018, and at a faster rate than for Indigenous children. Therefore, the gap between Indigenous and non-Indigenous child mortality rates has widened (Australian Government, 2020).
- Over the period 2014 to 2018, the main cause of Aboriginal and Torres Strait Islander child deaths was perinatal conditions (49 per cent), such as complications of pregnancy and birth.

Most Indigenous child deaths (85 per cent) occurred during the first year of life. This was similar for non-Indigenous children (Australian Government, 2020).

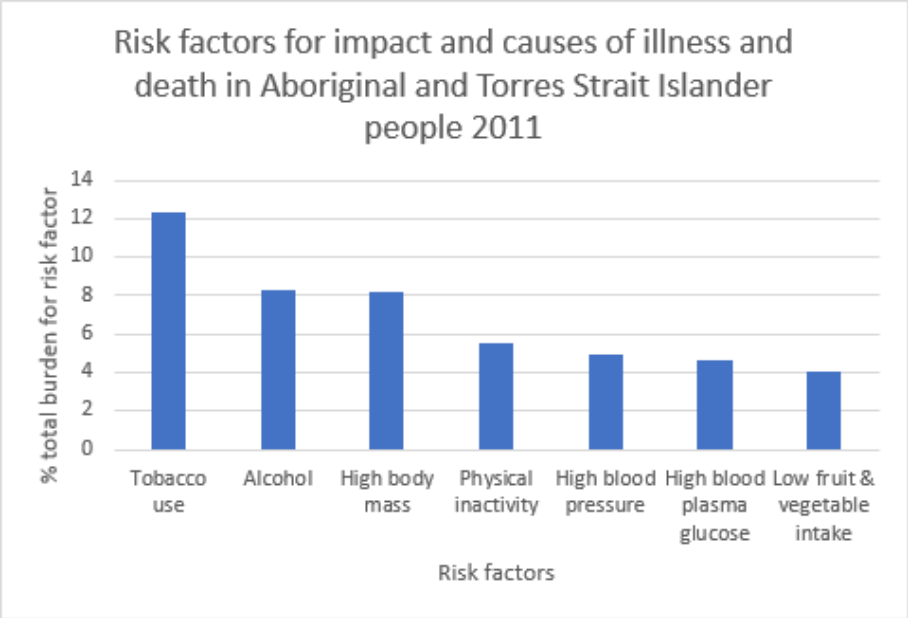
- In 2018-19, the percentage of Aboriginal and Torres Strait Islander children enrolled who participate in the Maternal Child Health service on average for the Murray PHN region is 76.2%. Rates of participation have been consistently over 75% since 2016-17 (Know Your Council, 2020).
- In 2018-19, 37% of Aboriginal and Torres Strait Islander people aged 15 years and over reported they were current daily smokers, a reduction from levels reported in 2012-13 (41%). Between 2004-05 and 2018-19, the highest reductions in daily smoking have been found in the younger age-groups (18-34 years) (HealthInfoNet, 2020).
- The smoking rate for Aboriginal and Torres Strait Islander people living in the Murray PHN region is 45.4% (2014-15), which is higher than the Victorian Indigenous rate 40.6% (2012-13), and the non-Indigenous Murray PHN region rate 20.6% (AIHW, 2016).
- Indigenous Australians participate in BreastScreen Australia and the National Bowel Cancer Screening Program (NBCSP) at a lower rate than non-Indigenous Australians. Information is not available on Aboriginal and Torres Strait Islander women participation in the National Cervical Screening Program, although there is evidence that Indigenous Australians also participate in cervical screening at a lower rate (AIHW, 2018a).
- The participation rate for Indigenous and non-Indigenous Australians for BreastScreen is 37.3% and 53.2% respectively. For the NBCSP, Indigenous Australians (23.5%) again have a lower rate compared to non-Indigenous Australians (40%) (AIHW, 2018a).

Health services utilisation

- The average annual age-standardised rate per 100,000 Aboriginal and Torres Strait Islander persons for hospital admissions for preventable conditions (2015-16 to 2017-18), is 4,871.6 for the Murray PHN region. Murray PHN's rate is higher than the Victorian rate (3914.3), but lower than the national rate (5395.2) (PHIDU, 2020a).
- The average annual age-standardised rate per 100,000 Aboriginal and Torres Strait Islander persons for hospital admissions for total chronic conditions (2015-16 to 2017-18), is 2,343.8 for the Murray PHN region. Murray PHN's rate is higher than both Victorian and Australian rates of 1,781.4 and 2,061.6 respectively. (PHIDU, 2020a).
- The average annual age-standardised rate per 100,000 Aboriginal and Torres Strait Islander persons for hospital admissions for total acute conditions (2015-16 to 2017-18), is 2,254.9 for the Murray PHN region. Murray PHN's rate is higher than the Victorian rate (1,791.0), but lower than the national rate (2,632.3) (PHIDU, 2020a).
- The average annual age-standardised rate per 100,000 Aboriginal and Torres Strait Islander persons for hospital admissions for total vaccine-preventable conditions (2015-16 to 2017-18), is 267.2 for the Murray PHN region. Murray PHN's rate is lower than both the Victorian rate (339.1) and national rate (701.2) (PHIDU, 2020a).
- The average annual age-standardised rate per 100,000 Aboriginal and Torres Strait Islander persons for hospital admissions for all cancers (2015-16 to 2017-18) for the Murray PHN region is 1,313.9, which is higher than state and national rates of 1,215.4 and 983.8 respectively (PHIDU, 2020a).
- For 2013-2017, the age-standardised mortality rate due to cancer of any type was 238 per 100,000, an increase of 5% when compared with a rate of 227 per 100,000 in 2010-2014. Lung cancer was the most commonly diagnosed cancer in Aboriginal and Torres Strait Islander people, followed by breast cancer (in females), colorectal cancer and prostate cancer. (HealthInfoNet, 2020).

Alcohol and other drugs

- The 2019 NDSHS found that alcohol abstinence among Aboriginal and Torres Strait Islander people has increased from 25% in 2010 to 29% in 2019. After adjusting for differences in age, Indigenous Australians aged 14 and over were more likely to abstain from drinking alcohol than non-Indigenous Australians (AIHW, 2020a).
- The rate of Aboriginal and Torres Strait Islander persons who exceeded single occasion alcohol risk guidelines in Victoria in 2014-15 was 27%, which decreased from 40% in 2008 (AIHW, 2019b).
- Also, for Victoria in 2014-15, the proportion of Aboriginal and Torres Strait Islander persons aged 15 years and over who exceeded alcohol consumption guidelines for lifetime risk was 10.8%, down from 18.4% in 2008 (AIHW, 2019b).
- Aboriginal and Torres Strait Islander people recorded rates of mortality directly attributable to alcohol five times higher than that of the non-Indigenous population over the 2013 to 2017 period. The annual average per 100,000 capita for this time frame was 23.8. Non-Indigenous Australians recorded a rate of 4.7 alcohol-induced deaths per 100,000 persons over the same period (ABS, 2018b).
- In 2019, 23% of Aboriginal and Torres Strait Islander people had used an illicit drug in the last 12 months. This was 1.4 times higher than for non-Indigenous Australians (16.6%). Indigenous Australians aged 15 and over residing in the Northern Territory (22%) were the least likely to report substance use, while those from the Australian Capital Territory (41%) and Victoria (40%) were the most likely to report using substances (AIHW, 2020a).
- In 2018–19, the Alcohol and Other Drug Treatment Services National Minimum Dataset showed that Indigenous Australians (3,580 per 100,000 population) were seven times as likely to receive AOD treatment services than non-Indigenous Australians (515 per 100,000 population). Specifically, where the principal drug of concern was:
    - amphetamines—1,014 per 100,000 population for Indigenous Australians compared with 141 per 100,000 population for non-Indigenous Australians.
    - heroin—172 per 100,000 population for Indigenous Australians compared with 26 per 100,000 population for non-Indigenous Australians.
    - cannabis—927 per 100,000 population for Indigenous Australians compared with 116 per 100,000 population for non-Indigenous Australians.
    - alcohol—1,249 per 100,000 population for Indigenous Australians compared with 173 per 100,000 population for non-Indigenous Australians (AIHW, 2020a).



Source: AIHW, 2016

Chronic disease

- In 2018-19, around 15% of Aboriginal and Torres Strait Islander people reported having CVD and nearly one quarter (23%) were found to have high blood pressure (HealthInfoNet, 2020).
- In 2018-19, 7.8% of Aboriginal and Torres Strait Islander people and 7.9% reported having diabetes. While in 2018, diabetes was the second leading cause of death for Aboriginal and Torres Strait Islander people, the death rate for diabetes decreased by 7.0% between 2009-13 and 2014-18 (HealthInfoNet, 2020).
- In 2018-19, 29% of Aboriginal and Torres Strait Islander people reported having a long-term respiratory condition, with 16% reporting having asthma (HealthInfoNet, 2020).
- In 2014-15, crude hospitalisation rates were highest for Aboriginal and Torres Strait Islander people presenting with influenza and pneumonia (7.4 per 1,000), followed by COPD (5.3 per 1,000), acute upper respiratory infections (3.8 per 1,000) and asthma (2.9 per 1,000). For the same period, age-adjusted hospitalisation rates for Aboriginal and Torres Strait Islander people were 5.0 times higher for COPD, 3.1 times higher for influenza and pneumonia, 2.1 times higher for whooping cough and 1.8 times higher for asthma and acute upper respiratory infections, than for non-Indigenous people (HealthInfoNet, 2019).
- For 2014-18, after age-adjustment, the notification rate of end-stage renal disease was 6.3 times higher for Aboriginal and Torres Strait Islander people than for non-Indigenous people (HealthInfoNet, 2020).

Mental health

- In 2014-15, more than half of Aboriginal and Torres Strait Islander people aged 15 years and over reported an overall life satisfaction rating of at least 8 out of 10 (HealthInfoNet, 2020).
- In 2012-2013, 91% of Aboriginal and Torres Strait Islander people reported *feelings of calmness and peacefulness, happiness, fullness of life and energy* either some, most, or all of the time (HealthInfoNet, 2020).
- In 2018-19, 31% of Aboriginal and 23% of Torres Strait Islander respondents aged 18 years and over reported high or very high levels of psychological distress. 25% of Aboriginal and 17% of Torres Strait Islander people, aged two years and over, reported having a mental and/or

behavioural condition. Anxiety was the most common mental or behavioural condition reported (17%), followed by depression (13%) (HealthInfonet, 2020).

- In 2018–19, the rate of intentional self-harm hospitalisations for Indigenous Australians (341 hospitalisations per 100,000 population) was about three times that of non-Indigenous Australians (109). The highest rate of hospitalised intentional self-harm for Indigenous Australians was in the 15–19 age group (668 hospitalisations per 100,000 population). The highest rate for non-Indigenous Australians was also recorded in the 15–19 age group but was less than half that of Indigenous Australians aged 15–19 (332) (AIHW, 2020l).
- Indigenous females aged 15–19 years recorded the highest rate of intentional self-harm hospitalisations (1,045 hospitalisations per 100,000 population), followed by those aged 20–24 (743). The highest rate of hospitalised intentional self-harm for Indigenous Australian males was in the 40–44 age-group (500 hospitalisations per 100,000 population), followed by those aged 30–34 (495) and 35–39 years (494) (AIHW, 2020l).
- From 2008–09 to 2018–19, the overall rate of hospitalised intentional self-harm for Indigenous Australians rose steadily (from 219 hospitalisations per 100,000 population to 341). The rate of intentional self-harm hospitalisations for non-Indigenous Australians remained relatively steady over this period (115 in 2008–09 to 109 in 2018–19). Over this same period, the Indigenous suicide rate ranged from 1.4 to 2.3 times that of non-Indigenous Australians (AIHW, 2020l).
- There were 10,505 overnight mental health separations with specialised psychiatric care for Aboriginal and Torres Strait Islander people in 2017–18, which is 138.0 per 10,000 population, which compares to 63.2 per 10,000 population for other patients. Rates standardised on the 2001 age profile were 150.6 and 63.7 per 10,000 population respectively, so the standardised rate for Indigenous people was 2.4 times that of other patients (AIHW, 2020g).
- In 2017-18, Aboriginal and Torres Strait Islander people, who represent about 3.3% of the Australian population accounted for 10.9% of mental health-related ED presentations, compared with 6.7% of all ED presentations. The rate of mental health-related ED presentations for Indigenous Australians was more than four times that for other Australians (455.9 and 106.8 per 10,000 population respectively) (AIHW, 2020g).
- In 2018, 169 Indigenous Australians died by suicide. Age-standardised rates of Aboriginal and Torres Strait Islander peoples' *deaths by suicide* have increased over time from 20.2 per 100,000 persons in 2009–2013 to 23.7 per 100,000 persons in 2014–2018, which is almost double that of non-Indigenous Australians in 2014–18 (12.3 per 100,000 persons). From 2014 to 2018, suicide rates were highest for those aged 25–34 years (47.1 per 100,000) and 15–24 (40.5 per 100,000) but then declined with age to less than 10 per 100,000 for those aged 65 and over (AIHW, 2020e).

Service needs

There are seven services in the Murray PHN region that specifically support our Aboriginal and Torres Strait Islander communities manage their health and wellbeing.

- Central Victoria:
  - Bendigo and District Aboriginal Co-operative (Bendigo)
  - Njernda Aboriginal Corporation (Echuca).
- Goulburn Valley:
  - Rumbalara Aboriginal Co-operative (Shepparton)
- North East:
  - Albury Wodonga Aboriginal Health Service (Albury, outreach to Wangaratta)

    - Mungabareena Aboriginal Corporation (Wodonga).
- North West:
    - Mallee District Aboriginal Services (Mildura, Swan Hill, Kerang)
    - Murray Valley Aboriginal Co-operative (Robinvale).

Aboriginal and Torres Strait Islander mental health services

- Intensive work is required to engage and maintain contact with Aboriginal and Torres Strait Islander people for follow up of primary mental health conditions.
- Ignoring culturally safe practices results in poorer health outcomes and higher demand on the emergency and primary health care systems.
- There is a shortage of Aboriginal and Torres Strait Islander health workers.
- ACCOs report that people often present to them in crisis and have high needs for service coordination across sectors.
- There is a lack of targeted services for young people.
- Limited access to dual diagnosis services for Aboriginal and Torres Strait Islander clients in mainstream and ACCOs.
- Community dynamics can challenge service access and complicate treatment and support.

Aboriginal and Torres Strait Islander AOD services

- Families lack support.
- Lack of wrap-around service provision.
- Lack of culturally safe service provision outside of Aboriginal and Torres Strait Islander services.
- Poor understanding of mental health, AOD and dual diagnosis within the community.
- Lack of accessible and appropriate rehabilitation and detoxification services for ice and poly-drug use.
- Psychiatric services lack the capacity to respond to drug-related mental health problems.
- Lack of systematic alcohol and drug awareness education in schools.
- AOD sector workforce and organisational capacity constraints.

Data and consultation sources

Community consultation has been undertaken through the following:

- Murray PHN regional team (Nov 2016 - July 2017).
- Murray PHN Advisory Councils (Nov 2016 - July 2017).
- Murray PHN Indigenous Health Advisory Council (April 2018).

AGED CARE

The *aged population* or *older population* refers to people aged 65 years and over, unless otherwise specified. For Indigenous people, a different age group of 50 years and over is used as 'aged'. This reflects the life expectancy gap between Aboriginal and Torres Strait Islander people and non-Indigenous Australians (AIHW 2017).

The age distribution in the Murray PHN region reflects an older population than both Victorian and Australian averages. The intersection of an ageing population and the complexities of service access in rural communities is a current and future challenge for the Murray PHN region. To support older Australians to lead healthy, productive and connected lives, ensuring they enjoy greater social and economic participation in society, this section identifies needs, and current services, in order to develop solutions to fill priority gaps in primary care services for our older community members.

Key issues

- Ageing rural populations exist across the Murray PHN region, placing increasing pressure on access to health resources.
- In the Murray PHN region, there are 148,240 persons aged over 65 years. This represents 22.1% of the region's population compared to the Victorian average of 15.3% (ABS, 2018f).
- The proportion of 65+ year old people in the Murray PHN region who live alone is 26.1%, which is higher than the state and national rate, both 24.3% (Gen Aged Care Data, 2018).
- There is a need for a broader primary health focus to support community and aged care resident needs (including social and lifestyle measures/interventions).
- There is a need to support general practice to accommodate types of patient care required by older persons such as simple structured assessment and attention to underlying frailties i.e., mobility, undernutrition, pain, incontinence, and cognitive and sensory impairments that limit ability and independence.
- Transport limitation presents barriers to access and leads to inappropriate ED presentations, and barriers in accessing other health care services such as allied health and pharmacy.
- Limited access to geriatricians and GPs in aged care, especially areas where general practices do not manage patients in an RACF or provide home visits.
- Aged care sector is associated with poorer working conditions than other areas of health due to high resident to staff ratios, low registered nurse to personal care attendant ratios, staff shortages and long shifts, and complex care needs of RACF residents (Parliament of Australia, 2017).

Community voice

The following themes emerged through consultation with the community:

- advocacy services are required to support client access and navigation of My Aged Care, NDIS, and Continuity of Supports, particularly in small rural communities
- there are emerging issues about how people are transitioned from the NDIS to My Aged Care as the NDIS continues to roll out across our region
- advance care plan (ACP) completion rates are low and there is currently no reliable system of communicating ACP between services in a timely manner to ensure the ACP can be acted upon if or when required
- accessibility, medication review and advocacy issues - an emerging issue is the commencement of new Advance Care Directive legislation, the Medical Treatment Planning and Decisions Act (2016) in March 2018 in Victoria

- Murray PHN PIR programs have developed strong relationships with carer networks recognising social isolation is a key issue for ageing carers
- lack of communication between patients, staff and relatives in aged care regarding health and care needs.

Health needs

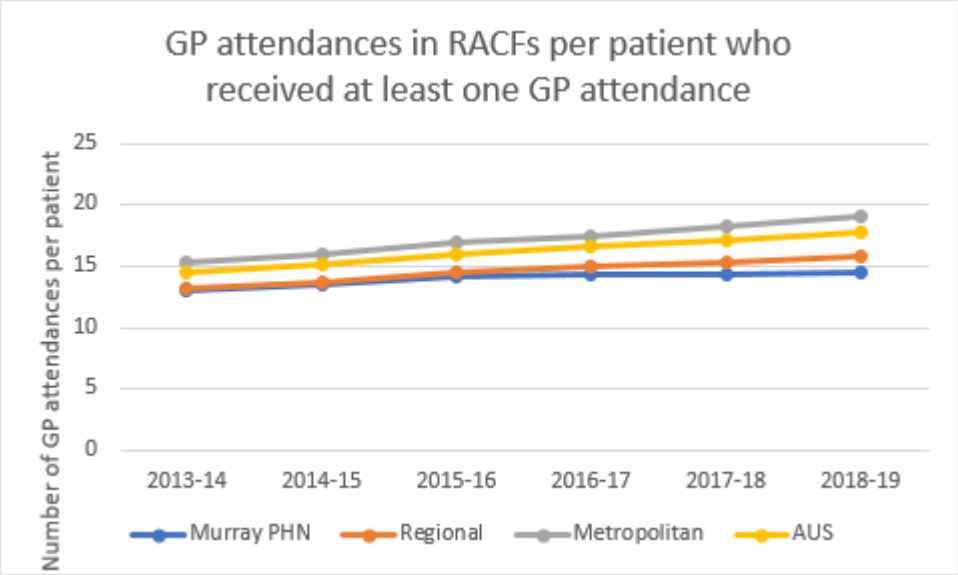
Description of evidence

ABS 2018 population estimates indicate there are now six LGAs in the Murray PHN region with more than 25% of the population aged over 65 years. They are Gannawarra (28.0%), Strathbogie (28.0%), Loddon (27.8%), Buloke (27.7%), Towong (26.1%) and Benalla (25.9%). The Victorian average is 15.3% (ABS, 2018f).

Health assessments

In 2018-19, 41.5% of people aged 65 or over had a GP health assessment in the Murray PHN region, which is lower than the regional rate of 49.7% and the national rate of 45.8% (AIHW, 2020f).

Residential aged care



Source: AIHW, 2020

- As of June 2018, there are 7,402 aged care places in the Murray PHN region: 6,886 residential care, 287 multipurpose service, 199 transitional care and 30 National Aboriginal and Torres Strait Islander Aged Care Program. The occupancy rate for residential aged care for the region is 93.8% (Gen Aged Care Data, 2018).
- There were 123,655 MBS services provided by GPs to over 8500 people in residential aged care facilities in the Murray PHN region during 2018-19 (AIHW, 2020f).

Falls

- Unintentional injury hospitalisation rate for falls per 100,000 people 65+ years (2017), is 2345 per 100,000 people in the Murray PHN region, which is lower than the Victorian rate of 3199. The LGAs of Greater Shepparton and Buloke have the highest rates for the region at 3167 and 3160 per 100,000 people respectively (VISU, 2018).

Service needs

Description of evidence

- Mitchell LGA is projected to have the highest percent growth rate (1303.3%) for the prevalence of dementia in Victoria from 2017-50. Other LGAs within the Murray PHN region ranked within the top 20 LGAs in Victoria for projected high percent growth rates for dementia are Macedon Ranges (662.4), Indigo (458.3) and Mansfield (433.9) (NATSEM, 2016).
- ED presentations attributed to dementia increased by 24% in 2019-20 from 2018-19 in the Murray PHN region, higher than the state average of 15.3% (VEMD, 2020).
- As of June 2018, 46.1% of people using permanent residential aged care in the Murray PHN region had a diagnosis of dementia (Gen Aged Care Data, 2018).
- From the BEACH Survey (2015/16): those aged 65+ years accounted for an increasing proportion of GPs' workloads (from 27% to 31% of encounters). This change affected all aspects of general practice as older patients are more likely to have multiple issues, particularly chronic conditions and are more likely to have co-morbidities (Britt et al. 2016).
- Hospitalisations for injuries that occurred in a RACF increased by a higher rate across the Murray PHN region from 2016-17 to 2017-18, compared to the increase for the state. The North East region experienced a decrease for the same period, while the Goulburn Valleyregion had a significant increase (VEMD, 2019).
- In 2018-19, the number of GP attendances in RACF per patient, who received at least one GP attendance in a facility, was 14.5 for the Murray PHN region, which is lower than the national average (17.8) (AIHW, 2020f).
- The rate of residential aged care places per 1,000 population aged 70 years and over in 2016 was higher in nine LGAs in the Murray PHN region compared to the Victorian rate (85.1 per 1,000 population). LGAs with the lowest rates are Mansfield (64.1), Murrindindi (66.5), Mitchell (69.2) and Strathbogie (71.3) (PHIDU, 2020b).
- There is a need to understand the implications of an increasing incidence of age-associated disability and disease (e.g., dementia, stroke, COPD, diabetes), along with complex morbidities.
- Access to home-based palliative care requires further investigation and support (incorporating palliative care for chronic diseases other than cancer).
- Need for improved home based/or RACF palliative care support, to reduce unnecessary "end of life" hospital transfers/admissions.
- Need to reduce avoidable ED presentations through improving and promoting access to primary health care (including palliative care and in-home services).
- An ageing population, rural location and implementation of NDIS is having on impact on the availability of carer support respite places (DHHS, 2018).

Data and consultation sources

Community consultation has been undertaken through the following:

- Murray PHN regional team (Nov 2016 - July 2017).
- Murray PHN Advisory Councils (Nov 2016 - July 2017).

CHRONIC DISEASE

Murray PHN's approach to chronic disease focuses on the priority areas of diabetes, CVD and COPD and the impact these conditions have on the acute sector. Murray PHN works closely with state-funded health provider organisations and local government authorities. Generally, these bodies work to address chronic disease prevention and reduction of community risk factors, for example: obesity, and smoking rates, which are described in the general population health section.

CVD, diabetes and COPD are significant contributors to hospital admissions. The risk factors for these conditions are described in the general population health section, and issues related to achieving optimal management of these conditions are related to coordination of care, health system improvements and early intervention.

General data quality issues related to CDM exist for many general practices across the region. There is opportunity for Murray PHN, through its established relationship with general practice, to work toward holistic, multi-disciplinary, team-based management of chronic diseases in the primary care setting.

Internationally, evidence is building for integrated models of care to improve health outcomes for people with chronic disease. In Australia, people who have chronic conditions also have multi-morbidities including mental health. For this reason, integrated models of care that provide targeted patient-centred primary health services are preferred, rather than services that are targeted towards a particular disease or condition.

Our Chronic Disease Management (CDM) and Potentially Avoidable Hospitalisations (PAH) projects have seen interventions at the patient, general practice and system levels and this has informed two key insights:

1. Integrated, patient-centred services are required that incorporate the co-morbidities of chronic disease, including mental health, to support the transition to self-management.
2. Care coordination is required to support the patient transition from the acute care setting to general practice. It is important to note that we are focusing our efforts in the post-acute end of the care continuum, so care coordination should be understood as a clinical role.

Key issues

- The rate of PAH admissions for chronic conditions is significantly higher in the Murray PHN region compared to Victorian averages in 2018-19, particularly in the LGAs of Campaspe, Gannawarra, Greater Shepparton and Swan Hill (VHISS, 2020).
- Diabetes and related complications are listed in the top 10 presentations for ambulatory care sensitive conditions, therefore improvements to the integration between discharge planning services from hospital services into primary care settings in a way that connects patients to general practice, allied health and community support structures will be important to mitigate readmission.
- Opportunity to enhance practice capacity to better identify patients at risk of, or with, chronic disease and to strengthen the multidisciplinary coordination of care of patients in a way that fits with patient needs and contexts.
- Cardiac-related admissions (including hypertension, congestive heart failure and angina) account for approximately15% of all Ambulatory Care Sensitive Conditions (ASCS) admissions for Victorian hospital services 2018-19 (VHISS, 2020).

Community voice

The Murray PHN clinical and community councils had input into the design and development of appropriate models of care for COPD and CVD throughout 2017. Feedback included:

- Stronger health partnerships and transparency of information for groups involved in patient care.
- Greater support with health coaching and improved psychological support is needed for those with chronic conditions.
- There are gaps in services to transition from paediatric to adult.
- More patient health information sharing would improve care.
- More support for professional development and the use of video conferencing should be promoted.
- More support to improve practitioner understanding of patient health literacy.
- After Hours access to services to suit families would improve service usage.

Through *Health Voices* our community has told us, that in relation to chronic disease, the top five services people would like to access in their community but cannot are: mental health counsellor (16%), exercise physiologist (12%), dentist (9%), dietitian (9%) and podiatrist (5%).

Health professionals via *Health Voices* have identified the following service needs/gaps in their area for people with diabetes as well as bulk-billed and low fee services:

Central Victoria

- endocrinologists
- consistent access to exercise physiologists, podiatrists and diabetes educators
- health psychology support.

Goulburn Valley

- more endocrinology services
- a standardised level of care.

North East Victoria

- more exercise physiologists, dietitians, mental health support
- endocrinologists
- extended hours of access for diabetes educators.

North West Victoria

- exercise physiologists
- health promotion services.

Health issues

Description of evidence

- The rate of PAH for chronic conditions in 2017-18 is significantly higher than national comparisons, particularly in the SA3 areas of Campaspe, Shepparton, Moira, Loddon- Elmore and Murray River-Swan Hill, and a lesser extent in Bendigo, Upper Goulburn Valley and Wangaratta- Benalla areas (AIHW, 2019j).
- The overall rate of PAH for all categories per 100,000 people (age-standardised) in 2017-18 for the Murray PHN region (3,034) is higher than the national rate (2,793) (AIHW, 2019j).

Diabetes

- The proportion of adult population ever diagnosed with type 2 diabetes (2017) is 5.5% for the state of Victoria. Nine of 21 LGAs in the Murray PHN region are above the state average, with the highest rates occurring in Wodonga (7.8%), Gannawarra (7.2%), Mitchell (7%) and Swan Hill (7.2%) (VPHS, 2017).

- The rate of PAH for chronic diabetes complications (age-standardised rate) in 2017-18 is higher overall for the Murray PHN region compared to the Victorian rate (276.9 compared with 222.6 per 100,000) (PHIDU, 2020b).
- Complications arising from diabetes is the largest ACSC presenting within hospital services across the Murray PHN region, demonstrating an increase each year for the previous three years, but a decrease for 2019-20 (possibly due to Covid-19 implications) (VAED, 2020).
- Rates of PAH for diabetes complications have consistently increased over the past 4 years in the Goulburn Valley region, particularly in the LGAs of Mitchell and Moira, but have consistently decreased in the North East region. The LGAs with the highest rates of diabetes complications in 2018-19 are Mitchell (4.73 per 1,000 persons), Swan Hill (4.3 per 1,000 persons) and Murrindindi (3.28 per 1,000 persons), which are all higher than Victorian rate (2.29 per 1,000 persons) (VHISS, 2020).
- Postcodes have come into focus through the *Perils of Place report* (Grattan Institute 2016) which identifies Robinvale, Annuello and surrounds (postcode 3549) and Murrindindi and surrounds (postcode 3717) as persistent “hotspots” for diabetes complications hospital admissions.
- Compared to the Victorian average annual age standardised rate (4.8 per 100,000), avoidable deaths from diabetes in persons aged 0 to 74 years (2013-17) was considerably higher, over double the Victorian rate, in Benalla and Campaspe (both 9.8 per 100,000) (PHIDU, 2020b).

Chronic Obstructive Pulmonary Disease (COPD)

- The age-standardised rate of potentially avoidable hospitalisations for COPD in 2017-2018 is significantly higher in the Murray PHN region compared to the Victorian rate (382.2 compared to 273.8 per 100,000) (PHIDU, 2020b).
- Overall, rates of potentially avoidable hospitalisations for COPD have dropped significantly in the North East region in the past four years, aside from Mansfield and Benalla.
- For 2018-19, the rate of hospital admissions (per 1,000 people) for COPD in the Murray PHN region is above the state average (2.42 per 1,000 people) in 17 out of 21 LGAs. Gannawarra and Buloke have the highest rates (5.0 and 4.83) respectively, which are double the state rate (VHISS, 2020).
- In 2018-19, based on self-reported data, COPD affects an estimated 10% of Indigenous Australians aged 45 and over—approximately 17,800 people, although this is likely to be an underestimate. The prevalence of COPD is higher for Indigenous females (13%), compared to Indigenous males (6.7%). For Indigenous Australians the age-standardised death rate for COPD was almost 3 times as high for non-Indigenous Australians (70 compared with 24 deaths per 100,000 population) (AIHW, 2020c).

Cardiac-related conditions

- Congestive cardiac failure PAH age-standardised rates in 2018-19, are highest for the Murray PHN region in Swan Hill (4.92 per 1,000 persons), Mitchell (3.86 per 1,000 persons) and Loddon (3.77 per 1,000 persons), with eight LGAs being higher than the Victorian rate (2.63 per 1,000 persons) (VHISS, 2020).
- PAH age-standardised rates for angina in 2018-19, are highest for the Murray PHN region in Swan Hill (3.5 per 1,000 persons), Greater Shepparton (2.82) and Gannawarra (2.55). Eight LGAs have higher rates compared to the Victorian rate (1.31 per 1,000 persons) (VHISS, 2020).

Cancer

- The age-standardised rate per 100,000 people for incidence of all cancers in 2010-2014 for Victorian is 524. The Murray PHN region has 18 local government areas with rates higher than state rate (PHIDU, 2020b).

- The average annual age-standardised rate for Victoria for avoidable deaths from cancer aged 0 to 74 years (2013 to 2017) is 27.8 per 100,00 persons. In the Murray PHN region,12 LGAs had higher rates than the Victorian rate, with Buloke (37.6) and Wangaratta (35.3) having the highest rates (PHIDU, 2020b).

Service needs

Chronic disease service coordination

- There is a need for systematic approaches to the diagnosis, care planning and service coordination of chronic diseases across each region of Murray PHN.
- Discharge planning from acute stay periods needs better alignment and coordination with primary care (general practice).
- Poor sector engagement in service coordination for vulnerable populations.
- Transition to the Commonwealth Home Support Program and NDIS requires significant “navigation of the health system” by the patient/ individual (and the workforce) and this can create an access issue; which has the potential to further adversely impact isolated communities.
- Communications with GPs was less developed/ implemented, occurring in approximately half of these arrangements.
- Information conveyed was primarily patient/ consumer information.
- Link to electronic compatibility issues for information transfer/ communication between primary care and acute services.
- Use of telehealth tools to ensure full models of care are achievable for chronic disease, especially in rural areas.
- Limited capability of the service system and the health workforce to respond to the demand for chronic disease integrated care. Many small towns in our region are unable to recruit and sustain workforce to deliver the range of integrated services that are required. Health services require support to:
    - collaborate with other service providers to deliver integrated and coordinated models of care, that will address the needs now and into the future
    - look at scope of practice and alternate models of service provision, supported by enablers like HealthPathways, My Health Record, eHealth, and telehealth
    - focus on performance, quality and safety, and deliver evidence-based health outcomes (Integrated Care Report, MPHN, 2018c).

Challenges in provision and coordination of outreach and visiting services

- Services in rural and outlying communities are limited.
- Address the challenges of maintaining programs with limited resources, community interest, in smaller communities with less facilities.
- Address identified inefficiencies and duplication of services and the lack of coordination (e.g.,dietitians from three different services that visit community).
- Improvement in communication between service providers and the public regarding changes to a service.
- Address workforce capacity needs to maintain appropriate service levels.

Diabetes

- MBS services associated with Diabetes Mellitus Annual Cycle of Care PIP, declined in the Murray PHN region in 2018-19, with 8,428 patients receiving this assessment, compared to 8,727 in 2017-18 (AIHW, 2020f). Loddon Mallee Region Diabetes Pathways identifies 20 health disciplines, of which an average of nine of these professionals may be included in the cycle of care for a person with diabetes.
- Diabetes service system analysis across Buloke, Gannawarra and Swan Hill identifies where service provision is and is not available.
- The range of services identified in the Loddon Mallee Region Diabetes Pathways as being required in the diabetes cycle of care have limited availability in Buloke LGA.
- All services identified in the Loddon Mallee Region Diabetes Pathways are available in Swan Hill including public and private providers and with specialist services attending on a cyclic basis.
- All regions within Murray PHN's region report a lack of access to endocrinology services.
- Reduced access to endocrinology services is associated with hospital admissions for diabetes complications.
- Association between reduced access to high risk foot services and diabetes complications, cellulitis and gangrene admissions.
- Multidisciplinary clinics are required to support good patient care with coordinated care specialist, allied health, nursing, prosthetics, counselling.
- Local governments are exploring opportunities for foot care nurses/allied health assistants.
- Foot care teams including a podiatrist, foot care nurse, and allied health assistants and referral from GP for a podiatrist's assessment and for ongoing team care including patient education/ self-management (Kerang).
- Albury has a higher percentage of amputation - above the state average. This may, in part, be attributed to lack of diabetes care.
- Local health and community services use video conferencing for case management (Mallee Track Community and Health Service).
- Need to increase patient knowledge about physical activity and diabetes management in rural communities.
- Identification of barriers to physical activity in rural communities and the available options for older adults.
- Exploration of applicability of group-based sessions.

Chronic Obstructive Pulmonary Disease (COPD)

- Specific engagement with hospital emergency departments is required to identify COPD population sub-groups (at a diagnostic related group level), readmission rates and system gaps in terms of planning and care coordination.

Cancer

- Data obtained from peak bodies is often delayed. There is a need for more current data on a regular basis.
- There is a need to develop systems to record and support cancer survivorship.
- Although cancer is a chronic disease, many health services including secondary and primary health services do not use existing chronic disease systems to support this patient population. This results in poorer access to cancer services and community support structures.

- Data is currently lacking on cancer staging and treatments.

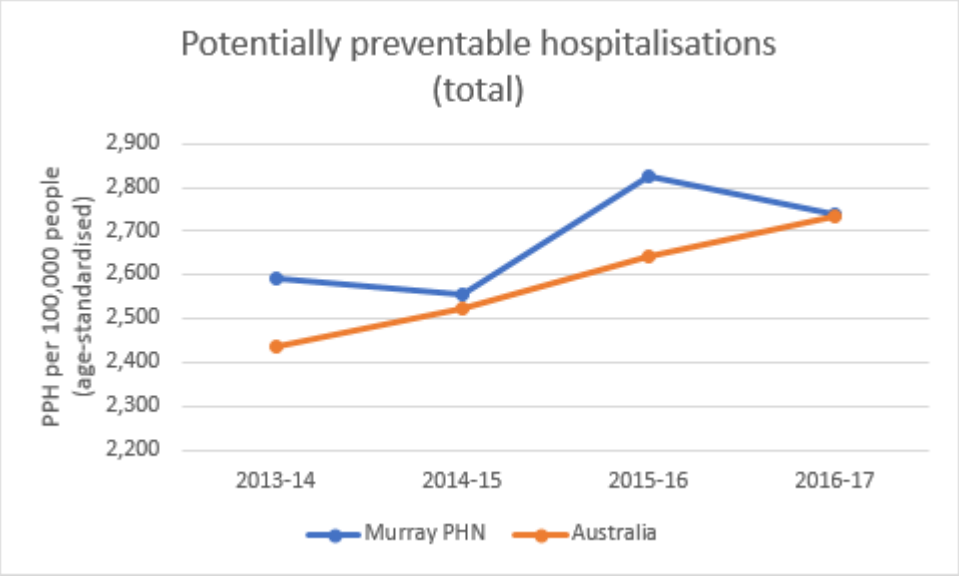
Heart related conditions

- Hospital admissions by principal diagnosis- ischaemic heart disease, age-standardised rate per 100,000 population in 2017-18, was a lot higher in the Murray PHN region (699.4), compared to the Victorian rate (586.8). The LGAs of Swan Hill (981.6), Albury (897.7) and Greater Shepparton (860.9) have the highest rates (PHIDU, 2020b).
- Bendigo Health report that 60% of patients who have been previously admitted for heart-related activity will be readmitted within a three-year period.
- Lifestyle risk factors, including smoking and obesity can be more systematically managed with primary care providers, using clinical audit tools and improvement to practice workflows and systems, recognising that:
    - proportion of adults who smoke daily is higher in 16 of our local government areas than the Victorian average
    - obesity is higher in 17 of our local government areas than the Victorian average (VPHS, 2017).
- Ambulatory Care Sensitive Conditions data shows very high admission rates for hypertension (2018-19) in the LGAs of Buloke (1.24 per 1,000 people), Campaspe (0.81 per 1,000 people) and Gannawarra (0.8 per 1,000 people), compared to the Victorian rate of 0.5 per 1,000 people (VHISS, 2020).
- Age-standardised rates of PAH for chronic angina in 2017-18 are significantly higher in many of Murray PHN's LGAs compared with the Victorian average (105.1 per 100,000 people), particularly in Greater Shepparton (189.9) and Greater Bendigo (182.6) (PHIDU, 2020b).
- Age-standardised rates of PAH for rheumatic heart disease in 2017-18 for Murray PHN region (14 per 100,000 people) is lower than the national rate (17 per 100,000 people) (AIHW, 2019j).
- Patients at risk of poor heart health can be better managed within primary and community health settings.

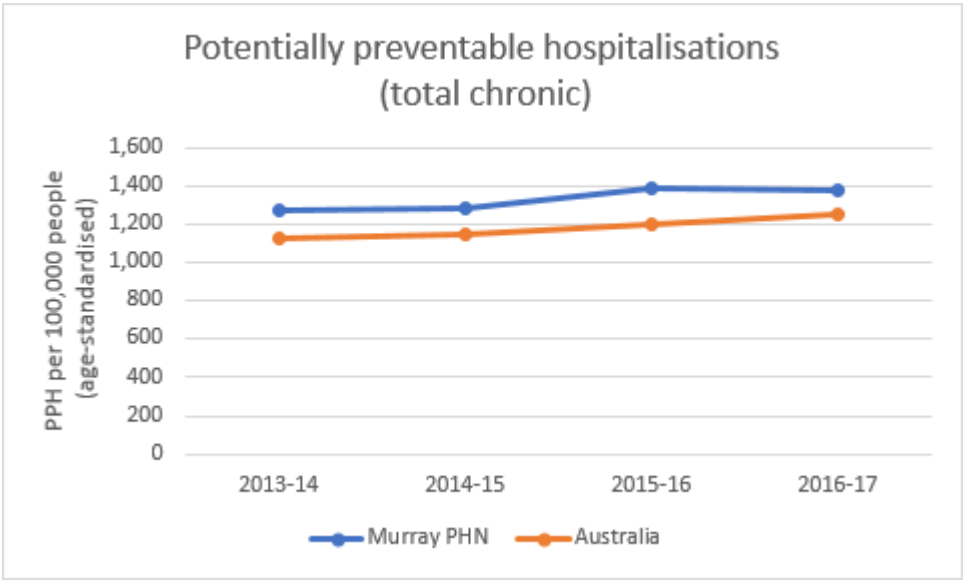
Other chronic conditions

- PAH for cellulitis are high across Murray PHN region in 2018-19, compared to the state average (3.08 per 1,000 persons), particularly in the LGAs of Loddon (5.37 per 1,000 persons) Campaspe (5.09 per 1,000 persons) and Mansfield (4.97 per 1,000 persons) (VHISS, 2020).
- In 2017-18, age-standardised rates of PAH for kidney and urinary tract infections are lower in the Murray PHN region (258 per 100,000 people) compared with the national average (282 per 100,000 people). The exception to this, by SA3 region within Murray PHN's region, is Loddon-Elmore (410 per 100,000 people), Shepparton (316 per 100,000) and Bendigo (295 per100,000) (AIHW, 2019j).

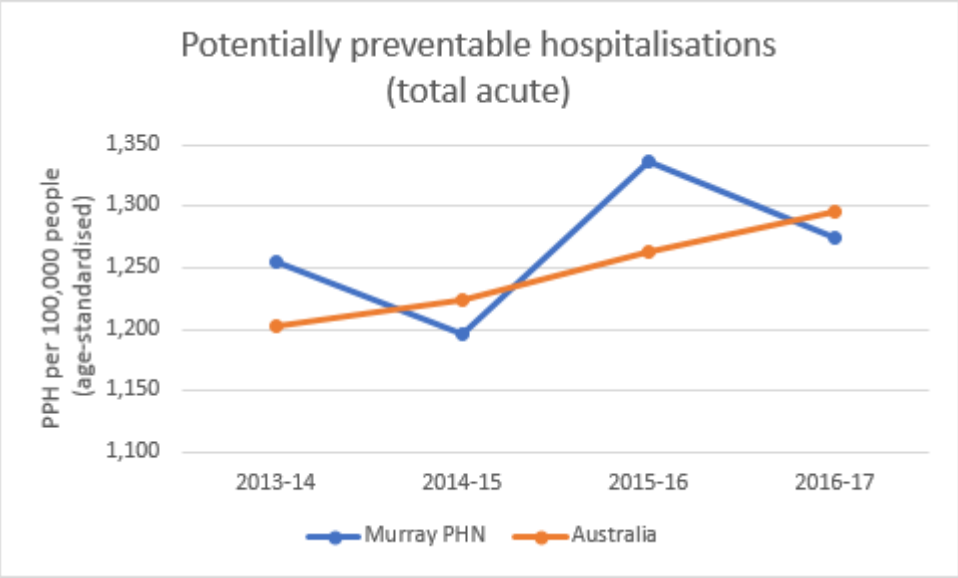
Potentially avoidable hospitalisations



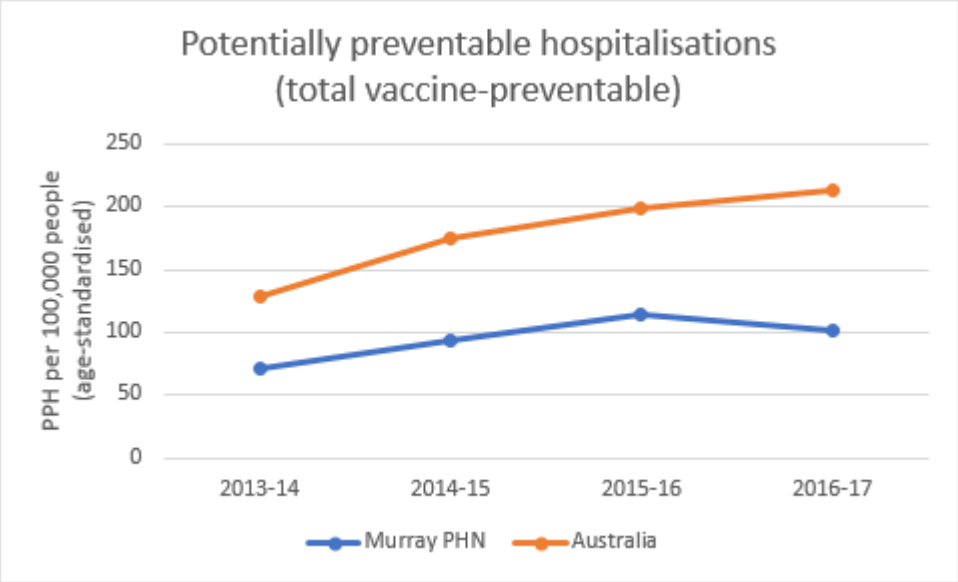
- For total ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons, the Victorian rate for 2018-19 is 29.57. The LGAs of Campaspe (49.44), Swan Hill (42.02), Greater Shepparton (40.39) and Gannawarra (39.97) are significantly higher than the state rate (VHISS, 2020).



- For chronic ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons in 2018-19, the Campaspe LGA (28.72) has double the Victorian rate (14.81). Ten LGAs in the Murray PHN region have higher rates than the Victorian rate with most being significantly higher (VHISS, 2020).



- In 2018-19, acute ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons is highest for the local government area of Campaspe, with 18.51 per 1,000 persons. Fifteen LGAs in the Murray PHN region have higher rates than the Victorian rate (12.57) (VHISS, 2020).



- The average rate across the Murray PHN region in 2018-19 for vaccine-preventable ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons, is lower than the Victorian rate of 2.45, with Greater Shepparton being the only LGA in the region to have a higher rate (2.59) (VHISS, 2020).
- Murray PHN region age-standardised rate of potentially avoidable deaths (aged under 75 years) in 2017 (121.7 per 100,000 people), is higher than the national rate 100.3. The LGAs with the highest rates in the region are Gannawarra (152.8), Benalla (147.3) and Murrindindi (139.5) (AIHW, 2019f).
- Health literacy levels relate to PAH (e.g., smoking remains the key risk factor for respiratory related hospitalisations).

- Link to ageing population and comorbidities, with ageing population rates in regional areas above state average.

Data and consultation sources

Community consultation has been undertaken through the following:

- Murray PHN regional team (Nov 2016 - July 2017).
- Murray PHN evaluation and feedback from GP continuing professional development sessions (Nov 2016 - July 2017).
- Murray PHN Advisory councils (Nov 2016 - July 2017).
- Murray Health Voices (July 2017).

CHILD HEALTH

Children who experience adverse conditions throughout their childhood are more likely to experience poorer health outcomes as adults. Known as the *life-course perspective*, understanding how early-life experiences can shape health across an entire lifetime and potentially across generations is an important aspect of population health planning. A major focus of life-course epidemiology has been to understand how early-life experiences (particularly experiences related to economic adversity and the social disadvantages that often accompany it) shape adult health, particularly adult chronic disease and its risk factors and consequences.

This approach provides a powerful rationale to give more priority to investment in child health and wellbeing as a strategy for improving population health. The Murray PHN region includes areas of socioeconomic disadvantage and populations likely to have experienced trauma, as well as high rates of children in OOHC. A primary health system that is responsive to the needs of children and their carers will lead to improved population health outcomes.

Key issues

- Increasing support for GPs to meet mental health needs of children and young people (all regions).
- Increasing support for GPs to ensure the complex assessment and management and appropriate referral of children living in OOHC.
- Develop better access to mental health promotion for children and adolescents (all regions).
- Improve coordinated planning across sectors and service systems – complex service environment (all regions).
- Review of approach to culturally and linguistically diverse groups, as CALD groups are underrepresented in the data (all regions), and there is a lack of services for CALD children and young people.
- Increase mental health service access rates for Aboriginal and Torres Strait Islander youths (4-17 years) in the Central Victoria and Goulburn Valley regions, looking at earlier intervention for children who have experienced traumatic events.
- More Aboriginal and Torres Strait Islander young people are accessing services than their non-Indigenous peers.

Community voice

The following themes emerged through community consultation:

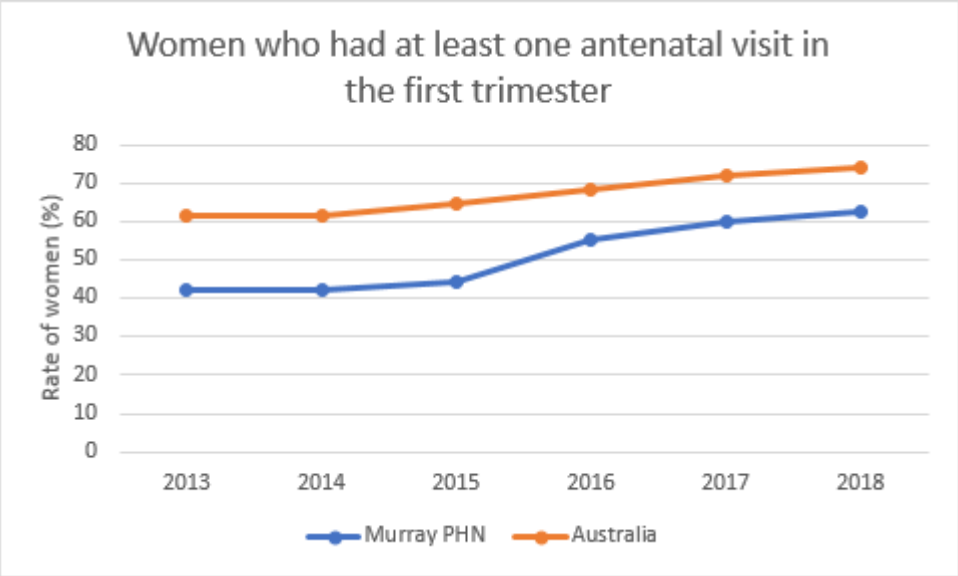
- further comprehensive assessment is required in the early years service sector, including investigation of models of care, best practice models, gap analysis and prospects.

Health needs

Description of evidence

Early years

- In 2018, the rate of women who had at least one antenatal visit in the first trimester in the Murray PHN region was 62.7%, significantly lower than the national average of 74.2% (AIHW, 2020b).



- The rate of women in the Murray PHN region who had 5 or more antenatal visits in 2018 was 84.2%, significantly lower than the national average of 95.4% (AIHW, 2020b)
- The percentage of live births (2014-16) that were of low birthweight in the Murray PHN region was equal to the national rate of 5.0% (AIHW, 2018b).
- In the Murray PHN region (2014-16), 18% of women smoked during pregnancy, higher than the national average of 10.4% (AIHW, 2018b).
- In the Murray PHN region, 22.5% of babies are exclusively breastfed at six months, which is on par with the Victorian average of 23%. The local government areas of Wodonga (14.7%), Campaspe (16.5%) and Greater Shepparton (17.9%) are well below the Victorian rate (PHIDU, 2020b).
- In the Murray PHN region (2018), 58.9% of children aged 4 and 5 years enrolled in a preschool program which is higher than the Victorian rate of 57.8% (PHIDU, 2020b).
- The average annual infant mortality rate per 1,000 live births (2013-17) is 2.8 for Victoria. The highest rates and well above the state rate for local government areas in the Murray PHN region are: Swan Hill (5.3), Mildura (4.4) and Wodonga (3.6) (PHIDU, 2020b).

Child and adolescent wellbeing

- In 2018, the Murray PHN region (11.8%) recorded a higher percentage than the Victorian rate (10.1%) for the number of children developmentally vulnerable on two or more domains. Greater Shepparton (19.4%) is almost double the Victorian rate, with the LGAs of Indigo (17.5%) and Buloke (17.3%) also having high rates (PHIDU, 2020b).
- The proportion of young people who have ever smoked cigarettes (2018) was lower on average for the whole of Victoria (8.8%), compared to the regional rate of 10.6% (VCAMS, 2019).
- Just over half of Victoria's young people (51.8%) drank alcohol (more than a few sips) in 2018, with regional areas (64.3%), having a much higher rate compared to metropolitan areas (47.3%) (VCAMS, 2019).
- The proportion of young people who have ever used marijuana or other illegal drugs in 2018 was 10.3% for Victoria, 9.8% in metropolitan areas, with a higher rate for regional areas (11.8%). Similar levels of participation are evident for females (10%) and males (9.8%) (VCAMS, 2019).

Child and adolescent mental health

According to the *Australian Child and Adolescent Survey of Mental Health and Wellbeing* (2015):

- Almost one in seven (13.9%) Australian aged 4-17 years were assessed as having mental disorders in the previous 12 months. This is equivalent to 560,000 Australian children and adolescents.
- Males were more likely than females to have experienced mental disorders in the 12 months prior to the survey (16.3% compared with 11.5%).
- Attention deficit hyperactivity disorder (ADHD) was the most common mental disorder in children and adolescents (7.4%), followed by anxiety disorders (6.9%), major depressive disorder (2.8%) and conduct disorder (2.1%).
- Based on these prevalence rates, it is estimated that in the previous 12 months 298,000 Australian children and adolescents aged 4-17 years would have had ADHD, 278,000 had anxiety disorders, 112,000 had major depressive disorders and 83,600 had conduct disorders.
- Almost one third (30.0% or 4.2% of all aged 4-17 years) of children and adolescents with a disorder had two or more mental disorders at some time in the previous 12 months.
- Schools provided mental health services to 40.2% of the children and adolescents with mental disorders who attended them: 28.4% received individual counselling, 9.2% attended a group counselling or support program,13.1% used a special class or school, 5.6% had seen a school nurse and 17.1% received other school services.
- Bullying is a frequently reported issue for young people across the Murray PHN region. The proportion of school years 7-9 children who report being bullied in 2018 in Victoria is 17.5%. In the Murray PHN region, 18 LGAs have considerably higher rates of bullying compared to the state rate, with Benalla having almost double the state rate (34.9%) (VCAMS, 2019).
- The proportion of children at school entry in 2018 in the Murray PHN region with emotional or behavioural difficulties is highest in the LGAs of Strathbogie (11.6%), Buloke (11.1%), Mitchell (10.8%), Wodonga (10.8%), Benalla (10.2%), Campaspe (10.0%), and all being significantly higher than the state average (5.6%) (VCAMS, 2019).

Sexual and reproductive health

- The rate of teenage pregnancy in 2012 across the Murray PHN region of 17.9 is significantly higher than the Victorian rate of 10.4 births per 1,000 females, with “hotspots” across the whole region, North West (25.9) being the most significant (VCAMS, 2019).
- The rate of sexually transmitted infections in young people (per 100,000) in 2012 was higher than the Victorian rate (385.3) in eight LGAs within the Murray PHN region, with the highest rates occurring in Wodonga (1,161.7), Wangaratta (911.6) and Greater Bendigo (776) (VCAMS, 2019).

Vulnerable children

- The rate of substantiated child abuse in 2010-11 is substantially higher than the Victorian rate of 6.7 per 1,000 population in the LGAs of Benalla (14.1), Mildura and Wodonga (both 13.2) (VCAMS, 2019).
- The rate of children on child protection orders in 2010 is substantially higher than the rural Victorian average rate of 8.8 per 1,000 in Swan Hill (16.1 per 1,000 and ranked third in the state), Mildura (15.0 per 1,000) and Benalla (14.4 per 1,000) (VCAMS, 2019).
- Benalla has the highest and double the rural Victorian rate of children in OOHC per 1,000 people at 14.4 in 2011, followed by Swan Hill at 10.8, both of which are above the rural Victorian state average of 7.7 (VCAMS, 2019).

- Children and young people in OOHC exhibit a higher prevalence of chronic and complex conditions, involving physical, neurological, developmental, psychological and behavioural difficulties when compared to the average child in Australia.
- Research evidence collated by Moeller-Saxone in 2016 highlights common health and psychosocial problems for young people in OOHC, including:
    - sixty two percent of young people in residential care are overweight or obese (compare to 27% of general population of young people)
    - half of Australian children entering OOHC have dental problems
    - young people with experience of OOHC reported engaging in sexual activity at an earlier age; having more sexual partners, a greater likelihood of engaging in sex in exchange for money, goods or services, and a higher prevalence of sexually transmissible infections. One third of young women had become pregnant or given birth within one year of leaving care
    - young people in OOHC have fewer outpatient visits for asthma but are four times more likely to be hospitalised for asthma than other young people. This is despite higher rates of prescription of controlled medications for young people in residential care
    - OOHC populations engage in earlier initiation to tobacco, alcohol and other drugs and report higher and escalating rates of illicit drug use on exiting care
    - forty five percent of young people in OOHC have a diagnosable mental disorder, versus 10% of their peers. Externalising and behaviour problems are three times more common
    - just under 50% of young people had attempted suicide within four years of leaving care.

Service needs

- Large unmet need in child health and wellbeing across the region including:
    - early childhood development support, especially early assessment of children with risk factors
    - assessment and support for families with children with behavioural difficulties or displaying early signs of learning challenges
    - supporting children with emerging mental health problems (Murray PHN Community Paediatric Project).
- Lack of publicly (i.e., fully funded) paediatric services. Where these services are available there are long waitlists for “non-urgent” problems (Murray PHN Community Paediatric Project).
- There is need for a community paediatrician to address issues of poor access to a paediatrician for some parts of the region (North West) (Murray PHN Community Paediatric Project).
- There is need for culturally appropriate and culturally safe paediatric services for Aboriginal and Torres Strait Islander people and culturally and linguistic diverse communities, and for vulnerable families (North West) (Murray PHN Community Paediatric Project).
- In the North West region there is a need for bulk-billing specialist appointments (the public health service is currently managed privately, therefore specialist appointments must be attended at private clinic and are not bulk-billed) (HealthPathways Clinical Working Group).
- There is a need to better link information and data from antenatal care providers with Mildura Base hospital to support better birth outcomes (North West).
- Most paediatric services are town-centric, with the majority of existing services in Mildura/ Swan Hill. There is a need for services to be available in more remote locations (North West).

- Need for increased access to services and need for improved access for young people with disability to supported care:
    - options for access to After Hours support including improved awareness of supports
    - available for *Ageing in Place* – care in the home models
    - access to specialist service providers and greater flexibility for better models of coordinated care
    - discharge planning processes from metropolitan and regional hospitals and improve after care services are required and need GP coordination.

Data and consultation sources

Community consultation has been undertaken through the following:

- Murray PHN regional team (Nov 2016 - July 2017).
- Murray PHN Advisory Councils (Nov 2016 - July 2017).
- Murray Health Voices (July 2017).
- Population Health Planning Network (July 2017).

Other sources:

- Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing (June 2015).
- Reflections from Paediatrician (Community Paediatric Project).
- Stakeholders (Hands Up Mallee).
- HealthPathways Clinical Working Group.

GENERAL PRACTICE

A thriving, accessible and high-quality general practice sector is vital to the health of the Murray PHN community. Within the Murray PHN region, the general practice system is facing challenges due to an ageing workforce, system reforms, digital health, and practice viability. Along with an ageing population, high rates of chronic disease and mental ill health, and the complexities of the rural locale, recruitment and retention of general practitioners in the region remains an ongoing concern. The landscape of general practice has been changing in Australia for several years, including a decrease in hours worked per week and a greater focus on work-life balance. Rural GPs are traditionally known to work longer hours, work in multiple settings and cover a broader scope of practice – all of which could potentially deter GPs from moving to a remote or rural area (Shresta & Joyce, 2011).

The focus of this section of the Needs Assessment is to describe the health concerns commonly encountered by GPs, a description of the local workforce, After Hours coverage and issues, and the activity of GPs associated with chronic disease management and potentially avoidable hospitalisations.

Key issues

- In 2018-19 in the Murray PHN region, 34% of GP Standard (Level B) consultations involve patients aged 65 years or over (AIHW, 2020f).
- Patient out-of-pocket costs increased by 2.86% between 2017–18 and 2018–19, almost double the increase in the consumer price index over the same time (RACGP, 2019).
- International medical graduates (who have general practice experience overseas and have come to Australia to complete their GP fellowship) and GP registrars (doctors who are undertaking their training towards GP fellowship without having had GP experience elsewhere) often rotate through regional and rural training posts. These doctors account for approximately one third of our medical workforce in Murray PHN's region and have a limited understanding of the local service system.
- Many rural and small regional centres are struggling to retain and attract procedural GPs (GPs who have advanced skills in obstetrics, anaesthetics, small surgeries, emergency etc.).
- Extremely complex patients need a shared care approach from primary and secondary health services but access to these services can be limited.
- Potential impact on recruitment and retention of rural GPs due to changes in MBS fee arrangements for non-Vocationally Registered GPs.
- RWAV identified six "hotspot: SA2 areas in the Murray PHN Region that are experiencing, or at risk of, inadequate primary care access.
- The impact of GP shortages in rural communities leads to:
    - increased use of UCC and EDs in hospitals
    - limited access to GP After Hours in smaller communities and RACF with additional implications when the GP has no admitting rights to hospital
    - limited "in hours" GP services in smaller rural communities
    - impact on GPs where local government no longer undertakes child immunisation programs (Albury)
    - limited access for patients with complex care needs such as: requiring bariatric support, access to interpreter services and respite care/aged care
    - GP fatigue regarding After Hours (refer to After Hours section)
    - GP isolation and lack of peer support

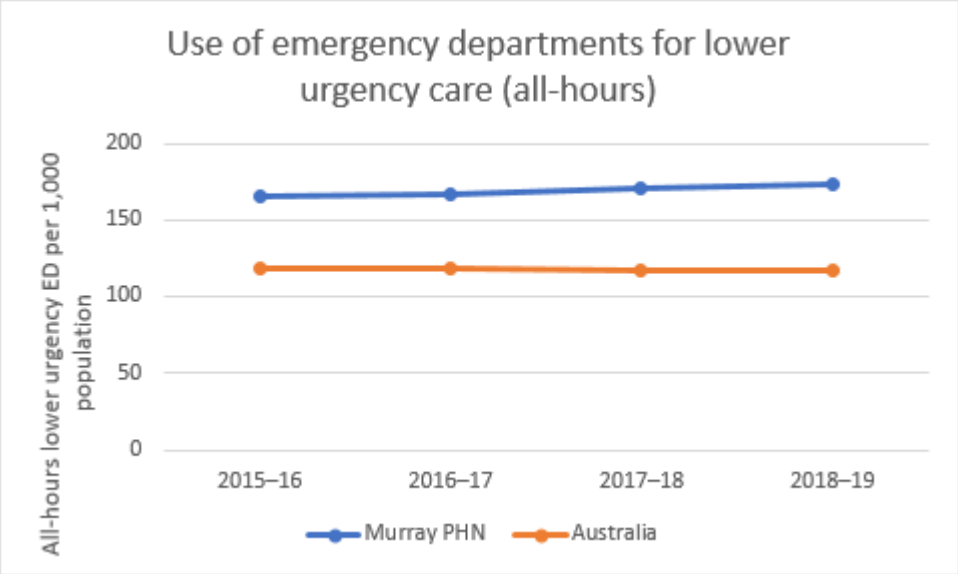
- support for navigating transitioning patients back into primary care in their local service system is required.

Health needs

- Psychological issues are the most common health issue managed by GPs (RACGP, 2019).
- GPs identified mental health and obesity as the health issues causing them the most concern (RACGP, 2019).
- Of the encounters claimable from MBS/DVA: short surgery consultations as a proportion of all MBS/ DVA-claimed consultations increased from 2006-07 to 2015-16 and standard surgery consultations decreased significantly. The proportion claimable as chronic disease management items, health assessments and GP mental health care all increased significantly (BEACH Survey, 2016).
- The most frequently managed GP consultations from 2006-07 to 2015-16 were from hypertension, check-ups and upper respiratory tract infection (BEACH Survey, 2016).
- The management rate of hypertension decreased from 9.6 per 100 encounters in 2006–07 to 7.5 per 100 in 2015–16. Due to the overall increase in the number of general practice encounters nationally, there were still an additional 800,000 encounters at which hypertension was managed in 2015–16 than in 2006–07 (BEACH Survey, 2016).
- The management rate of chronic conditions did not differ in 2015–16 (53.3 per 100 encounters) from that of 2006–07 (53.3 per 100 encounters). However, due to the increase in the number of GP visits nationally, it is estimated that GPs managed 21.1 million more chronic problems in 2015–16 than they did a decade earlier (BEACH Survey, 2016).
- The management rate of depression increased from 3.7 per 100 encounters to 4.2 per 100 between 2006–07 and 2015–16, suggesting about 2.2 million more occasions where depression was managed in 2015–16 than in 2006–07 (BEACH Survey, 2016).

Service needs

Description of evidence



- For the Murray PHN region there are 217 total rural and regional practices consisting of:
    - 144 group practices
    - 32 solo practices
    - 32 community health service practices
    - 9 Aboriginal health service practices

  There are 822 GPs in the Murray PHN region (RWAV, 2018)
- From RWAV data for the Murray PHN region (2017):
    - Rural GPs that are female: 301 (37.5%)
    - The average age of female GPs in the area is 47 years
    - The average age of male GPs in the area is 52 years
    - There are approximately 219 practice managers
- There are approximately 317 practice nurses. There are172 accredited general practice services (89%) in the Murray PHN region (MPHN, 2020b).
- The rate of general practice services sharing data with Murray PHN is 79% (153) (as at Oct. 2020) (MPHN, 2020b).
- Distinct districts experiencing general practice workforce shortage in 2015 were: Mildura, Ouyen, Murrayville, Boort, Wedderburn, Rushworth, Yea, Numurkah, Moyhu, Corryong, Wangaratta, Bethanga.
- RWAV- identified “hotspot” SA2 areas in the Murray PHN Region that are experiencing, or at risk of, inadequate primary care access:
    - Robinvale
    - Kerang
    - Loddon (includes Boort, Wedderburn, Inglewood, Pyramid Hill)
    - Nagambie
    - Cohuna
    - Buloke (includes Charlton, Sea Lake, Donald, Wycheproof).
- During 2016-17, 82.6% of people in the Murray PHN region saw a GP in the previous 12 months, which is on par with the national average (82.5%) (AIHW, 2018b).
- In 2016-17, 14.5% of people in the Murray PHN region saw a GP in the previous 12 months for urgent medical care, higher than the national average of 11.2% (AIHW, 2018b).
- The percentage of people in the Murray PHN region who did not claim a GP attendance in the last 12 months (2016-17) was 9.9%, lower than the national average of 12.5% (AIHW, 2018b).
- 81.9% of GP attendances in the Murray PHN region in 2016-17 were bulk billed, compared with 85.7% nationally (AIHW, 2018b).
- The percentage of people that saw a GP After Hours in the previous 12-months (2016-17) in the Murray PHN region was 8.4%, which is the same as the national percentage (AIHW, 2018b).
- Ageing workforce has resulted in reduced hours of work.
- Demands and pressures of significant seasonal changes and/or major events to population numbers during peak tourist seasons (Yarrawonga, Mount Beauty, Mount Hotham, Echuca) puts significant strain on local practices and there is need for additional locum staffing and rosters to meet demand during peak seasons and events.

- Evidence from Sunraysia Community Health Services is that 70% of clients die in hospital despite many stating preferences to die at home. New After Hours palliative care models are currently being trialled across the Murray PHN region.
- A recent report prepared for the Loddon Mallee Regional Palliative Care Consortium indicated that just under 60% of carers that responded to their survey were 65 years or older.

Potentially avoidable hospitalisations, chronic disease and GPs

- Relationship between PAH and lack of access to After Hours GP services and lack of support for isolated GPs.
- Relationship between PAH and absolute GP shortages in some localities (e.g., Buloke/Mildura LGAs).
- Lack of communication regarding discharge planning and return to community services.
- General practitioners do not review care plans as frequently as required by best practice principles. General data quality issues exist for many GP practices across the region.
- Need to increase development and review of care plans for chronic diseases.
- Need to increase use of condition specific patient action plans for CDM.
- Need for GPs to assess and refer patients to a range of allied health services and/ or for multiple treatments within the one GP consultation.
- In 2018-19 in the Murray PHN region, a GP Chronic Disease Management plan and a GP Multidisciplinary Case Conference was conducted for 99,191 and 1,482 patients respectively (AIHW, 2020f).
- Lack of collaborative care across the treatment continuum, namely in discharge from acute mental health services into community, and poor feedback and collaborative care between GPs and specialist services (psychological services and mental health service providers).

HEALTH WORKFORCE

The information presented below summarises the issues related to the health workforce in the Murray PHN region. There is strategic opportunity for PHNs to support workforce planning, retention and development activities matched to the population health needs of their communities through the development and commissioning of services. As the Murray PHN region is predominantly rural, there is an ongoing risk that communities will not have adequate access to primary health services due to issues of service viability, recruitment, and geography.

A key area of the health workforce priority is the provision of 'after hours' services. After Hours primary health care is "accessible and effective primary health care for people whose health condition cannot wait for treatment until regular primary health care services are next available. It should not be a substitute for primary health care that could otherwise occur 'in hours'" (DoH, 2015).

Key issues

- Existing labour shortages across a range of professions and disciplines.
- Changing landscape of general practice – with increased work/life balance and reduced after hours, full time, and on-call work.
- Skills shortages for emerging and growing needs such as aged care, dual diagnosis, patient and consumer engagement, digital health care, information management systems and evidence-led practice.
- Provider capabilities to attract and retain a skilled workforce and to establish and maintain strong collaborations with peer service providers and others in the broader health and social services sectors.
- Access needs are outlined, and future models of care need to be considered with the quantum, availability and capacity of specialists to meet demand.
- Specific challenges for rural communities in attracting, training and retaining skilled workforce, especially for residential aged care, women's health and allied health.
- Training opportunities in rural and regional settings and analytics about workforce supply and demand issues at a regional level.
- Workforce sustainability issues continue to present challenges for remote Aboriginal and Torres Strait Islander communities.

Community voice

- Three key themes emerged from consultation with general practitioners regarding after hours:
    - changing workforce (improved GP work/ life balance, more fractional staff, more female GPs, less 'small town' GPs, de-skilling or disempowerment of RACF and nursing staff via changed policies/ risk shifting/ clinical governance issues)
    - business/finance models (no, or very poor) "on call" allowances to balance out the imposition/ inconvenience, GP payments poor compared to peer specialists, PIP payments usually go to the practice, not the on-call doctor
    - changing community expectations
    - with a cultural shift to longer, 24-hour, or online shopping hours, and the age of *instant information*, there has been a reported shift in patients' expectations for After Hours medical service.

- Enablers for improving After Hours access and potential opportunities all focus around the themes of:
    - telehealth (various methodology – direct patient to GP, patient to emergency physician, nurse to GP or physician, telephone, app or video based)
    - nurse facilitated care or triaging (RACFs, UCCs, practice nurses)
    - GP/ practice collaborations/ clusters/ networks (supported further via telehealth triaging/ care options)
    - workforce upskilling to ensure the above options work optimally (especially points one and two).

Service needs

Rural workforce

- There is limited regional health workforce data collection and analytics. It is more often historically reported and not as informative about demand and supply issues, with the focus frequently being on general practitioners and not the whole health workforce.
- A focus on strategic engagement of key players is planned to collaborate on workforce strategies that redevelop and support an accessible and sustainable primary health system.
- In 2016, the region had 14% of its workforce employed in the health care and social assistance industries (ABS, 2016c). For the Aboriginal and Torres Strait Islander population, the percentage was higher at almost 19% (ABS, 2016a).
- Need for significantly more nurses and personal care workers with a broader scope of practice.
- There are disparities in scope of practice expectations based on where GPs are trained impacting on service availability once the individual is practicing.
- There is a need for more rural generalists.

Access to specialist providers

- There are excessively long wait lists and extended waiting times reaching into years for some specialties.
- There are complexities and barriers to accessible, informed referral to specialist clinics.
- A lack of access for women's health specialists across life-course needs and specifically for fertility, sexual and reproductive health needs.
- Specific specialties identified as having relative impacts across most of the region are rheumatology, gerontology, dermatology, endocrinology, speech pathology, pain management specialists and psychiatry, including:
    - paediatric care; access to specialist services for paediatricians – long waiting lists (years)
    - paediatric diabetes, with transition to adult diabetes services
    - mental health related services to support children aged between 10-14 years with medium to severe behaviours
    - mental health issue or paediatric issue
    - rehabilitation services for pulmonary care in Benalla and transport options
    - a need for increased access through telehealth to specialists and addressing problems around
    - financial burden and transport barriers, especially with non-bulk billing facilities
    - many rural and small regional centres are struggling to retain and attract procedural GPs (GPs who have advanced skills in obstetrics, anaesthetics, small surgeries, emergency etc.)

- Referrals to medical specialists increased from 5.4 per 100 problems managed in 2006–07 to 6.2 in 2015–16. There was a significant decrease in the rate of referrals to ophthalmologists, and marginally significant increases in referrals to dermatologists, cardiologists and psychiatrists (BEACH Survey, 2016).
- The average number of specialist attendances per person for 2016-17 for the Murray PHN region (0.99) is comparable to the national average (0.95) (AIHW, 2018b).
- According to the Department of Health and Human Services (DHHS) performance monitoring, there is up to a two-year wait to be seen by a specialist, for example: urology, ear, nose and throat and orthopaedics.
- There are almost 170 medical specialists and 25 allied health professionals providing some level of outreach service through specialist clinics within the region.

Access to allied health practitioners

- An increased demand for and lack of access to exercise physiology.
- An increased demand for high risk foot services (increasing diabetes rates with diabetes complications).
- Improved continuity of service required, especially for when MBS visits have been used up.
- Bulk billed allied health care is not widespread.
- Lack of public funded allied health for lower income persons.
- Lack of access to primary dental care.
- Need for extended hours for allied health and dialysis services.
- Opportunity for increased, supported telehealth services.
- Need for market development and incentives in some rural communities for allied health providers.
- Referrals to allied health services increased from 2.1 per 100 problems managed in 2006–07 to 3.6 in 2015–16. This was reflected in significant increases in referral rates per 100 problems to physiotherapists, psychologists, podiatrists/chiropodists and dietitians/nutritionists (BEACH Survey, 2016).
- Two-to-three month waiting periods for appointments with a dietitian, podiatrist or physiotherapist in parts of the region. Longer waiting periods for speech pathology in some areas (especially for paediatric needs).
- Ambulatory Care Sensitive Conditions data shows very high admission rates for dental conditions in 2018-19 for some LGAs in the Murray PHN region compared to the Victorian rate (2.59 per 1,000 persons) (VHISS, 2020). LGAs with the highest rates are Mildura (6.18 per 1,000 persons), Swan Hill (4.27 per 1,000 persons), Campaspe (3.82 per 1,000 persons) and Benalla (3.4 per 1,000 persons). This can be interpreted in part to a lack of access to and or uptake of primary dental care.
- There is significant lack of paediatric allied health services region wide - especially for paediatric psychology, occupational therapy and physiotherapy. (Murray PHN regional team – sector interaction).
- High emergency department presentation and admission rates for cellulitis - this is often preventable with sufficient access to allied health.
- Gangrene causes the highest number of bed days in Goulburn Valley and North West regions. This is highly preventable with adequate access to primary care services.

After hours

- People living in outer regional, remote and very remote areas were almost twice as likely to report visiting an ED because a GP was not available when required, than those living in major cities (29% compared with 18%) (ABS, 2019b).
- The main reasons why a patient went to ED rather than a GP (as collected by ABS Patient Experiences in Australia Survey, 2018-19):
    - taken by ambulance or serious condition: 47.1%
    - GP not available when required: 20.5%
    - GP does not have required equipment/facilities: 12.4%
    - sent to emergency by GP: 10.5% (ABS, 2019b).
- Proportion of people in the Murray PHN region who went to the ED for their own health and at the time, felt the care could have been provided by a GP 28% (ABS, 2016e).
- In 2018-19, the number of GP attendances in RACF per patient who received at least one visit for the Murray PHN region was 14.5, lower than the national average of 17.8 (AIHW, 2020f).
- There are many general practices not in collaborative After Hours arrangements whilst some practices, who have reported collaborative After Hours arrangements across small towns, ceased because they were unsustainable.
- Increasing community expectations of care on demand for non-urgent conditions.
- Opportunity to expand the use of Rural and Isolated Practice Endorsed Registered Nurses (RIPERN) for After Hours support at UCCs.
- Poor “in hours” access and patients disengaged from GPs are presenting After Hours to urgent care centres or EDs.
- New models of care and service delivery to support specific populations e.g., peri-urban or dormitory towns and palliative care and support through After Hours.
- Need for new models to include After Hours support for carers.
- Availability of video conferencing/telehealth technology to support remote consultation in After Hours- improved support for rural communities with limited GP access.
- Access to pharmacies After Hours for dispensing of medication in smaller towns and rural areas – a super pharmacy strategy is underway but not in small communities.
- Difficulties in recruiting to isolated GP practices with younger graduates seeking a different lifestyle to that offered by small towns: Mallee Track Health and Community Service in Ouyen persevered for 12 months to recruit a permanent doctor.
- Advances in, and simpler use of, telehealth technology can act as an enabler to new models of After Hours care.
- Kyneton District Health Service reports that for 2015/16, 82% of presentations were categorised a “seen by nurse only” compared with an average of 40% for Victorian rural hospital EDs.
- Based on a recent review of six small rural hospitals, four of the six were not using their RIPERN staff effectively or wanted to recruit or train more (four of the six were in the Murray PHN region area).
- Five-month Heathcote RIPERN trial, which targeted frequent presenters to improved supports and access to “in hours” services and thereby diverted 31 potential UCC presentations, saved an estimated 86 bed days and 14 ambulance transfers. The hospital board has agreed to continue the approach within its existing resources.
- Evidence from Cobaw Community Health Service shows that 46% of Kyneton and Woodend residents work outside the shire increasing the demand for extended hours and After Hours services

DIGITAL HEALTH

Across the Murray PHN region, digital health offers a range of outcomes that will improve access to care, and improved health outcomes, for our predominantly rural communities. Although issues relating to internet quality and availability, as well as limited understanding of eHealth initiatives have been barriers, improved uptake of digital health across the region will improve the primary care patient experience.

Key issues

- Rural challenges of internet quality and reliability.
- Poor understanding and therefore uptake of benefits of digital health initiatives.
- Incompatible health service systems and software.
- Workforce readiness/ change management needs.
- Ongoing financial sustainability.
- Perceptions of telehealth as an alternative or optional way of receiving health care, rather than it being “how we do it”.
- Historical experiences with earlier digital health technology (both workforce and consumers).

Digital health

Digital Health is also referred to as eHealth and includes telehealth.

- As of 30th June 2020, 130 health providers were using telehealth across the Murray PHN region. general practice clinics represented 52% of telehealth users, followed by primary care (19%), maternal health (8%), RACF (7%), specialists (6%), allied health 4% and ACCHOs (2%) (MPHN, 2020b).
- A general lack of education, understanding and uptake of eHealth, including by private allied health practitioners.
- A belief among some health practitioners that eHealth is problematic and that they won’t use it until there is an effective system that communicates with the hospital, GP and pharmacy systems.
- Lack of (and perceived lack of) interoperable secure messaging.
- Variable infrastructure (poor internet connection in rural areas).
- Confusion and variability regarding video conferencing platforms for telehealth.
- Private health funds increasingly using eHealth apps and technology as they are aware of cost/ benefits.
- Under-use of telehealth for patients experiencing regional and rural disadvantage.
- Inconsistent awareness of basic general practice IT requirements for both general practices and their IT providers.
- Towns located on borders face the additional challenges of working across them where state-based eHealth systems and initiatives may vary.

Murray HealthPathways

Murray HealthPathways provides up-to-date, localised information regarding best-practice for the assessment and management of common clinical conditions. As at October 2020, there are 575 localised pathways available.

- The most viewed pages in 2019-20 were:
    - Covid-19 assessment and management
    - non urgent adult mental health referrals
    - inflammatory arthritis
    - antenatal- first consult
    - hypertension
    - hyperlipidaemia
- The most common search terms included:
    - hypertension
    - diabetes
    - gout
    - osteoporosis
    - sinusitis
    - asthma
- The most viewed *Suites* included:
    - mental health
    - medical
    - Covid-19
    - women's health
    - antenatal care (MPHN 2020a).

My Health Record (MyHR)

- There is a knowledge gap between what the consumer expectations are around MyHR and the reality of how some GPs and other health providers are using the MyHR system. Many consumers or patients think as consent has been given, by having a MyHR, that their medical information is automatically uploaded and available.
- Across Murray PHN's region there are 476 health care provider organisations registered for the MyHR system: approximately 200 general practices, 147 pharmacies, 15 public hospitals and health services, four private hospitals and clinics, two aged care residential services, 50 allied health, 18 specialists and two pathology and diagnostic imaging services.
- As of July 2019, for MyHR, the national participation rate (the number of people who chose not to opt out as a percentage of the number of people eligible for Medicare as at 31 January 2019), is 90.1%. Victoria (89.3%) is lower than the national rate (ADHA, 2019).

MyHR statistics for the Murray PHN region 2018 to 2019:

- Shared health summary uploads increased from 23,143 to 31,452
- Event summary uploads increased from 784 to 1,196
- Discharge summary uploads increased from 123 to 1,083
- Shared health summary views increased from 1,010 to 1,380
- Event summary views increased from 83 to 147.

Referral

- Lack of interoperability between health services systems.
- Health service IT infrastructure remains fragmented. Access to regional broadband internet remains a significant barrier to interoperability (Murray PHN regional team – community interaction).
- There are legacy systems that don't engage patient or consumers in their own care.
- Improvements are required to enhance e-messaging systems and secure messaging systems performance.
- Lack of workforce knowledge regarding referral systems to family violence services including:
    - children's services
    - district nursing services
    - diagnostics services.
- Need to improve health professionals' understanding of the billing eligibilities and constraints around diagnostic services: for example, if a specialist orders an MRI for a health care card holder, it is bulk billed, but if the specialist requests the GP to order an MRI for the patient, it can result in an out-of-pocket cost of $200.
- Improvements are needed in the communication of changes to service provision between agencies (day, frequency, eligibility, referral method).
- Timely and accurate information provision about costs and service eligibility is not effectively communicated.
- Significant variances across referral pathways and processes within and between service providers.
- In 2013-14, 1,332 patients in the Murray PHN region utilised GP telehealth services, increasing to 3,109 patients in 2018-19 (AIHW, 2020f).
- Episodic use of telehealth to support discharge planning and shared care arrangements within the areas of cancer survivorship, dermatology and cardiology has been reported.
- Telehealth referrals have increased over the last three years with higher use of the MBS financial incentives.
- Delays through redirected triage and timeframe reflected was six to eight weeks.
- Demand for podiatry services was particularly high (waiting times can be as great as four months).
- Criteria and method to access the service has been reviewed to manage the demand, however the level of complexity and acuity continues to increase which affects waiting times.

DATA TABLES

The following tables include a selected set of indicators for the priority areas of:

- Population Health;
- Child Health;
- Alcohol and Other Drugs;
- Mental Health;
- Aged Care; and,
- Chronic Disease.

The indicators are presented for each local government area and where data is available, at the state or national level. Several indicators are drawn from Victorian data repositories and data for Albury (NSW) is not available.

For cancer incidence rates (per 1,000 population), please note these are not age standardised and need to be interpreted with caution. Differences in rates can be attributed to age structures rather than incidence.

Please note the following abbreviations as they are used in the data tables:

0 – zero

ASR – age standardised rate

NA – data is not available

NP – data is supressed due to low count

Population Health

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Demographics																										
Estimated resident population (ERP)	2018	ABS 2018	53 767	12 730	14 024	6 184	37 592	10 547	116 045	66 007	16 490	7 513	49 388	8 979	55 515	44 299	29 799	19 514	14 478	10 645	20 759	6 054	29 087	41 429	6460675	24992860
ERP- male %	2018	ABS 2018	48.4	49.8	48.7	51.3	49.7	50.6	48.9	50.2	49.7	51.7	49.8	50.4	49.6	50.4	50.1	50.2	51.1	50.3	51.1	52.3	48.7	49.2	49.5	49.6
ERP- female %	2018	ABS 2018	51.6	50.2	51.2	48.7	50.3	49.4	51.1	49.8	50.3	48.2	50.2	49.6	50.4	49.6	49.9	49.8	48.9	49.7	48.9	47.6	51.3	50.8	50.5	50.4
Median age (years)	2018	ABS 2018	38.5	48.3	49.1	50.9	45.3	49.7	38.3	38.8	46.4	52.2	41.8	47.4	39.4	36.9	46.7	49.2	48.1	51.7	39.7	50.4	44.8	35.9	42.3	37.3
Median age at death (years) males	2013-2017	PHIDU 2020	79	79	80	80	79	83	78	79	78	78	78	78	78	76	79	80	77	79	79	80	80	77	79	78
Median age at death (years) females	2013-2017	PHIDU 2020	85	85	85	86	84	85	85	84	85	86	85	85.5	84	82	84	85	84	83	84	87	84.5	83	85	84
Life expectancy (years) at birth- males	2013-2017	VHISS 2020	NA	81.5	79.08	77.46	79.96	81.2	80.35	80.13	80.69	79.63	82.03	81.39	78.8	82.1	79.26	82.32	80.27	80.73	79.29	81.79	80.18	82.55	81.9	NA
Life expectancy (years) at birth- females	2013-2017	VHISS 2020	NA	84.59	83.84	83.35	83.72	84.1	83.63	84.28	84.97	85.84	84.45	84.69	84.66	84.13	84.07	84.22	85.8	85.82	84.21	86.09	84.77	85.72	85.55	NA
Standardised death rate per 1,000 population	2016-2018	ABS 2018	6.1	5.9	6.1	6.6	5.9	6.1	6	5.6	5.5	5.2	5.5	5.6	6	5.2	6.1	5.2	5.7	5.6	6.2	5.3	5.6	5.6	5	NA
Total deaths age-standardised rate per 100,000 population	2013-2017	AIHW 2017	582.3	582.4	565.3	560.9	615	678.5	568.8	556.9	490.3	502.5	526.6	516.4	578	517.6	579.9	456.9	579	595.7	565.3	540.1	559.8	601.6	NA	507.9
Premature deaths (aged under 75) age-standardised rate (per 100,000 population)	2017	AIHW 2017	239.3	157.2	251.3	NA	252.5	287.4	239.2	229.9	185.1	252.3	170.1	213.2	237.7	215.2	239.2	155.1	271.6	226.4	238.9	NA	237.9	223	NA	198.9
Potentially avoidable deaths (aged under 75) age-standardised rate (per 100,000 population)	2017	AIHW 2017	138.6	NA	147.3	NA	122.5	152.8	129	121.3	119	NA	78.9	NA	120.4	110.2	121.8	74.8	139.5	NA	141.6	NA	115.2	113.9	NA	100.3
Total fertility rate (per female)	2018	ABS 2018	2.12	1.81	2.11	2.21	2.14	2.38	1.93	2.33	1.89	2.32	2.11	2.05	2.21	2.12	2.33	1.8	1.94	1.99	2.59	2.46	2.11	2.03	1.6	1.74
Couple family with children %	2016	ABS 2016	38.8	32.2	32.9	36.5	40.1	38.6	40.9	42.9	42.6	34.2	52	33.8	38.8	47.6	38.2	34.4	38	32.8	38.7	37.2	40	41.7	NA	45.9
One parent family %	2016	ABS 2016	11.5	7.8	11.5	7.6	10.5	8.1	12.4	11.9	9.1	8.2	8.4	7.3	12.1	11.7	10.9	9.9	7.9	9.8	9.6	7.1	10.4	13	NA	10.2
Divorced %	2016	ABS 2016	9.7	9.6	10.5	8.1	9.3	8.6	9.4	8.6	10.3	10.5	8.4	10.6	9.1	8.8	9.3	12.5	10.9	11.5	7.7	9.5	9.3	9.7	7.9	8.5
Aboriginal and Torres Strait Islander peoples- % of total population	2016	ABS 2016	2.8	0.8	1.6	1.1	2.4	1.9	1.7	3.4	1.3	1.6	0.6	0.7	3.8	1.6	1.7	1.1	1.3	1.1	4	1.5	1.3	2.5	0.8	2.8
Persons born overseas %	2016	ABS 2016	10.9	12.6	8	5.6	6.9	5.3	8	15	8.8	8.2	12.6	10.7	10.6	11.6	9.4	11.7	11.3	9.2	11.5	8.5	8.2	10.1	28.2	26.3
Persons born overseas proficient in English %	2016	ABS 2016	90.8	93.8	96.6	95.1	96	96.5	90.7	81.9	96.3	96.7	97	96	82	93.9	94.2	85.4	97.4	96.5	76.9	97.5	92.4	93.5	86.5	88.7
Number of humanitarian new settler arrivals	2019-2020	DHA 2020	55	0 to 4	0	0	0	0	37	142	0	0	0	0	68	0	0 to 4	0	0	0	0 to 4	0	0	118	54	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Disability																										
Persons who have need for assistance with core activities for daily living %	2016	ABS 2016	5.8	4.9	6.9	7.4	6.4	6.5	5.9	6	4.9	7.5	4.1	4.3	6.7	4.8	6.8	5	5.4	6.7	5.4	5.7	5.8	5.8	5.1	5.1
Persons with a disability %	2016	VLGA 2016	NA	5.9	7.5	8.1	6.9	7	6.4	6.6	5.3	8.4	4.4	4.9	7.4	5.3	7.3	5.7	6.1	7.4	6.3	6.1	6.3	6.3	5.5	NA
People with a profound or severe disability (includes people in long-term accommodation), all ages %	2016	PHIDU 2020	6.2	5.5	7.3	8	6.8	6.8	6.2	6.4	5.1	8.1	4.3	4.7	7.2	5.2	7.2	5.3	5.8	7.3	6	6	6	6.1	5.4	5.4
People with a profound or severe disability and living in the community, all ages %	2016	PHIDU 2020	5	4.8	6.1	6.8	5.6	5.6	5.4	5.5	4.4	7.6	3.7	3.8	6.2	4.8	6	5.1	5.2	5.7	4.9	4.9	5.3	5.5	4.6	4.7
Population receiving disability support pension %	2017	PHIDU 2020	7.6	6.3	10.2	10	8.1	9.8	8.4	8.4	6.2	13.3	4	5.6	9.2	6.2	9.1	8.6	7.7	8.7	7.9	8.5	8.1	7.9	4.9	5.3
Number of lone persons with a disability	2016	VLGA 2016	NA	122	179	81	379	114	1077	588	124	97	238	76	635	223	291	198	143	113	200	51	321	348	46560	NA
Number of NDIS participants	2019	NDIS 2020	1238	154	330	86	785	133	2997	1221	250	104	761	100	976	694	502	312	190	139	328	92	657	1132	98541	364879
Persons who provide unpaid assistance to people with a disability %	2016	PHIDU 2020	12.1	11.7	13.3	14.3	12.3	13.2	12.9	12.1	12.9	13.5	12.4	11	12.2	11.5	12.4	12.9	12.2	12.8	11.8	14	13.3	12.6	11.6	11.3
Immunisation																										
Children fully immunised at 1 year of age %	2018	PHIDU 2020	95.5	94.7	94	98.2	95.5	96.9	94.5	93.6	92	91.1	94.5	92.6	93.5	94.9	93.1	87.8	92.7	89.9	92.9	96.6	93.9	96.2	94.3	94
Children fully immunised at 2 years of age %	2018	PHIDU 2020	92.7	84.8	89.3	96.4	92.8	96.5	91.9	91.5	91.7	87.1	92.9	84	91.7	93.1	92.7	91	95.7	88.1	89	86	91.7	94.9	91.2	90.7
Children fully immunised at 5 years of age %	2018	PHIDU 2020	95.7	97.7	97.4	100	97	99.1	96.4	96.7	96.7	97.1	97.2	94.4	94.9	97.7	96.2	92.6	95.8	92.6	96.6	90.3	96.9	97	95.5	94.7
HPV 3 dose coverage for females aged 15 years %	2017	PHIDU 2020	74.1	79.6	78.8	105.8	97	93.2	79.8	83	95.6	80.7	74.2	38	84.5	72.8	95.8	83.1	90.9	90.2	81.1	82.2	86	86.1	80	80.5
HPV 3 dose coverage for males aged 15 years %	2017	PHIDU 2020	75.5	79.1	62.1	105.7	86.7	98.6	73.9	77.6	83.2	81.7	75	35	71.4	78.4	79	81.5	98.7	79.5	87.1	97.8	73	81.7	76.5	76.1
Oral health																										
% adult population fair/poor self-reported dental health	2017	VPHS 2017	NA	29.7	36.3	36	25.7	23.7	21	28.5	34	33.6	20.6	23.3	20.6	23.9	27.3	26.7	20.7	22.8	31.2	21.8	24	27.1	24.4	NA
Children (0-5 years) presenting with at least one decayed, missing or filled (baby) or permanent (adult) tooth, attending public dental services %	2017-2019	DHSV 2020	NA	NP	NP	NP	35	NP	29.8	38.5	24.3	32.3	40.3	NP	26.7	25.5	40.2	26.1	NP	29.1	22.3	NP	18.2	18.3	26.3	NA
Potentially preventable hospitalisations dental conditions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	1.88	3.4	2.88	3.82	2.12	2.81	2.83	1.05	1.9	3.27	3.07	6.18	4.73	2.72	2.19	2.82	2.58	4.27	0	2.67	1.02	2.59	NA
Potentially preventable hospitalisations dental conditions for children aged 0-9 years, standardised rate per 1,000 persons	2017-2019	Dental Health Services Victoria 2020	NA	3.3	5.7	10.1	10.5	8.5	4.7	6.5	0	0	7.4	3.1	6.1	7.1	8.5	5.6	6.5	3.5	17.5	1.3	4.9	3.2	6.1	NA
% adult population avoided or delayed visiting a dental professional because of the cost	2017	VPHS 2017	NA	38.7	32.8	30.2	40.8	32	38.6	34.9	39	30.1	37.1	33.8	26.3	41.1	39.1	35.1	35.5	33.4	30.7	35.2	39.8	36.3	33.9	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Women's health																										
ERP- number of females	2018	ABS 2018	27727	6391	7186	3010	18902	5211	59258	32870	8289	3625	24803	4456	27994	21961	14881	9713	7078	5290	10152	2885	14918	21037	3263556	12595459
ERP- % of females	2018	ABS 2018	51.6	50.2	51.2	48.7	50.3	49.4	51.1	49.8	50.3	48.2	50.2	49.6	50.4	49.6	49.9	49.8	48.9	49.7	48.9	47.6	51.3	50.8	50.5	50.4
Births per 1,000 women	2017	VWHA 2018	NA	18.68	18.88	16.97	21.26	19.07	26.3	28.11	16.55	14.99	22.5	17.16	28.98	28.56	23.91	15.26	18.17	17.88	31.8	20.64	22.71	28.63	23.9	NA
Proportion of local councillors female %	2015	VWHA 2018	NA	28.61	57.1	25	44.4	33.3	27.3	14.3	33.3	22.2	55.6	28.6	22.2	33.3	36.4	14.3	57.1	28.6	14.3	40	ND	28.6	34.8	NA
Unpaid domestic work more than 15 hours per week (females) %	2016	VWHA 2018	NA	28.9	29.3	32.4	28.1	32.2	26.4	25	29.2	31.3	29.4	28.1	25.9	26.2	28.2	30	29.9	30.8	25.7	32.9	28.2	25.3	26.7	NA
Unpaid domestic work more than 15 hours per week (males) %	2016	VWHA 2018	NA	12.9	12.9	10.4	10.2	12.6	9.9	8.1	12.6	13.4	11.1	13	9.3	8.6	10.2	13.3	13	12.5	8.6	13.1	10.8	8.1	9.5	NA
Proportion of females earning below minimum weekly wage %	2016	VWHA 2018	NA	48.7	50.3	52.7	47.4	53	45.3	44.1	43.9	50.8	41.9	46.8	45.5	43.5	49.4	48.5	49.6	48.7	43.9	50.6	45.3	42.9	45.7	NA
Females 15 years and over who have completed Year 12 or equivalent %	2016	VWHA 2018	NA	35.6	31.6	29.3	28.7	26.3	36.2	31.9	37.4	26.2	43.1	37.2	29.8	34.3	29	41	36	34.2	29	31.1	33.5	33.9	40.4	NA
Mothers' Index ranking	2016	Save the Children 2016	73	43	73	74	69	64	44	67	35	76	22	32	71	47	68	46	50	52	72	53	40	47	1-79 (Vic)	1-152 (NSW)
BreastScreen participation for women aged 50-74 years %	2015-2017	VWHA 2018	NA	47.1	52.7	62.5	55	63.9	61.3	56.2	18.6	51.2	57.2	59.8	59	53.9	55.3	54	52.4	54.8	60.4	29.9	51.8	0.9	53.7	NA
National Cervical Screening Program participation for women aged 20-69 %	2015-2016	PHIDU 2020	52.8	61.9	64.1	61.3	58.6	55.7	56.7	56	64.8	53.5	66.2	62.9	55.8	53.1	57.7	74.4	56.9	62	58.4	64.9	65.1	59.4	57.1	NA
% females diagnosed with anxiety or depression	2017	VPHS 2017	NA	30.3	53.3	31.6	39.2	37.9	41.1	35.7	38.2	50.1	34.2	28.9	40	38	42.6	39.9	51.3	31.7	38.8	40.9	43.2	36.6	33.6	NA
Potentially avoidable deaths age-standardised rate per 100,000 females	2013-2017	AIHW 2017	89.3	NA	NA	NA	86.8	NA	97.1	94.9	NA	NA	NA	NA	87.8	92.1	NA	NA	NA	NA	NA	NA	146.8	101.7	NA	71.8
Sexual health																										
Chlamydia rate per 10,000 females	2018	VWHA 2018	NA	12.97	15.14	4.03	20.51	10.43	17.56	20.21	10.03	117.1	20.17	18.63	20.23	12.22	19.58	11.2	26.22	5.84	25.26	13.37	25.79	28.72	20.8	NA
Chlamydia rate per 10,000 males	2018	VWHA 2018	NA	11.35	13.7	4.03	9.41	11.38	10.32	15.51	9.4	71.86	16.27	17.47	12.07	8.07	15.46	15.99	15.3	5.84	17.49	4.18	16.6	17.03	18.1	NA
Gonorrhoea rate per 10,000 females	2018	VWHA 2018	NA	0	1.8	0	1.89	0	1.36	1.72	1.57	3.33	1.08	2.91	1.11	1.47	0.86	1.33	1.82	2.43	1.21	0	0.88	2.29	2.1	NA
Gonorrhoea rate per 10,000 males	2018	VWHA 2018	NA	2.03	1.8	4.03	2.7	2.37	2.26	3.13	1.57	10.65	4.99	2.91	2.04	2.44	0.86	2.67	1.82	0	4.37	0	3.89	3.56	6.6	NA
Hepatitis B rate per 10,000 females	2018	VWHA 2018	NA	0	0	0	0	2.37	0.72	0.94	0	0	0.54	0	0.46	0.61	0.86	0	0	0	1.21	0	0	0.64	1	NA
Hepatitis B rate per 10,000 males	2018	VWHA 2018	NA	0	0	0	0.67	2.37	0.91	0.94	0	0	0.54	0	1.49	0.61	0	1.33	0	0	1.21	0	0	0.64	1	NA
HIV rate per 10,000 females	2018	VWHA 2018	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	NA
HIV rate per 10,000 males	2018	VWHA 2018	NA	0	1.8	0	0	0	0	0.39	0	0	0.54	0	0	0	0	0	0	0	0	0	0	0.64	0.4	NA

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Social determinants of health																										
Domestic/family/sexual violence event- Ambulance Victoria paramedic interventions, rate per 100,000	2016-2019	Ambulance Victoria 2019	NA	47.2	78.4	97.1	69.1	94.8	81	122.6	24.3	26.6	56.8	78.1	151.2	134.8	114.1	35.9	138.4	47.1	125.1	33	86	53	71.9	NA
Criminal incident rate per 100,000 population	2019	Crime Statistics Agency 2020	NA	3406.4	6679.7	4174.8	7442.3	5807.4	6948.1	9567.7	2566.4	4899.6	3379.8	3636.9	9964.7	6534.9	6144.8	4488.6	4080.3	4374.9	8622.7	2578.4	5974.3	6617.5	6111.5	NA
Family incident rate per 100,000 population	2019	Crime Statistics Agency 2020	NA	902.1	2551.1	854.7	2003.4	2104.8	1680.2	2379.2	796	1308.3	911.1	1140.6	3029.9	2341.1	1566.2	1059.4	1289.9	1397	2992.4	876	1863.1	2056	1281.3	NA
% single (or lone) person households	2016	ABS 2016	30.9	30.9	32.3	34.3	28.2	32.5	28	27.2	25.4	34.2	20.2	31.6	28.6	21.9	29	32.9	30.3	32.8	28.6	30.2	30.2	26.1	24.7	24.4
% Internet accessed from dwelling	2016	ABS 2016	79.2	77.5	74.4	68.8	74.6	69.7	80.2	77.4	80.8	68.4	86.8	78	74	82.5	73.1	79.1	77.4	73.8	71.2	74	75.6	81.4	83.7	83.2
% persons undertaking voluntary work for an organisation or group (persons aged 15 years and over)	2016	ABS 2016	22	30.5	26.5	40.4	24.7	31.3	23.1	20.6	31.3	31.7	26	28.9	20.7	18.6	24.6	29.8	28.7	29.1	24.2	36.1	25.7	21	19.2	19
% adult population feeling of life being worthwhile (low or medium)	2017	VPHS 2017	NA	10.6	16.2	9	13.5	27	14.2	19.1	17.2	17.8	14.4	9.1	19.6	18.7	15.1	19.4	22.9	10.8	18.3	8.8	14.8	17.5	16.7	NA
SEIFA Index of Relative Socio-Economic Disadvantage 1000	2016	ABS 2016	971	994	951	967	967	957	981	948	1016	942	1060	1015	935	997	951	995	996	974	947	992	983	977	1000	NA
SEIFA Index of Relative Socio-Economic Disadvantage Vic ranking (1-79)	2016	ABS 2016	NA	39	16	24	23	18	31	14	57	9	71	56	5	47	15	42	45	26	11	38	32	27	79	NA
Median weekly household income $	2016	ABS 2016	1185	1002	946	839	1081	908	1184	1163	1265	826	1638	1062	1064	1391	1014	1002	1071	962	1094	1043	1085	1273	1419	1438
Total weekly household income less than $1000 %	2016	ABS 2016	38.9	41.9	47.1	51.6	41.2	48.4	38.3	38.5	35.2	51.9	26.4	40.7	41.8	31.1	43.4	45.1	41.9	45.6	40	43.4	41.3	35.3	31.8	31.6
% of people who delayed medical consultation, unable to afford	2014	DHHS 2015	NA	16.9	17.1	17.6	16.3	16.5	16.1	16.1	16.5	18.4	11.6	16.7	17.2	16.1	16.5	15.5	15.8	16.3	16.8	17.6	16.2	12	11.1	NA
% of people who delayed purchasing prescribed medication, unable to afford	2014	DHHS 2015	NA	11.3	12.4	14.4	13.7	14.2	12.5	13.3	12.1	15.4	8.1	10.4	13.7	11.6	13.9	13.3	12.1	13.8	14	13.1	12.3	6.7	4.6	NA
% of population receiving disability support pension	2017	PHIDU 2020	7.6	6.3	10.2	10	8.1	9.8	8.4	8.4	6.2	13.3	4	5.6	9.2	6.2	9.1	8.6	7.7	8.7	7.9	8.5	8.1	7.9	4.9	5.3
% of population (65 years +) receiving aged pension	2017	PHIDU 2020	68.4	71.3	69.6	63.9	70	70.7	70	68.2	65.9	70.1	56.7	64.2	73	68.5	73	66.1	62.8	66.1	69.4	61.9	68	71.8	63.2	63.6
% population Health Care Card holders	2017	PHIDU 2020	9.2	7.9	10.5	10.8	9.7	9.9	9.9	10.3	6.9	11.2	6.2	6.6	10.8	7.7	9.7	9.7	7.5	8.4	9.1	8.3	9.1	8.4	7.9	7.3
% of population female sole parent pensioners	2017	PHIDU 2020	5.9	3.1	6.2	2.4	5.9	4.7	5.5	6	3.3	4.5	2.2	2.7	6.5	5	6.4	4	3.6	4.8	6.4	2.9	4.7	6.1	2.9	3.6
% of people receiving unemployment benefit	2019	PHIDU 2020	8	4.8	7.4	6.5	7	6.2	6.8	7.8	4.7	9.2	3.1	4.3	8.6	5.5	7.3	6.1	4.7	5.8	6.4	6.4	6.2	6.5	4.6	5.2
% completed Year 12 or equivalent- total population aged 15 years and over	2016	ABS 2016	43.8	42	37.7	33.5	33.2	28.1	43.5	39.7	43.6	30.7	54.6	44.4	36.5	41.9	32.4	49.9	40.8	38.8	36.5	35.4	40.7	42.1	57.3	54.7
% completed post Year 12 education- total population aged 15 years and over (pooled data)	2016	ABS 2016	66.9	57.8	61.8	53.2	55.8	48.9	65.7	63.8	58.5	55.6	66.1	58	62.4	60.1	55.8	69.7	56.6	57.8	58.4	53	60.7	63.1	72.7	70.8
% adult population fair or poor self-reported health	2017	VPHS 2017	NA	16.1	20.6	21.9	16.4	21.7	23.8	19.8	23	22.9	14.6	19.1	22.3	25.1	26.4	22.8	16	25.3	27	14.8	18	21.7	20.3	NA

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% adult population low or medium life satisfaction	2017	VPHS 2017	NA	16.5	17.4	20.6	18	29	25.2	22.5	22.2	25.4	19.7	11.3	21.3	23.8	18.8	25.5	29.4	25.1	23	13.7	15.2	20.9	20.5	NA
Estimated number of people with high, or very high, levels of psychological distress (based on K10 score) (ASR per 100)	2017-2018	PHIDU 2020	13.5	12.4	13.2	11.6	12.7	11.4	14	14.9	11.8	13.4	12.2	11.8	14.7	14.7	13.1	14.2	13.1	12.6	13	12	12.9	13.6	13.3	12.9
Homeless rate per 10,000 population	2016	ABS 2016	19.4	25.1	33.2	11.3	32.7	15.2	26.7	55.6	13.8	54.6	12.8	22.1	32.5	25.9	23.4	34.1	26.2	26.3	46.1	10	26.5	42.7	41.9	49.7
Low income households with mortgage stress %	2016	PHIDU 2020	7.6	12	11.6	8.7	10	11.9	8.5	8.4	9.2	10.9	7.8	12.7	9.3	9.9	9.9	12.2	12.7	10.6	9.2	9.2	9.5	7.5	10.2	9.3
Low income households with rental stress %	2016	PHIDU 2020	32	27.3	31.6	19	27.5	25.3	31.7	32.1	28.1	22	28.8	28.5	30.8	28	29.5	36.8	33.6	28.2	23.7	24.9	31.7	26	27.2	27.3
Estimated number of people aged over 18 who often had difficulty or cannot get places needed with transport, including housebound ASR per 100	2014	PHIDU 2020	3.9	3.6	3.4	3.6	3.8	3.6	3.9	4.5	3.5	3.8	3.3	3.9	4.4	3.9	3.8	4	3.6	3.7	4.4	3.4	3.6	4.1	4.2	4
Private dwellings with no motor vehicle %	2016	PHIDU 2020	7.9	3.8	6	5.5	4.8	5	5.5	5.6	3	4.5	2.5	3.3	6.5	3.5	4.9	4.9	3	3.8	6.2	2.8	5.2	5.4	7.9	7.5
Risk factors - General																										
% adult population obese	2017	VPHS 2017	NA	25.6	31	24.5	25.7	31.6	22.4	30.9	23.1	26.5	15.3	17.1	31.6	32.2	25.8	19.1	15.2	24.3	28.6	23.9	21.6	26.9	19.3	NA
% adult population overweight	2017	VPHS 2017	NA	58.8	61.3	48.5	55.4	64.2	60.3	65	51.6	50.1	55.6	57	57.9	62.7	59.4	48.9	45.1	59.1	49.8	59.6	60.8	61.4	50.8	NA
% adult population doctor diagnosed hypertension	2017	VPHS 2017	NA	17.2	34.9	31	26.5	37.9	25.4	31.2	25.4	24.1	22.8	20.2	26.5	28.6	28.2	25.7	26.8	32.6	27.3	20.9	22.4	28.8	25.4	NA
% adult population increased lifetime risk of alcohol-related harm	2017	VPHS 2017	NA	67.4	59.6	68.8	69.7	62.9	62.6	59.6	69.5	68.7	72.9	66.6	57.6	66.6	68.3	66.7	70.2	67	54.8	72.6	69.9	72.5	59.5	NA
% adult population increased risk of injury from a single occasion of drinking	2017	VPHS 2017	NA	53.6	46.6	44.9	52.9	47.7	48.2	42.4	50.7	57.2	55.6	54.3	47.6	49.9	51.5	45.8	44.3	48.1	38.3	56.3	49.8	54.6	43	NA
% adult population daily consumption of sugar sweetened soft drinks	2017	VPHS 2017	NA	7.5	19.3	4.9	18	17.7	10.2	12.5	11.7	25.6	7.5	15.1	16.1	21.7	21.6	10.4	18.7	19.3	15.1	13.4	12.4	13.9	10.1	NA
% adult population current (i.e. daily or occasional) smoker	2017	VPHS 2017	NA	22.1	17.8	13.2	15.9	21.8	14.1	16.7	16.3	26.9	14.9	21.2	18.5	23.7	24	20.3	18.1	15.6	23.2	14.4	9.1	16.2	16.7	NA
Hospital admissions per 10,000 population for Illicit drugs (any) use	2018-2019	AODStats 2020	NA	19.6	28.5	9.7	30.9	15.2	30.1	33.3	10.3	22.6	9.3	17.8	22.9	19.4	24.8	34.3	18.7	22.6	26	ND	23	13.5	29.7	NA
% adult population insufficiently active	2017	VPHS 2017	NA	45.3	54	41.2	38.1	34.1	39.1	46.1	41.6	43.1	40	39.9	40.6	39	47.3	38.5	46.2	56.1	38.6	30.9	47.9	38.4	44.1	NA
% adult population complied with fruit consumption guidelines	2017	VPHS 2017	NA	40.6	38.1	39.7	42.8	33.5	43.3	33.4	47.2	32.9	49.3	44.4	39.6	38.5	39.1	49.2	48.8	35.3	43.8	45.5	45.1	39.2	43.2	NA
% adult population complied with vegetable consumption guidelines	2017	VPHS 2017	NA	8.2	7.7	4.9	5.4	2.9	8.2	4.2	11.3	4.5	5	7.7	2.9	5.7	5.1	10.7	4.5	6.3	8.2	9.8	7.1	5.4	5.4	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Burden of disease - General																										
Total ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	21.34	35.55	29.04	49.44	39.97	32.79	40.39	12.81	29.22	23.52	31.6	29.87	33.97	33.64	25.5	30.25	30.08	42.02	11.43	27.25	17.5	29.57	NA
Chronic ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	11.19	16.51	14.67	28.72	25.49	16.69	23.06	7.32	13.82	11.27	13.99	12.26	18.8	17.93	11.97	15.41	15.27	24.16	7.38	12.4	10.26	14.81	NA
Acute ambulatory care sensitive conditions- hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	9.23	17.04	13	18.51	14.03	14.74	15.02	5.08	15.06	11.06	16.53	15.91	13.97	13.97	12.39	13.29	13.43	15.7	3.04	13.71	6.02	12.57	NA
Vaccine-preventable ambulatory care sensitive conditions- hosptial admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	1.12	2.19	1.37	2.44	0.73	1.47	2.59	0.41	0.57	1.01	1.09	2.08	1.34	2.05	1.36	1.79	1.6	2.45	1.17	1.29	1.41	2.45	NA
Pneumonia & influenza number of hospital admissions	2018-2019	VHISS 2020	NA	14	35	0	65	6	131	128	7	7	56	42	87	42	68	30	26	18	48	0	37	46	8942	NA
Pneumonia & influenza hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	0.96	2.05	0	1.6	0.5	1.08	1.83	0.31	0.57	1.09	1	1.4	1	1.81	1.17	1.53	1.33	1.99	0	1.08	1.1	1.36	NA
Pneumonia & influenza hospital admissions average bed days	2018-2019	VHISS 2020	NA	6.36	2.91	0	7.23	10	7.35	5.47	6	11.14	5.63	5.76	9.66	5.76	5.65	5.57	6.58	7.06	6.54	0	5.16	8.41	5.93	NA
Other vaccine-preventable conditions- hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	0	0	1.08	0.84	0	0.4	0.77	0	0	0.25	0.34	0.69	0.34	0.24	0.19	0.26	0.27	0.46	0	0.21	0.31	1.1	NA
GP attendances per 1,000 population	2014	DHHS 2015	NA	5871.1	5473	7281.1	6484	6397.1	5519.6	6607.6	5174.3	6182	5886.9	4572.1	6030.8	5810.5	6311.7	5249.1	6500	8309.2	6290.1	5509	4505.7	6070.8	5889	NA
Emergency department total presentations ASR per 100,000 population	2017-2018	PHIDU 2020	44558.8	22819.7	22302.3	19295.4	45855.4	19328.9	34980.8	37127.6	38201.9	25797.7	15397.8	11374.4	46876.7	22757.5	21647.8	13486.4	22089.5	20303.3	57268.1	22040.7	47851.6	54669.6	25888	30533.8
Emergency department presentations (non-urgent) ASR per 100,000 population	2017-2018	PHIDU 2020	5635.4	2179.7	2573.9	3269.8	6366.8	3269.2	2733.9	2046.6	4619.6	2201.5	886.6	728.6	7096.4	881.7	1545.1	777.4	1008.2	964.5	13326.7	2101.5	7332.6	6685.1	1994.5	2598.2

Child Health

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Child - Social determinants of health																										
Children aged 4 and 5 years old enrolled in a preschool program %	2018	PHIDU 2020	66.9	71.4	61.7	54.5	60.3	50.1	60	63.8	58.8	58.6	55.1	60	61.1	58	68	60	60.5	50	50.2	53	54.4	60.4	57.8	53.3
Government primary school average absence days per child	2018	VCAMS 2019	NA	17.3	15.3	13.5	16.3	16.4	15.4	17.6	13.8	14.6	15.2	15.4	16.8	17.4	16.5	17.7	16.5	15.2	15.7	16.8	14.9	16.4	15.3	NA
% of students in year 3 who met or exceeded the benchmarks for numeracy	2017	VCAMS 2019	NA	96.4	96.5	96.8	94.8	95.1	94.7	92.4	96.4	96.7	97.2	96.1	94.4	92.1	96.2	95.5	97.9	95	92.6	93.8	92.6	92.8	96	NA
% of students in year 5 who met or exceeded the benchmarks for numeracy	2017	VCAMS 2019	NA	97.6	92.3	96.8	94.2	99	93.7	93.4	96.8	97.2	98.1	96.8	96	95.6	94.2	97.4	97.9	97.4	93.6	96.6	92.2	92.5	96	NA
% of students in year 3 who met or exceeded the benchmarks for literacy	2017	VCAMS 2019	NA	95	89.6	96.8	93.4	95	93.9	88.9	95.2	95	97.5	94.1	93.3	92.1	92.7	94.4	95.6	91.9	89.2	95.4	91.2	92	95.8	NA
% of students in year 5 who met or exceeded the benchmarks for literacy	2017	VCAMS 2019	NA	96.9	91.6	93.6	92.5	95.9	92.2	92.1	94.9	94.3	97.6	95.7	93.4	93.9	93.4	95.9	97.1	97.5	91.7	93.1	91.4	91.6	95.2	NA
Children developmentally vulnerable on one or more domains %	2018	PHIDU 2020	26	21.6	23.5	30.8	22.4	12.5	22.5	30.8	27.8	23.9	16.1	9.8	23.3	18.9	21	28.5	17.1	15.5	27	24.1	12.7	23.1	19.9	21.7
Children developmentally vulnerable on two or more domains %	2018	PHIDU 2020	15	12.8	14.3	17.3	14	7.3	12.5	19.4	17.5	16.4	6.4	4.9	13	9.6	10.2	15.2	8.1	4.8	13.4	12.1	4.3	11.1	10.1	11
Children developmentally vulnerable physical health and wellbeing domain %	2018	PHIDU 2020	12.5	12.8	12.6	21.2	11.8	5.2	9.3	16.5	17	16.4	6.9	6.1	10.9	6.4	10.5	16.6	9.8	3.6	9.5	12.1	4	8.2	8.2	9.6
Children developmentally vulnerable social competence domain %	2018	PHIDU 2020	15.3	12	11.8	13.5	12.6	5.2	9.8	15.4	11.3	9	6.7	3.7	8.7	8.1	9.2	15.2	6.5	7.1	14	12.1	4.3	9	8.8	9.8
Children developmentally vulnerable emotional maturity domain %	2018	PHIDU 2020	9.5	9.6	11.8	9.6	9.6	3.1	10.7	14.5	10.8	9	7.1	4.9	10.6	8	6.9	14.6	7.3	6	9.3	10.3	6.5	11.1	8.1	8.4
Children developmentally vulnerable language and cognitive skills domain %	2018	PHIDU 2020	9.1	9.6	6.7	5.8	8.9	7.3	7.9	13.5	9.3	11.9	3.3	2.4	10.5	7.8	6.7	7.3	5.7	7.1	7.6	6.9	3.7	8	6.4	6.6

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Children developmentally vulnerable communication skills and general knowledge domain %	2018	PHIDU 2020	9.9	7.2	6.7	11.5	8	4.2	7.9	15	10.8	13.4	3.6	0	8	5.1	8.3	8.6	3.3	0	7.1	5.2	2.5	6	7.4	8.2
Children with emotional or behaviour difficulties %	2018	VCAMS 2019	NA	4	10.2	11.1	10	8.8	7.8	8.2	5.8	5.9	5.8	NP	9.4	10.8	9.6	7.5	7.2	11.6	6.7	9.3	8.8	10.8	5.6	NA
Children who report being bullied years 5 and 6 %	2018	VCAMS 2019	NA	17	26.7	11.9	17.9	12.5	20.6	17.8	15	39.6	14	10.8	19	26.2	14.5	17.7	10	16.7	20.1	15.2	15.8	22	15.9	NA
Children who report being bullied years 7-9 %	2018	VCAMS 2019	NA	17.2	34.9	14.5	25.9	24.6	21.1	22.7	23.7	24	13.8	21.9	19.5	27.5	22.4	28	20.9	33.8	29	22.8	25.6	28.4	17.5	NA
Youth - Burden of disease																										
Deaths from all causes, aged 15-24 years, annual average ASR per 100,000	2013-2017	PHIDU 2020	46.9	NP	NP	NP	71.1	NP	31.9	55	85.5	53.5	NP	NP	42.8	32.2	59	NP	NP	NP	53.2	NP	37.2	39.9	29	35.8
Persons who have need for assistance with core activities for daily living (0-19 years) %	2016	ABS 2016	3	2	4	1.6	2.9	2.8	3.7	3.3	2.1	1.6	2.3	1.3	3.3	2.9	3.2	2.1	2.4	2.1	2.4	2.7	2.6	3.6	2.5	NA
Youth - Social determinants of health																										
Full-time participation in secondary school education at age 16 %	2016	PHIDU 2020	83.3	81.5	80.8	95.2	83.3	87.9	81.2	82.4	87.6	74.2	85.3	91.5	81.4	81.4	80.3	86.5	74.5	75.7	77.9	85.2	84	83.4	86.1	84.1
Government secondary school average absence days per child	2018	VCAMS 2019	NA	23.6	26.3	16.7	24.3	22.9	22.8	26.3	23.4	22.1	31.4	18	28.4	24.8	24.5	15.6	21.6	24.9	21.1	23.5	22.9	19	19.2	NA
Young people aged 19 years who have attained Year 12 or equivalent %	2014	VCAMS 2019	NA	81.6	69.3	96.2	78.6	83.9	80.4	77.9	77.7	77.7	84.8	81	88.1	77.4	87.4	85.8	73.3	84.8	76	81.6	75.9	90.1	88.2	NA
% of students in year 7 who met or exceeded the benchmarks for numeracy	2017	VCAMS 2019	NA	99.2	96.5	98.7	94.9	95.3	94.6	93.8	95.6	98.5	96.5	100	93.5	98.2	95.5	95	95.7	96.6	93.7	96.6	93.5	92.6	96	NA
% of students in year 9 who met or exceeded the benchmarks for numeracy	2017	VCAMS 2019	NA	99	97.6	100	94.7	98.9	94.6	95.5	100	100	93.9	99.5	95.1	97.5	95.6	97.2	96.3	98	93.6	97.5	92.6	94.8	95.5	NA
% of students in year 7 who met or exceeded the benchmarks for literacy	2017	VCAMS 2019	NA	95.9	91.2	98.7	92	97.6	93.4	90	90	97.2	94.8	100	90.1	95.4	90.6	93.2	94.3	88.5	89.8	90.7	90.6	89.2	94.9	NA
% of students in year 9 who met or exceeded the benchmarks for literacy	2017	VCAMS 2019	NA	95.9	94.4	90.1	88.6	93.5	89.6	88.6	90.2	92.1	89.4	99.2	88	91.6	86.7	91.9	89	86.3	86.2	93.4	89.4	88.4	92	NA
% young people learning or earning at ages 15 to 24	2016	PHIDU 2020	81.7	86.9	81	87.4	82.4	83.8	83.3	80.7	87.3	75	87.4	87.5	78.8	82.6	82.9	80.9	81.7	82	79	85.2	83.6	84.1	86.2	84.3
% young people (16-24 years) receiving an unemployment benefit	2017	PHIDU 2020	6.6	2.5	4.6	4.3	4.7	2.6	4.9	5.8	3.8	6.3	1.9	1.2	6.8	3.4	3.9	3.7	1.9	2.8	4.4	3.4	4.4	4.9	2.5	3.4

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Family - Social determinants of health																										
Child protection substantiations per 1,000 eligible population	2014	DHHS 2015	NA	12.2	23.2	6	11.5	13.6	12.3	15.4	10.6	6.9	4	6.2	17.6	11.1	10.8	9.3	9.9	6.1	20.7	10.3	19.1	19.9	11.4	NA
Youth/child out of home care 0-17 years rate per 1,000 children	2011	VCAMS 2019	NA	2.4	14.4	8.4	6.8	7.2	8.8	7.7	4.4	8.9	4.3	NA	7.7	5.2	5.8	3.6	2.1	NA	10.8	4.6	8.8	8.1	4.6	NA
Family violence affected family member (AFM) rate/100,000 population	2018-2019	Crime Statistics Agency 2019	NA	570.3	951.7	846.6	1345.6	1102.2	1228.8	2199.8	524	796.9	644	790.2	2040.5	1586	1059.4	702.4	519.3	1014.5	2122.8	691.3	1253.4	1483.2	970.8	NA
Domestic/family/sexual violence event- Ambulance Victoria paramedic interventions, rate per 100,000	2016-2019	Ambulance Victoria 2019	NA	47.2	78.4	97.1	69.1	94.8	81	122.6	24.3	26.6	56.8	78.1	151.2	134.8	114.1	35.9	138.4	47.1	125.1	33	86	53	71.9	NA
Criminal incident rate per 100,000 population	YE March 2020	Crime Statistics Agency 2020	NA	3406.4	6679.7	4174.8	7442.3	5807.4	6948.1	9567.7	2566.4	4899.6	3379.8	3636.9	9964.7	6534.9	6144.8	4488.6	4080.3	4374.9	8622.7	2578.4	5974.3	6617.5	6111.5	NA
Family incident rate per 100,000 population	YE March 2020	Crime Statistics Agency 2020	NA	902.1	2551.1	854.7	2003.4	2104.8	1680.2	2379.2	796	1308.3	911.1	1140.6	3029.9	2341.1	1566.2	1059.4	1289.9	1397	2992.4	876	1863.1	2056	1281.3	NA
SEIFA Index of Relative Socio-Economic Disadvantage 1000	2016	ABS 2016	971	994	951	967	967	957	981	948	1016	942	1060	1015	935	997	951	995	996	974	947	992	983	977	1000	NA
SEIFA Index of Relative Socio-Economic Disadvantage Vic ranking (1-79)	2016	ABS 2016	NA	39	16	24	23	18	31	14	57	9	71	56	5	47	15	42	45	26	11	38	32	27	79	NA
Median weekly household income $	2016	ABS 2016	1185	1002	946	839	1081	908	1184	1163	1265	826	1638	1062	1064	1391	1014	1002	1071	962	1094	1043	1085	1273	1419	1438
Total weekly household income less than $1000 %	2016	ABS 2016	38.9	41.9	47.1	51.6	41.2	48.4	38.3	38.5	35.2	51.9	26.4	40.7	41.8	31.1	43.4	45.1	41.9	45.6	40	43.4	41.3	35.3	31.8	31.6
% of population female sole parent pensioners	2017	PHIDU 2020	5.9	3.1	6.2	2.4	5.9	4.7	5.5	6	3.3	4.5	2.2	2.7	6.5	5	6.4	4	3.6	4.8	6.4	2.9	4.7	6.1	2.9	3.6
% children in low income, welfare-dependent families	2017	PHIDU 2020	27.3	19.3	33.1	21.6	26.3	24.6	25.5	33	15.3	28.4	11.1	15.7	31.5	22.6	28.6	24.5	21.7	25.1	27.6	16.9	22.5	26	19.3	20.9
% population Health Care Card holders	2017	PHIDU 2020	9.2	7.9	10.5	10.8	9.7	9.9	9.9	10.3	6.9	11.2	6.2	6.6	10.8	7.7	9.7	9.7	7.5	8.4	9.1	8.3	9.1	8.4	7.9	7.3
Low income households with mortgage stress %	2016	PHIDU 2020	7.6	12	11.6	8.7	10	11.9	8.5	8.4	9.2	10.9	7.8	12.7	9.3	9.9	9.9	12.2	12.7	10.6	9.2	9.2	9.5	7.5	10.2	9.3
Low income households with rental stress %	2016	PHIDU 2020	32	27.3	31.6	19	27.5	25.3	31.7	32.1	28.1	22	28.8	28.5	30.8	28	29.5	36.8	33.6	28.2	23.7	24.9	31.7	26	27.2	27.3
% one parent family	2016	ABS 2016	11.5	7.8	11.5	7.6	10.5	8.1	12.4	11.9	9.1	8.2	8.4	7.3	12.1	11.7	10.9	9.9	7.9	9.8	9.6	7.1	10.4	13	NA	10.2
% couple family with children	2016	ABS 2016	38.8	32.2	32.9	36.5	40.1	38.6	40.9	42.9	42.6	34.2	52	33.8	38.8	47.6	38.2	34.4	38	32.8	38.7	37.2	40	41.7	NA	45.9
% children in families where the mother has low educational attainment	2016	PHIDU 2020	20.8	12	19.8	14.7	18.7	17.7	19.2	21.2	13.2	18	9.1	6.9	22.3	17.1	18.4	12.5	15.7	15.6	17.8	14.5	16.1	21.3	12.7	17
% jobless families with children aged less than 15 years	2016	PHIDU 2020	14.5	8.7	18.6	13.1	13	13.3	14.3	17.4	7.8	15.2	5.4	7.5	17.5	12.4	14.5	12.4	10.7	13.5	15	8.4	12.5	13.9	11	11.9

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
% mothers who reported smoking during pregnancy	2012-2014	PHIDU 2020	NA	15.4	23	26.7	27.7	26.7	39.8	23.6	8.6	41.3	12	13.3	25	15.4	22.2	25.2	16.4	22.2	22.2	12.2	17	18.2	15	10.8
Average number of people per household	2016	ABS 2016	2.3	2.2	2.2	2.2	2.4	2.2	2.4	2.5	2.4	2.2	2.7	2.3	2.4	2.7	2.4	2.2	2.3	2.2	2.4	2.3	2.3	2.5	2.6	2.6
Private dwellings with no motor vehicle %	2016	PHIDU 2020	7.9	3.8	6	5.5	4.8	5	5.5	5.6	3	4.5	2.5	3.3	6.5	3.5	4.9	4.9	3	3.8	6.2	2.8	5.2	5.4	7.9	7.5
Child - Risk factors																										
Estimated number of children 2-17 years overweight ASR per 100 persons	2017-2018	PHIDU 2020	16.5	15.9	16.8	17	17.5	17.2	16.4	19.8	16.3	16.7	16.3	16.1	17.5	15.8	21	16.2	17.7	15.7	17.1	16.3	16.2	16.1	16.4	16.7
Estimated number of children 2-17 years obese ASR per 100 persons	2017-2018	PHIDU 2020	11.2	10.7	11	10.7	10.8	10.7	10.7	10.7	10.9	11.1	10.8	10.4	10.7	9.9	10.8	10.6	11.7	10.2	10.7	10.9	10.6	10.7	8	8.2
% low birth weight babies	2012-2014	PHIDU 2020	NP	6.4	8.3	4.8	5.9	4.8	6.7	5.7	7.3	4.1	5.1	3.6	6.5	7.2	5.9	5.8	5.5	4.9	6	7	7.5	7.2	6.3	6.1
% fully breastfed babies at 6 months	2014-2015	PHIDU 2020	24.7	21	18.6	32.8	16.5	32.8	22.8	17.9	23.5	35.9	22.1	19.3	20.5	19.5	19.8	22.4	24.9	20.7	19	22.5	22.5	14.7	23	24.7
Children fully immunised at 1 year of age %	2018	PHIDU 2020	95.5	94.7	94	98.2	95.5	96.9	94.5	93.6	92	91.1	94.5	92.6	93.5	94.9	93.1	87.8	92.7	89.9	92.9	96.6	93.9	96.2	94.3	94
Children fully immunised at 2 years of age %	2018	PHIDU 2020	92.7	84.8	89.3	96.4	92.8	96.5	91.9	91.5	91.7	87.1	92.9	84	91.7	93.1	92.7	91	95.7	88.1	89	86	91.7	94.9	91.2	90.7
Children fully immunised at 5 years of age %	2018	PHIDU 2020	95.7	97.7	97.4	100	97	99.1	96.4	96.7	96.7	97.1	97.2	94.4	94.9	97.7	96.2	92.6	95.8	92.6	96.6	90.3	96.9	97	95.5	94.7
Children attending the 3.5 year ages and stages visit %	2017	VCAMS 2018	NA	106.9	69.6	67.2	68.9	76.7	73.4	77.4	64	76	73	82.3	67.4	68.2	68.7	87.8	86.8	87.2	64.5	70.3	68	73.1	62.9	NA
Youth - Risk factors																										
Estimated number of children 2-17 years overweight ASR per 100 persons	2017-2018	PHIDU 2020	16.5	15.9	16.8	17	17.5	17.2	16.4	19.8	16.3	16.7	16.3	16.1	17.5	15.8	21	16.2	17.7	15.7	17.1	16.3	16.2	16.1	16.4	16.7
Estimated number of children 2-17 years obese ASR rate per 100 persons	2017-2018	PHIDU 2020	11.2	10.7	11	10.7	10.8	10.7	10.7	10.7	10.9	11.1	10.8	10.4	10.7	9.9	10.8	10.6	11.7	10.2	10.7	10.9	10.6	10.7	8	8.2
HPV 3 dose cover-age for females aged 15 years %	2017	PHIDU 2020	74.1	79.6	78.8	105.8	97	93.2	79.8	83	95.6	80.7	74.2	38	84.5	72.8	95.8	83.1	90.9	90.2	81.1	82.2	86	86.1	80	80.5
HPV 3 dose cover-age for males aged 15 years %	2017	PHIDU 2020	75.5	79.1	62.1	105.7	86.7	98.6	73.9	77.6	83.2	81.7	75	35	71.4	78.4	79	81.5	98.7	79.5	87.1	97.8	73	81.7	76.5	76.1
Child - Burden of disease																										
Average annual infant mortailty rate per 1,000 live births	2013-2017	PHIDU 2020	NP	NP	0	NP	2.8	0	3.2	3.3	NP	NP	2.4	NP	4.4	2.6	NP	NP	0	0	5.3	NP	NP	3.6	2.8	3.3
Persons who have need for assistance with core activities for daily living (0-19 years) %	2016	ABS 2016	3	2	4	1.6	2.9	2.8	3.7	3.3	2.1	1.6	2.3	1.3	3.3	2.9	3.2	2.1	2.4	2.1	2.4	2.7	2.6	3.6	2.5	NA
Children (0-5 years) presenting with at least one decayed, missing or filled (baby) or permanent (adult) tooth, attend-ing public dental services %	2017-2019	DHSV 2020	NA	NP	NP	NP	35	NP	29.8	38.5	24.3	32.3	40.3	NP	26.7	25.5	40.2	26.1	NP	29.1	22.3	NP	18.2	18.3	26.3	NA

Alcohol and Other Drugs

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Alcohol- Social determinants of health																										
Domestic/family/sexual violence event- Ambulance Victoria paramedic interventions, rate per 100,000	2016-2019	Ambulance Victoria 2019	NA	47.2	78.4	97.1	69.1	94.8	81	122.6	24.3	26.6	56.8	78.1	151.2	134.8	114.1	35.9	138.4	47.1	125.1	33	86	53	71.9	NA
Criminal incident rate per 100,000 population	2019	Crime Statistics Agency 2020	NA	3406.4	6679.7	4174.8	7442.3	5807.4	6948.1	9567.7	2566.4	4899.6	3379.8	3636.9	9964.7	6534.9	6144.8	4488.6	4080.3	4374.9	8622.7	2578.4	5974.3	6617.5	6111.5	NA
Family incident rate per 100,000 population	2019	Crime Statistics Agency 2020	NA	902.1	2551.1	854.7	2003.4	2104.8	1680.2	2379.2	796	1308.3	911.1	1140.6	3029.9	2341.1	1566.2	1059.4	1289.9	1397	2992.4	876	1863.1	2056	1281.3	NA
Definite or possible alcohol family violence incidents per 10,000 population	2017-2018	AODStats 2020	NA	24.5	36.5	16.1	32.2	29.3	22.6	41.8	18.4	24	13.8	26.2	87.6	34.3	34.1	20.7	22.5	35.3	87.3	34.8	32.9	32.1	17.3	NA
Assaults during high alcohol hours per 10,000 population	2017-2018	AODStats 2020	NA	16.6	17.9	9.7	10.9	10.4	12.2	13	8.6	8	3.5	13.6	23.6	14.7	10.1	4.2	11.2	11.4	18.7	13.3	12.1	8.8	10	NA
Assaults during medium alcohol hours per 10,000 population	2017-2018	AODStats 2020	NA	12.7	22.9	NA	10.6	9.5	14.6	16.3	3.7	16	5.8	11.4	31.6	16.3	14.2	5.2	8.4	13.4	21.6	13.3	14.6	14.2	13.1	NA
Assaults during low alcohol hours per 10,000 population	2017-2018	AODStats 2020	NA	21.4	58	27.4	45.2	45.4	42	62.7	11	22.7	18.6	29.6	66.9	59	30.4	17.6	24.6	30.5	88.7	13.3	43	46.6	37.1	NA
Alcohol- Risk factors																										
% adult population increased lifetime risk of alcohol-related harm	2017	VPHS 2017	NA	67.4	59.6	68.8	69.7	62.9	62.6	59.6	69.5	68.7	72.9	66.6	57.6	66.6	68.3	66.7	70.2	67	54.8	72.6	69.9	72.5	59.5	NA
% adult population increased risk of injury from a single occasion of drinking	2017	VPHS 2017	NA	53.6	46.6	44.9	52.9	47.7	48.2	42.4	50.7	57.2	55.6	54.3	47.6	49.9	51.5	45.8	44.3	48.1	38.3	56.3	49.8	54.6	43	NA
Smoking- Risk factors																										
% adult population current (i.e. daily or occasional) smokers	2017	VPHS 2017	NA	22.1	17.8	13.2	15.9	21.8	14.1	16.7	16.3	26.9	14.9	21.2	18.5	23.7	24	20.3	18.1	15.6	23.2	14.4	9.1	16.2	16.7	NA
% adult male population current (i.e. daily or occasional) smokers	2017	VPHS 2017	NA	31.4	13.2	18.2	11.6	25.4	19.9	19.6	20.5	24.7	14.4	31.5	20.1	22.8	28.5	20.2	25.6	12.4	25.7	16.5	5.8	16.7	20.3	NA
% adult female population current (i.e. daily or occasional) smokers	2017	VPHS 2017	NA	15.7	22.5	7	20.3	17.7	9.2	13.6	11.9	29	14.7	8.7	17	23.3	18.1	20.5	11.9	18.6	21.4	12	12.2	15.3	13.2	NA
% mothers who reported smoking during pregnancy	2012-2014	PHIDU 2020	NA	15.4	23	26.7	27.7	26.7	39.8	23.6	8.6	41.3	12	13.3	25	15.4	22.2	25.2	16.4	22.2	22.2	12.2	17	18.2	15	10.8

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Alcohol- Burden of disease																										
Hospital admissions per 10,000 population	2018-2019	AODStats 2020	NA	36.9	74.2	58.2	47.1	52.2	51	40.2	35.8	57.2	31.4	55.7	38.6	42.9	56	54.8	52.5	78.9	66.5	29.7	44.7	27.5	56.5	NA
Alcohol intoxication (w or w/o any substance) ambulance attendances per 100,000 population	2018-2019	Ambo-AODStats 2019	NA	329.9	741.6	242.6	518.7	341.3	513.6	498.4	194.1	399.3	236.9	501.2	545.8	417.6	446.3	322.9	607.8	488.5	385.4	165.2	508.8	318.6	451.2	NA
Alcohol only (intoxication) ambulance attendances per 100,000 population	2018-2019	Ambo-AODStats 2019	NA	290.7	641.8	242.6	452.2	256	401.6	418.1	169.8	332.8	194.4	434.4	473.8	356.7	352.4	271.6	511.1	394.6	337.2	115.6	371.3	253.5	369.5	NA
Serious road injuries during high alcohol hours per 10,000 population	2017-2018	AODStats 2020	NA	4	5	8.1	2.4	13.3	3	2.1	8.6	9.3	2.9	9.1	1.1	5.8	4.4	NA	7.7	5.7	2.9	9.9	NA	1.7	2.4	NA
Alcohol treatment episodes of care per 10,000 population	2018-2019	AODStats 2020	NA	20.4	29.2	21	13	57.8	21.8	49.4	13.3	0	14.4	8.9	63.8	33.2	27.2	12.3	26.3	50.7	38.5	9.9	34.7	25.3	25.3	NA
Deaths per 10,000 population	2017	AODStats 2020	NA	NA	NA	NA	2.4	NA	1.7	1.7	NA	NA	1.5	NA	1.8	1.4	1.7	NA	NA	NA	NA	NA	2.4	NA	1.3	NA
Illicit drugs - Burden of disease																										
Hospital admissions per 10,000 population for Illicit drugs (any) use	2018-2019	AODStats 2020	NA	19.6	28.5	9.7	30.9	15.2	30.1	33.3	10.3	22.6	9.3	17.8	22.9	19.4	24.8	34.3	18.7	22.6	26	NA	23	13.5	29.7	NA
Ambulance attendances per 100,000 population	2018-2019	Ambo-AODStats 2019	NA	39.3	121.2	NA	106.4	NA	199.1	186.3	NA	66.6	66.8	122.5	167.5	169.3	147.7	117.9	96.7	65.8	96.3	NA	171.9	154.5	208.3	NA
Treatment episodes of care per 10,000 population	2018-2019	AODStats 2020	NA	10.2	30	9.7	19.7	37.9	44.3	105	7.9	0	20.3	6.7	83	50.6	33.6	17.4	22.1	31	38.1	16.5	37.8	24.4	37.8	NA
Deaths per 10,000 population	2017	AODStats 2020	NA	0	0	0	0	0	NA	0	0	0	NA	NA	0	0	0	0	0	0	NA	0	NA	0	0.1	NA
Accidental poisoning by and exposure to noxious substances standardised rate per 100, 000 persons	2012-2016	VHISS 2020	NA	NA	NA	NA	6.04	NA	6.92	8.28	NA	NA	NA	NA	5.01	7.16	6.95	NA	12.83	NA	NA	NA	7.48	6.62	5.05	NA
Pharmaceutical drugs - Burden of disease																										
Hospital admissions per 10,000 population	2018-2019	AODStats 2020	NA	8.6	27.1	8.1	12.8	19	20.7	14.1	9.1	12	10.9	12.3	12.6	14.2	15.8	19.5	11.7	11.3	12	NA	29.2	5.6	17.2	NA
Ambulance attendances per 100,000 population	2018-2019	Ambo-AODStats 2019	NA	133.5	249.6	145.5	154.3	151.7	268	268.2	91	239.6	115.4	155.9	209	180.6	221.5	174.2	234.8	122.1	134.9	115.6	261.3	236.6	186.9	NA
Treatment episodes of care per 10,000 population	2018-2019	AODStats 2020	NA	NA	3.6	NA	NA	NA	7.8	6.2	NA	0	1	NA	24.5	2.7	NA	2.6	NA	0	3.4	0	2.4	2.7	2.7	NA

Mental Health

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Social determinants of health																										
% single (or lone) person households	2016	ABS 2016	30.9	30.9	32.3	34.3	28.2	32.5	28	27.2	25.4	34.2	20.2	31.6	28.6	21.9	29	32.9	30.3	32.8	28.6	30.2	30.2	26.1	24.7	24.4
% Internet accessed from dwelling	2016	ABS 2016	79.2	77.5	74.4	68.8	74.6	69.7	80.2	77.4	80.8	68.4	86.8	78	74	82.5	73.1	79.1	77.4	73.8	71.2	74	75.6	81.4	83.7	83.2
% persons undertaking voluntary work for an organisation or group (persons aged 15 years and over)	2016	ABS 2016	22	30.5	26.5	40.4	24.7	31.3	23.1	20.6	31.3	31.7	26	28.9	20.7	18.6	24.6	29.8	28.7	29.1	24.2	36.1	25.7	21	19.2	19
% adult population (low or medium) feeling of life being worthwhile	2017	VPHS 2017	NA	10.6	16.2	9	13.5	27	14.2	19.1	17.2	17.8	14.4	9.1	19.6	18.7	15.1	19.4	22.9	10.8	18.3	8.8	14.8	17.5	16.7	NA
% adult population fair or poor self-reported health	2017	VPHS 2017	NA	16.1	20.6	21.9	16.4	21.7	23.8	19.8	23	22.9	14.6	19.1	22.3	25.1	26.4	22.8	16	25.3	27	14.8	18	21.7	20.3	NA
% adult population (low or medium) life satisfaction	2017	VPHS 2017	NA	16.5	17.4	20.6	18	29	25.2	22.5	22.2	25.4	19.7	11.3	21.3	23.8	18.8	25.5	29.4	25.1	23	13.7	15.2	20.9	20.5	NA
Burden of disease																										
% adult population doctor diagnosed anxiety or depression	2017	VPHS 2017	NA	23.8	37.2	33.6	30.3	32.3	35.9	34.4	36.6	38.5	29.5	20.2	34.9	32.9	34.6	35.6	38.1	37.1	33.9	29	31.2	32	27.4	NA
Estimated number of people with high, or very high, levels of psychological distress (based on K10 score) (ASR per 100)	2017-2018	PHIDU 2020	13.5	12.4	13.2	11.6	12.7	11.4	14	14.9	11.8	13.4	12.2	11.8	14.7	14.7	13.1	14.2	13.1	12.6	13	12	12.9	13.6	13.3	12.9
Estimated number of people with mental and behavioural problems ASR per 100 population	2017-2018	PHIDU 2020	20	21.8	23.8	20.6	21.6	20.4	23.4	23.5	22.2	20.2	19.3	18.9	21.8	22.2	21.6	22.2	22.3	22.8	20.5	21.4	23.6	21.5	19.7	20
Estimated number of people with mood (affective) disorders ASR per 100 population	2014-2015	PHIDU 2020	9.1	9.7	10	9.9	10	9.9	10.2	10.3	9.1	10.7	7.6	9.4	10.9	9.9	10.1	9.3	9.8	10.1	10.3	9.4	9.8	10.1	9.5	9.3
Admissions by principal diagnosis- mental health related conditions- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	1440.4	1135.8	1004.5	1210.2	1124	1216.7	1379.8	1327.2	1088.3	1238	825.4	947	1116.8	1084.2	1148.1	986.6	1098.3	990	1084.6	1074.9	945	1512	1633.4	NA
Admissions by principal diagnosis- mood affective disorders- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	613.1	488.1	185.7	NA	289.9	465.9	475.2	471.6	382.5	640.4	255.7	266.5	234.3	348.8	406.9	NA	398.3	427.8	402.7	391.4	205.2	834.5	612.6	NA
Deaths from suicide and self-inflicted injuries, persons aged 0-74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	16.2	10.7	27.8	22.5	13.4	NA	12.5	11.7	21.9	NA	15.1	15.7	17.3	14	11	17.6	NA	11.2	12.9	NA	11.2	16.3	10.1	12.2
Suicide and self-inflicted injuries, standardised rate per 100,000 persons	2012-2016	VHISS 2020	NA	NA	27.53	30.27	13.34	NA	13.52	14.64	22.69	NA	19.17	NA	15.64	12.67	13.47	18.09	13.61	12.61	12.22	NA	10.81	15.7	10.33	NA
Registered mental health clients per 1,000 population	2014	DHHS 2015	NA	19.1	26.3	11.8	13.8	14.9	18.8	19.4	22.1	14.3	9.2	13.5	24	15	15.4	16.8	15.1	14.6	17.9	15.4	23.7	21.9	11.9	NA
% adult population sought help for a mental health related problem	2017	VPHS 2017	NA	14.5	18.5	15.4	15.1	15.2	19.6	17.2	21.4	20.9	15	12.4	20.6	17.8	17.7	21.8	17.2	19.8	22.2	18.4	16.8	14.5	17.6	NA

Aged Care

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Demographics																										
Estimated resident population 65-69 years %	2018	ABS 2018	5.2	7.1	7.9	7.9	6.5	8.2	5.5	5.4	6.9	8.5	5.8	8	5.6	4.9	7.4	8.2	7.8	9	5.7	8.1	6.7	5	4.6	4.8
Estimated resident population 70-74 years %	2018	ABS 2018	4.5	6.8	6.4	6.2	5.8	7.1	4.4	4.4	6.1	7.1	4.8	7.4	4.5	3.9	6.6	6.6	7.1	7.5	4.4	7.1	5.4	3.8	3.9	4.1
Estimated resident population 75-79 years %	2018	ABS 2018	3.3	4.2	5	5.1	4.4	5.7	3.2	3.2	3.4	4.9	2.9	4.6	3.3	2.5	4.7	4.3	3.9	4.7	3.5	5	4.2	2.8	2.7	2.8
Estimated resident population 80-84 years %	2018	ABS 2018	2.3	2.9	3.2	3.7	3	3.6	2.2	2.3	2.2	3.5	1.7	2.5	2.4	1.5	3.3	2.7	2.3	3.4	2.5	2.7	2.9	1.6	2	1.9
Estimated resident population 85+ years %	2018	ABS 2018	2.5	2.9	3.4	4.8	3.1	3.4	2.3	2.3	2	3.8	1.6	2	2.6	1.5	3	3	2	3.4	2.7	3.2	3.4	1.9	2.1	2
Social determinants of health																										
% single (or lone) person households, 65+ years	2016	ABS 2016	27.5	25.1	26.7	28.2	23.7	26.2	25.9	24.5	22.2	27.5	19.8	25.8	25.5	21.3	24.4	28.6	24.8	27	26.2	24.7	26.4	26	23.5	NA
% aged population (65+ years) receiving aged pension	2017	PHIDU 2020	68.4	71.3	69.6	63.9	70	70.7	70	68.2	65.9	70.1	56.7	64.2	73	68.5	73	66.1	62.8	66.1	69.4	61.9	68	71.8	63.2	63.6
% persons undertaking voluntary work for an organisation or group, 65+ years	2016	ABS 2016	21.1	31.7	28.1	30.9	26.1	31.3	23.2	21.7	31.7	26.6	25.4	30	18.4	20.3	23.4	30.9	30.2	28.9	23.7	35.3	24.6	22	18.2	18.2
Residential aged care places per 1,000 population aged 70 years and over	2016	PHIDU 2020	103.7	91.6	75.9	117.9	98.2	74.9	87.7	106.3	94.7	73.5	80.7	64.1	92.4	69.2	77.1	73.6	66.5	71.3	79.3	111	85.8	84.1	85.1	82.6
Risk factors																										
% adult population obese	2017	VPHS 2017	NA	25.6	31	24.5	25.7	31.6	22.4	30.9	23.1	26.5	15.3	17.1	31.6	32.2	25.8	19.1	15.2	24.3	28.6	23.9	21.6	26.9	19.3	NA
% adult population overweight	2017	VPHS 2017	NA	58.8	61.3	48.5	55.4	64.2	60.3	65	51.6	50.1	55.6	57	57.9	62.7	59.4	48.9	45.1	59.1	49.8	59.6	60.8	61.4	50.8	NA
% adult population doctor diagnosed hypertension	2017	VPHS 2017	NA	17.2	34.9	31	26.5	37.9	25.4	31.2	25.4	24.1	22.8	20.2	26.5	28.6	28.2	25.7	26.8	32.6	27.3	20.9	22.4	28.8	25.4	NA
% adult population increased lifetime risk of alcohol-related harm	2017	VPHS 2017	NA	67.4	59.6	68.8	69.7	62.9	62.6	59.6	69.5	68.7	72.9	66.6	57.6	66.6	68.3	66.7	70.2	67	54.8	72.6	69.9	72.5	59.5	NA
% adult population increased risk of injury from a single occasion of drinking	2017	VPHS 2017	NA	53.6	46.6	44.9	52.9	47.7	48.2	42.4	50.7	57.2	55.6	54.3	47.6	49.9	51.5	45.8	44.3	48.1	38.3	56.3	49.8	54.6	43	NA
Alcohol hospital admissions per 10,000 population, 65+ years	2018-2019	AODStats 2020	NA	NA	NA	46.7	31.3	44	55.2	47.3	47.1	38.3	61.9	63.7	51.1	84.1	79.4	NA	47.9	77.1	71.9	44.3	45.8	47.8	68.4	NA
% adult population daily consumption of sugar sweetened soft drinks	2017	VPHS 2017	NA	7.5	19.3	4.9	18	17.7	10.2	12.5	11.7	25.6	7.5	15.1	16.1	21.7	21.6	10.4	18.7	19.3	15.1	13.4	12.4	13.9	10.1	NA
% adult population current (i.e. daily or occasional) smoker	2017	VPHS 2017	NA	22.1	17.8	13.2	15.9	21.8	14.1	16.7	16.3	26.9	14.9	21.2	18.5	23.7	24	20.3	18.1	15.6	23.2	14.4	9.1	16.2	16.7	NA
Hospital admissions per 10,000 population for Illicit drugs (any) use	2018-2019	AODStats 2020	NA	19.6	28.5	9.7	30.9	15.2	30.1	33.3	10.3	22.6	9.3	17.8	22.9	19.4	24.8	34.3	18.7	22.6	26	NA	23	13.5	29.7	NA
% adult population insufficiently active	2017	VPHS 2017	NA	45.3	54	41.2	38.1	34.1	39.1	46.1	41.6	43.1	40	39.9	40.6	39	47.3	38.5	46.2	56.1	38.6	30.9	47.9	38.4	44.1	NA
% adult population complied with fruit consumption guidelines	2017	VPHS 2017	NA	40.6	38.1	39.7	42.8	33.5	43.3	33.4	47.2	32.9	49.3	44.4	39.6	38.5	39.1	49.2	48.8	35.3	43.8	45.5	45.1	39.2	43.2	NA
% adult population complied with vegetable consumption guidelines	2017	VPHS 2017	NA	8.2	7.7	4.9	5.4	2.9	8.2	4.2	11.3	4.5	5	7.7	2.9	5.7	5.1	10.7	4.5	6.3	8.2	9.8	7.1	5.4	5.4	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Burden of disease																										
Life expectancy (years) at birth-males	2013-2017	VHISS 2020	NA	81.5	79.08	77.46	79.96	81.2	80.35	80.13	80.69	79.63	82.03	81.39	78.8	82.1	79.26	82.32	80.27	80.73	79.29	81.79	80.18	82.55	81.9	NA
Life expectancy (years) at birth-females	2013-2017	VHISS 2020	NA	84.59	83.84	83.35	83.72	84.1	83.63	84.28	84.97	85.84	84.45	84.69	84.66	84.13	84.07	84.22	85.8	85.82	84.21	86.09	84.77	85.72	85.55	NA
Median age at death (years) males	2013-2017	PHIDU 2020	79	79	80	80	79	83	78	79	78	78	78	78	78	76	79	80	77	79	79	80	80	77	79	78
Median age at death (years) females	2013-2017	PHIDU 2020	85	85	85	86	84	85	85	84	85	86	85	85.5	84	82	84	85	84	83	84	87	84.5	83	85	84
Total avoidable mortality 65+ years standardised rate per 100,000 population	2012-2016	VHISS 2020	NA	632.75	651.05	740.4	659.27	502.01	607.23	625.86	458.66	650.47	450.99	451.77	697.14	608.06	647.44	527.79	645.48	825.58	541.12	399.66	563.67	596.11	531.15	NA
Adults aged 65+ years (includes people in long-term accommodation) with a profound or severe disability %	2016	PHIDU 2020	18	14	14.4	18.7	17	15.7	17.1	18.1	15.6	18	13.3	12.4	21.2	16.7	16.7	12.2	14.2	16.3	18.1	14.1	14.6	18.7	19.4	18.4
Adults aged 65+ years living in the community with a profound or severe disability %	2016	PHIDU 2020	12.1	10.7	10.1	14.4	12.2	11	12.7	13.4	12.4	15.8	9.9	9.2	15.8	14	11.8	11.4	11.2	10.8	12.7	9.7	11.6	14.4	14.9	14.3
% adult population with doctor diagnosed two, or more chronic diseases	2017	VPHS 2017	NA	22.1	30.7	30.4	30.9	33.2	32.8	34.3	32.9	39.2	26.6	22.5	32.1	30.7	36	26.8	32.2	28.8	26.6	28.5	27.5	32.3	25.5	NA
% adult population with doctor diagnosed arthritis	2017	VPHS 2017	NA	20.7	19.8	27.7	33.3	30.4	28.7	28.7	25.1	28	18	18.7	23.4	27	24.8	22.9	22.9	22.6	24.4	22.5	23.1	25	20.5	NA
% adult population with doctor diagnosed osteoporosis	2017	VPHS 2017	NA	5.9	5.8	5.9	6.7	8.1	7.7	6.6	5.5	6.6	6.1	4.3	6.4	6.1	5.9	3.9	9.3	6.8	6.9	3.2	5.1	7.7	5.7	NA
Total ambulatory care sensitive conditions hospitalisations standardised rate per 1,000 population, 65+ years	2018-2019	VHISS 2020	NA	76.94	102.11	85.5	124.6	115.02	98.03	112.22	43.57	93.7	73.67	93.46	71.95	111.44	97.9	85.17	95.61	94.62	120.12	49.01	71.4	64.1	91.84	NA
Chronic ambulatory care sensitive conditions hospitalisations standardised rate per 1,000 population, 65+ years	2018-2019	VHISS 2020	NA	49.88	67.46	63.38	95.44	83.87	67.36	87.13	31.01	62.5	49.36	66.31	43.53	84.14	67.03	48.46	64.41	64.49	93.31	39.46	48.72	47.42	60.85	NA
Acute ambulatory care sensitive conditions hospitalisations standardised rate per 1,000 population, 65+ years	2018-2019	VHISS 2020	NA	23.94	29.11	19.18	26.31	30.88	27.29	21.67	10.81	28.2	20.67	23.52	24.05	24.53	25.39	32.94	26.19	26.51	21.31	7.96	20.06	12.65	25.31	NA
Vaccine-preventable ambulatory care sensitive conditions hospitalisations standardised rate per 1,000 population, 65+ years	2018-2019	VHISS 2020	NA	3.11	5.81	2.94	3.64	0	3.9	4.02	1.75	2.99	4.4	3.62	5.39	2.77	6.3	4.73	5.83	4.4	6.27	0	2.62	4.81	6.5	NA
Unintentional injury hospitalisations rate per 100,000 population for falls, 65+ years	2017	VISU 2019	NA	2373.8	2297.6	3159.7	2657.7	2592.9	2901.4	3167.1	1752.3	2092.7	2148.8	1865.1	2229.8	2738.4	2636.3	2221.7	2076.3	2752	2862.3	1112.6	2674.2	934.4	3199.48	NA

Chronic Disease

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Chronic Disease - Risk factors																										
% adult population obese	2017	VPHS 2017	NA	25.6	31	24.5	25.7	31.6	22.4	30.9	23.1	26.5	15.3	17.1	31.6	32.2	25.8	19.1	15.2	24.3	28.6	23.9	21.6	26.9	19.3	NA
% adult population overweight	2017	VPHS 2017	NA	58.8	61.3	48.5	55.4	64.2	60.3	65	51.6	50.1	55.6	57	57.9	62.7	59.4	48.9	45.1	59.1	49.8	59.6	60.8	61.4	50.8	NA
% adult population had a blood pressure test in last 2 years	2017	VPHS 2017	NA	69.9	88.5	82.9	79.8	78.2	80.2	83	85	72	88.4	66.8	85.3	82.7	78	75.3	81.1	76.9	86	83.3	77.8	79.8	79.6	NA
% adult population doctor diagnosed hypertension	2017	VPHS 2017	NA	17.2	34.9	31	26.5	37.9	25.4	31.2	25.4	24.1	22.8	20.2	26.5	28.6	28.2	25.7	26.8	32.6	27.3	20.9	22.4	28.8	25.4	NA
% adult population who had a blood-lipids test in the last 2 years	2017	VPHS 2017	NA	47	61.6	56.1	55.9	55.7	48.1	62	55.6	59.7	56.6	41.8	53.6	59.1	55.4	44.8	57.8	58.2	52.7	52.9	51.8	58.2	56.8	NA
% adult population who had a blood-glucose test in the last 2 years	2017	VPHS 2017	NA	45.4	61	50.6	59.6	53.4	43.7	55.1	47.6	55	54	39.9	49.7	58	54.9	41.3	50.4	53.6	58.2	47.4	46.5	52.4	50.7	NA
% adult population increased lifetime risk of alcohol-related harm	2017	VPHS 2017	NA	67.4	59.6	68.8	69.7	62.9	62.6	59.6	69.5	68.7	72.9	66.6	57.6	66.6	68.3	66.7	70.2	67	54.8	72.6	69.9	72.5	59.5	NA
% adult population increased risk of injury from a single occasion of drinking	2017	VPHS 2017	NA	53.6	46.6	44.9	52.9	47.7	48.2	42.4	50.7	57.2	55.6	54.3	47.6	49.9	51.5	45.8	44.3	48.1	38.3	56.3	49.8	54.6	43	NA
% adult population daily consumption of sugar sweetened soft drinks	2017	VPHS 2017	NA	7.5	19.3	4.9	18	17.7	10.2	12.5	11.7	25.6	7.5	15.1	16.1	21.7	21.6	10.4	18.7	19.3	15.1	13.4	12.4	13.9	10.1	NA
% adult population current (i.e. daily or occasional) smoker	2017	VPHS 2017	NA	22.1	17.8	13.2	15.9	21.8	14.1	16.7	16.3	26.9	14.9	21.2	18.5	23.7	24	20.3	18.1	15.6	23.2	14.4	9.1	16.2	16.7	NA
Hospital admissions per 10,000 population for Illicit drugs (any) use	2018-2019	AODStats 2020	NA	19.6	28.5	9.7	30.9	15.2	30.1	33.3	10.3	22.6	9.3	17.8	22.9	19.4	24.8	34.3	18.7	22.6	26	ND	23	13.5	29.7	NA
% adult population insufficiently active	2017	VPHS 2017	NA	45.3	54	41.2	38.1	34.1	39.1	46.1	41.6	43.1	40	39.9	40.6	39	47.3	38.5	46.2	56.1	38.6	30.9	47.9	38.4	44.1	NA
% adult population complied with fruit consumption guidelines	2017	VPHS 2017	NA	40.6	38.1	39.7	42.8	33.5	43.3	33.4	47.2	32.9	49.3	44.4	39.6	38.5	39.1	49.2	48.8	35.3	43.8	45.5	45.1	39.2	43.2	NA
% adult population complied with vegetable consumption guidelines	2017	VPHS 2017	NA	8.2	7.7	4.9	5.4	2.9	8.2	4.2	11.3	4.5	5	7.7	2.9	5.7	5.1	10.7	4.5	6.3	8.2	9.8	7.1	5.4	5.4	NA
Cancer																										
Cancer - Screening																										
Persons who participated in the National Bowel Cancer Screening Program %	2016-2017	PHIDU 2020	44.1	50.6	49.1	44.9	44.9	47	48.7	44.8	50.3	44.5	46.2	50.4	40.5	42.4	46.7	50.9	44.7	44.2	41.6	45.1	50.6	44.9	43.2	41.3
BreastScreen participation for women aged 50-74 years %	2015-2017	Victorian Women's Health Atlas 2018	NA	47.1	52.7	62.5	55	63.9	61.3	56.2	18.6	51.2	57.2	59.8	59	53.9	55.3	54	52.4	54.8	60.4	29.9	51.8	0.9	53.7	NA
National Cervical Screening Program participation for women aged 20-69 %	2015-2016	PHIDU 2020	52.8	61.9	64.1	61.3	58.6	55.7	56.7	56	64.8	53.5	66.2	62.9	55.8	53.1	57.7	74.4	56.9	62	58.4	64.9	65.1	59.4	57.1	NA
HPV 3 dose coverage for females aged 15 years %	2017	PHIDU 2020	74.1	79.6	78.8	105.8	97	93.2	79.8	83	95.6	80.7	74.2	38	84.5	72.8	95.8	83.1	90.9	90.2	81.1	82.2	86	86.1	80	80.5
HPV 3 dose coverage for males aged 15 years %	2017	PHIDU 2020	75.5	79.1	62.1	105.7	86.7	98.6	73.9	77.6	83.2	81.7	75	35	71.4	78.4	79	81.5	98.7	79.5	87.1	97.8	73	81.7	76.5	76.1
NBSCP- positive screening result, persons %	2016-2017	PHIDU 2020	8.6	9.2	9.1	9.5	9	9.1	8	8.2	7.5	10.2	6.9	7.8	8.9	9.8	8.8	7.2	7.9	7.2	8.5	10.2	7.6	8.2	7.9	7.9

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Breast screening outcomes- cancer, females aged 50 to 69 years ASR per 10,000	2013-2014	PHIDU 2020	24.4	NP	42.2	NP	32.9	58.8	33.7	33	NP	42.9	38.9	NP	32.8	31.8	33.9	23.1	27.6	NP	42	NP	31	0	33.4	NA
Cervical screening outcomes- Low grade abnormality, females aged 20 to 69 years ASR per 1,000	2015-2016	PHIDU 2020	30.1	38.3	37.4	36.6	43.1	41.6	39.6	40.6	34.2	40	39.2	42.8	46.7	34.4	44.7	40	45.3	40.2	42.8	31.9	30.6	32.3	37.6	NA
Cervical screening outcomes- High grade abnormality, females aged 20 to 69 years ASR per 1,000	2015-2016	PHIDU 2020	10.7	7.8	12.9	11.2	12.8	13.6	15.7	12.3	13.1	9.7	10.5	23.6	15.9	12.8	15	12.5	9.8	12.6	17.5	10.1	14.2	10.9	11	NA
Cancer - Burden of disease																										
% adult population doctor diagnosed cancer	2017	VPHS 2017	NA	8.4	10.2	8.5	9.3	11.6	12	11.2	10.4	10.9	7.9	8.6	8.5	7.6	9.6	11.8	13.7	12.3	7.4	9.6	9.1	10	8.1	NA
Residents diagnosed with prostate cancer, rate per 1,000 population*	2018	Victorian Cancer Statistics 2018	NA	0.86	1.14	1.78	1.04	1.8	0.94	0.92	0.97	1.46	0.55	1.45	1.06	0.86	1.24	1.84	1.52	0.94	0.67	1.16	1.17	0.77	0.8	NA
Residents diagnosed with breast cancer, rate per 1,000 population*	2018	Victorian Cancer Statistics 2018	NA	0.78	1.21	0.81	1.12	0.95	0.82	0.88	0.85	1.33	0.28	0.67	0.76	0.52	1.71	1.23	1.38	1.22	0.72	0.99	0.93	0.84	0.73	NA
Residents diagnosed with lung cancer, rate per 1,000 population*	2018	Victorian Cancer Statistics 2018	NA	0.94	NA	1.13	0.77	1.52	0.58	0.53	0.48	1.2	NA	NA	0.68	0.47	0.8	1.02	0.69	0.94	0.72	0.99	0.69	0.82	0.48	NA
Residents diagnosed with melanoma cancer, rate per 1,000 population*	2018	Victorian Cancer Statistics 2018	NA	0.78	1	NA	0.82	0.85	0.64	0.79	1.52	0.8	0.26	0.78	0.36	0.29	0.8	0.61	0.62	0.94	0.77	1.98	0.82	0.94	0.48	NA
Admissions by principal diagnosis all cancers- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	2900.3	2852.5	2972	2628.9	3170.9	2694.5	2951.5	3436.2	3050.1	2519.3	3157	3087.2	2632.1	3284	3330.1	2790.2	2930.9	3155.3	2592.9	2718.3	2753.9	3341.3	2893.7	NA
Deaths from cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	105.9	107.3	116.4	122.7	103.2	97.8	110.7	89.2	102.2	94.2	92.1	86.8	111.1	88.7	118.3	92.4	102.9	110	112.8	98	105.5	104	94.4	99
Deaths from colorectal cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	7.5	9.6	7.8	17.4	5.5	17.3	10.2	7.9	6.1	9.5	4.4	NP	12.8	9	10.5	6.4	8.4	NP	4.7	NP	11.7	7.9	9.2	8.8
Deaths from lung cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	21.2	15	25.5	28.5	18	15	22.3	15.1	27.4	34.5	16	19.7	22.3	19	28.6	23.7	31.2	29.6	19.5	20.7	18.5	23.2	18.7	20.4
Deaths from breast cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	14.2	12.8	18.8	NP	18.7	NP	14.4	12.4	15	NP	18.7	NP	21.3	9.7	8.4	18.5	NP	21.1	14	NP	20.3	22.2	15.7	15.5
Avoidable deaths from cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	27.4	27.9	28	37.6	28.9	32	31.5	24.2	19.3	25	23.4	33.1	33.4	22.2	32.4	24.9	32.8	27.5	24.6	24.4	35.3	30.5	27.8	28.4
Avoidable deaths from colorectal cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	7.5	12.1	7.8	17.4	6.4	17.3	10.4	7.9	6.1	9.5	5.1	NP	12.8	9.5	10.5	6.4	8.4	NP	4.7	NP	11.7	8.5	9.4	9.1
Avoidable deaths from breast cancer, 0 to 74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	14.2	12.8	18.8	NP	18.7	NP	14.4	12.4	15	NP	18.7	NP	21.3	9.7	8.4	18.5	NP	21.1	14	NP	20.3	22.2	15.7	15.5
Avoidable mortality from prostate cancer standardised rate per 100,000 persons	2012-2016	VHISS 2020	NA	NA	4.9	NA	3.37	NA	4.06	2.08	NA	NA	4.08	10.58	4.07	2.73	6.82	NA	4.46	6.77	4.38	NA	5.18	NA	3.18	NA
Avoidable mortality from skin cancer standardised rate per 100,000 persons	2012-2016	VHISS 2020	NA	6.84	NA	NA	5.46	NA	3.63	5.99	NA	NA	3.91	NA	3.52	5.36	4.86	NA	4.58	NA	NA	NA	4.8	4.33	3.61	NA
Avoidable mortality from cervical cancer standardised rate per 100,000 persons	2012-2016	VHISS 2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.66	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Congestive Heart Failure																										
Congestive heart failure - Burden of disease																										
% adult population doctor diagnosed heart disease	2017	VPHS 2017	NA	5.6	4.4	8.7	7.5	6.6	7.8	10.8	7.5	6.1	7.2	5.8	5.5	9.2	8.4	5.1	6	9.1	6.5	9.1	5.7	8	6.7	NA
Estimated number of people with heart, stroke and vascular disease ASR per 100 population	2017-2018	PHIDU 2020	4.9	4.6	4.3	5.4	6	5.4	5.3	5.8	4.8	5.2	5.1	4.9	5.2	5.8	5.4	4.2	4.5	5.1	5.3	4.5	4.9	4.6	4.9	4.8
Admissions by principal diagnosis-circulatory system diseases- all hospitals, ASR per 100,000 per population	2017-2018	PHIDU 2020	2789	2434.5	2541.8	2421	2557.7	2509.3	2631.7	2683.2	2748.5	2726.7	2066.6	2056.9	2036.6	2845.1	2368.4	2190.4	2087.8	2241.5	2738.5	2347.2	2357.5	2906.7	2256.3	NA
Admissions by principal diagnosis-heart failure- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	331.6	NA	NA	NA	260.1	261.7	294.8	266.4	211.6	361.1	210.7	NA	176.8	357.9	230.5	222.6	240.3	234	NA	NA	234.2	348.3	270.9	NA
Congestive cardiac failure, number of hospital admissions	2018-2019	VHISS 2020	NA	42	82	21	187	40	428	235	34	53	99	43	131	146	93	59	50	39	131	15	88	75	17700	NA
Congestive cardiac failure, hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	2.25	3.44	1.61	3.1	2	3.09	3.01	1.7	3.77	2.08	3.45	1.92	3.86	1.92	1.95	2.59	2.16	4.92	1.54	1.96	1.84	2.6	NA
Congestive cardiac failure, hospital admissions average bed days	2018-2019	VHISS 2020	NA	8.52	4.32	7.1	6.22	5.18	6.57	5.53	9.5	5.79	7.94	7.47	7.78	7.25	7.92	8.46	7.54	7.51	4.88	5.33	5.93	5	7.11	NA
Potentially preventable hospitalisations- chronic congestive cardiac failure, all hospitals, (ASR per 100,000)	2017-2018	PHIDU 2020	329.7	NA	NA	NA	254.6	261.6	293.2	263.6	211.8	353.1	208.8	NA	178.3	350.3	226.1	219.2	238.5	234.1	NA	NA	235.8	345.8	268.6	NA
Deaths from circulatory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	47.5	32.5	43.3	64.6	48	40	51.4	51.1	42.6	44	32.1	48.3	61.5	39.7	46.9	35.2	54.7	55.7	56.7	29	40.5	42.5	40.4	43.5
Avoidable deaths from circulatory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	36	27.5	33.1	46.7	35.5	31.1	38.3	41.8	33.3	30.3	23.7	30.7	51.1	31.2	37.8	30.1	41.7	41.7	42.4	21.6	30.5	32.9	31.9	35.3
Cause of death- heart failure and complications and ill-defined heart disease ASR per 100,000 persons	2013-2017	AIHW 2017	20.2	17.6	13.2	24.7	26.9	NA	16.7	12.1	20.8	NA	13.4	NA	12	19.6	16.2	NA	NA	NA	14.7	NA	10.1	13.2	NA	10.8
Coronary heart disease																										
Coronary heart disease - Burden of disease																										
% adult population doctor diagnosed heart disease	2017	VPHS 2017	NA	5.6	4.4	8.7	7.5	6.6	7.8	10.8	7.5	6.1	7.2	5.8	5.5	9.2	8.4	5.1	6	9.1	6.5	9.1	5.7	8	6.7	NA
Estimated number of people with heart, stroke and vascular disease ASR per 100 population	2017-2018	PHIDU 2020	4.9	4.6	4.3	5.4	6	5.4	5.3	5.8	4.8	5.2	5.1	4.9	5.2	5.8	5.4	4.2	4.5	5.1	5.3	4.5	4.9	4.6	4.9	4.8
Admissions by principal diagnosis-circulatory system diseases- all hospitals, ASR per 100,000 per population	2017-2018	PHIDU 2020	2789	2434.5	2541.8	2421	2557.7	2509.3	2631.7	2683.2	2748.5	2726.7	2066.6	2056.9	2036.6	2845.1	2368.4	2190.4	2087.8	2241.5	2738.5	2347.2	2357.5	2906.7	2256.3	NA
Admissions by principal diagnosis-ischaemic heart disease- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	897.7	678.6	626.1	750.3	742.1	773.2	730.5	860.9	821.2	714.6	489.3	539.2	711.5	700.7	802.4	611.6	477.6	473	981.6	638.3	632.7	847.4	586.8	NA
Angina number of hospital admissions	2018-2019	VHISS 2020	NA	23	23	7	95	44	247	215	21	25	36	11	70	35	51	41	16	16	87	7	36	53	8752	NA
Angina number of hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	1.35	1.26	0.83	1.78	2.55	1.86	2.82	1.07	1.89	0.67	0.85	1.07	0.75	1.21	1.42	0.8	0.86	3.5	0.85	0.87	1.25	1.31	NA
Angina hospital admissions average bed days	2018-2019	VHISS 2020	NA	1.83	2	1.29	2.36	1.66	1.85	1.94	3.05	2.12	2.69	1.64	2.43	3.69	2.1	1.56	2.06	2.13	1.17	1.14	1.75	2.08	2.28	NA
Potentially preventable hospitalisations- chronic angina, all hospitals, (ASR per 100,000)	2017-2018	PHIDU 2020	149.2	151.2	NA	NA	167.7	NA	182.6	189.9	157.6	NA	51.9	NA	109.2	76.4	121.7	105.1	NA	NA	NA	130.4	143.7	177.8	105.1	NA

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Deaths from circulatory system diseases, persons aged 0-74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	47.5	32.5	43.3	64.6	48	40	51.4	51.1	42.6	44	32.1	48.3	61.5	39.7	46.9	35.2	54.7	55.7	56.7	29	40.5	42.5	40.4	43.5
Deaths from ischaemic heart disease, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	19.8	17.9	12.1	29.5	24.4	17.1	23	26.6	21.1	24.6	13.8	18.8	33.6	15.8	26.4	17.4	26.1	31	33.9	21.6	17.1	20.4	20.2	22.5
Avoidable deaths from circulatory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	36	27.5	33.1	46.7	35.5	31.1	38.3	41.8	33.3	30.3	23.7	30.7	51.1	31.2	37.8	30.1	41.7	41.7	42.4	21.6	30.5	32.9	31.9	35.3
Avoidable deaths from ischaemic heart disease, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	19.8	17.9	12.1	29.5	24.4	17.1	23	26.6	21.1	24.6	13.8	18.8	33.6	15.8	26.4	17.4	26.1	31	33.9	21.6	17.1	20.4	20.2	22.5
Stroke																										
Stroke - Burden of disease																										
% adult population doctor diagnosed stroke	2017	VPHS 2017	NA	2.4	2.3	2.4	2.5	1.4	2.5	2.4	3.4	4.3	1.4	1.7	2.1	2.3	2.9	1.1	6.5	3.4	3.2	3.8	2.7	1.7	2.4	NA
Estimated number of people with heart, stroke and vascular disease ASR per 100 population	2017-2018	PHIDU 2020	4.9	4.6	4.3	5.4	6	5.4	5.3	5.8	4.8	5.2	5.1	4.9	5.2	5.8	5.4	4.2	4.5	5.1	5.3	4.5	4.9	4.6	4.9	4.8
Admissions by principal diagnosis- circulatory system diseases- all hospitals, ASR per 100,000 per population	2017-2018	PHIDU 2020	2789	2434.5	2541.8	2421	2557.7	2509.3	2631.7	2683.2	2748.5	2726.7	2066.6	2056.9	2036.6	2845.1	2368.4	2190.4	2087.8	2241.5	2738.5	2347.2	2357.5	2906.7	2256.3	NA
Admissions by principal diagnosis- stroke- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	262.4	NA	NA	NA	295.8	323.9	234.1	266.8	NA	NA	195.2	NA	NA	NA	189	NA	NA	NA	NA	NA	NA	NA	222.7	NA
Deaths from cerebrovascular diseases, persons aged 0-74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	12.6	5.9	10.9	NP	6.2	7	10.4	10.1	7.1	NP	6.3	NP	10.6	8.5	8.1	8.7	11.4	8	5.6	0	7.9	10.8	7.6	7.9
Hypertension																										
Hypertension- Burden of disease																										
% adult population doctor diagnosed hypertension	2017	VPHS 2017	NA	17.2	34.9	31	26.5	37.9	25.4	31.2	25.4	24.1	22.8	20.2	26.5	28.6	28.2	25.7	26.8	32.6	27.3	20.9	22.4	28.8	25.4	NA
Estimated number of people with heart, stroke and vascular disease ASR per 100 population	2017-2018	PHIDU 2020	4.9	4.6	4.3	5.4	6	5.4	5.3	5.8	4.8	5.2	5.1	4.9	5.2	5.8	5.4	4.2	4.5	5.1	5.3	4.5	4.9	4.6	4.9	4.8
Admissions by principal diagnosis- circulatory system diseases- all hospitals, ASR per 100,000 per population	2017-2018	PHIDU 2020	2789	2434.5	2541.8	2421	2557.7	2509.3	2631.7	2683.2	2748.5	2726.7	2066.6	2056.9	2036.6	2845.1	2368.4	2190.4	2087.8	2241.5	2738.5	2347.2	2357.5	2906.7	2256.3	NA
Hypertension, number of hospital admissions	2018-2019	VHISS 2020	NA	8	8	11	42	13	50	51	0	0	19	9	22	21	25	7	11	8	9	0	15	16	3313	NA
Hypertension, hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	0.38	0.44	1.24	0.81	0.8	0.38	0.69	0	0	0.43	0.61	0.36	0.49	0.56	0.23	0.54	0.41	0.37	0	0.34	0.36	0.5	NA
Hypertension, hospital admissions average bed days	2018-2019	VHISS 2020	NA	5.75	1.13	2.82	3.26	2.77	2.78	2.61	0	0	3.47	4.67	2.68	2.33	4.24	2.71	1.91	8.13	1.78	0	5.93	2.94	2.49	NA
Deaths from circulatory system diseases, persons aged 0-74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	47.5	32.5	43.3	64.6	48	40	51.4	51.1	42.6	44	32.1	48.3	61.5	39.7	46.9	35.2	54.7	55.7	56.7	29	40.5	42.5	40.4	43.5
Avoidable deaths from circulatory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	36	27.5	33.1	46.7	35.5	31.1	38.3	41.8	33.3	30.3	23.7	30.7	51.1	31.2	37.8	30.1	41.7	41.7	42.4	21.6	30.5	32.9	31.9	35.3

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
COPD																										
COPD - Burden of disease																										
Estimated number of people with COPD ASR per 100 population	2017-2018	PHIDU 2020	2.6	1.5	1.7	2	2.8	1.9	2.8	2.8	2.2	2.7	2.3	2.6	2.7	2.6	2.7	2.3	1.9	1.7	2.7	1.5	2.4	2.7	2.1	2.5
Admissions by principal diagnosis-respiratory system diseases- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	2038.2	1960.9	2613.6	2491.8	2422.3	2530.3	2266.4	2362.4	2052.3	2448.9	1689.1	2033.6	2010.4	2515.1	2430.2	1862.4	2254.3	2314.8	2211.4	1858.4	1891.3	2038.2	1897.8	NA
Admissions by principal diagnosis-COPD- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	416.9	NA	NA	NA	491.2	NA	340.1	384.7	NA	514	210	NA	306.2	549.8	NA	NA	389.8	416.2	NA	NA	267	NA	281.5	NA
COPD number of hospital admissions	2018-2019	VHISS 2020	NA	48	90	55	269	96	441	342	31	34	114	35	202	188	198	81	68	69	124	17	81	122	16419	NA
COPD hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	2.77	3.88	4.83	4.74	5	3.21	4.34	1.35	2.51	2.14	2.71	2.99	4.31	4.05	2.77	2.94	3.66	4.67	1.64	1.83	2.82	2.42	NA
COPD hospital admissions average bed days	2018-2019	VHISS 2020	NA	4.9	4.48	5.15	4.46	5.16	3.9	4.39	5	6.06	6.37	6.86	6.53	5.58	6.07	7.79	6.59	5.57	3.34	6.24	5.96	4.25	5.39	NA
Potentially preventable hospitalisations for chronic COPD, all hospitals, (ASR per 100,000)	2017-2018	PHIDU 2020	415	NA	NA	NA	473.8	NA	329.6	374.7	NA	504.1	205.8	NA	301.3	542.9	NA	NA	387.2	411.9	NA	NA	258.1	NA	273.8	NA
Deaths from respiratory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	22.2	21	18.1	26.2	22.7	12.1	16.4	17.6	18	22	11	16.5	16.6	16.5	22.6	16.2	13.2	18	20.5	NP	18.4	19.3	14	15.9
Deaths from COPD, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	12	12.4	13.4	23	15.7	9.1	11.1	10	11.7	14.2	7	9.5	11.4	8	15.3	6.7	10.8	16.1	12	NP	14.5	12.5	9.5	8.3
Avoidable deaths from respiratory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	13.2	13.7	13.6	23.4	16.8	9.3	11.3	11.3	14.8	16.2	7	9.7	12.6	8.5	17	7.6	11.9	16.4	12	NP	14.7	14.2	8.9	10.2
Avoidable deaths from COPD, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	12	12.4	13.4	23	15.7	9.1	11.1	10	11.7	14.2	7	9.5	11.4	8	15.3	6.7	10.8	16.1	12	NP	14.5	12.5	8.3	9.5
Asthma																										
Asthma - Burden of disease																										
% adult population doctor diagnosed asthma	2017	VPHS 2017	NA	18	30.6	30.2	29.7	29	28.5	25	26.2	24.3	24.6	22	25.5	23.9	26.9	14.2	16	17.9	18.5	23.6	27.4	23	20	NA
Estimated number of people with asthma ASR per 100 population	2017-2018	PHIDU 2020	13.4	11.9	14.5	12.1	15.3	12	15.2	13.9	13.2	13	11.8	10.8	13.3	13.5	14.7	14.6	12.5	13.5	12.9	11.7	14.4	14.2	11.5	11.2
Admissions by principal diagnosis-respiratory system diseases- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	2038.2	1960.9	2613.6	2491.8	2422.3	2530.3	2266.4	2362.4	2052.3	2448.9	1689.1	2033.6	2010.4	2515.1	2430.2	1862.4	2254.3	2314.8	2211.4	1858.4	1891.3	2038.2	1897.8	NA
Admissions by principal diagnosis-asthma- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	NA	NA	NA	NA	NA	NA	188.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59.5	NA	NA	NA	NA	167.5	NA
Asthma number of hospital admissions	2018-2019	VHISS 2020	NA	7	15	0	74	12	186	88	6	12	56	8	71	68	29	16	22	7	20	0	29	21	7991	NA
Asthma hospital admissions standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	0.54	0.88	0	2.13	0.99	1.6	1.27	0.35	1.12	1.21	0.8	1.25	1.5	0.97	0.82	1.57	0.63	0.97	0	0.99	0.55	1.25	NA
Asthma hospital admissions average bed days	2018-2019	VHISS 2020	NA	1.43	3.13	0	2.18	1.58	2.65	1.6	2.83	3.75	1.64	4.13	3.01	1.9	2.52	3.38	4.23	1.86	2	0	1.66	1.95	2.04	NA
Potentially preventable hospitalisations for chronic asthma, all hospitals, (ASR per 100,000)	2017-2018	PHIDU 2020	NA	NA	NA	NA	NA	NA	169.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56.3	NA	NA	NA	NA	135.4	NA
Deaths from respiratory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	22.2	21	18.1	26.2	22.7	12.1	16.4	17.6	18	22	11	16.5	16.6	16.5	22.6	16.2	13.2	18	20.5	NP	18.4	19.3	14	15.9

Indicators	Data Year	Source	Albury	Alpine	Benalla	Buloke	Campaspe	Gannawarra	Greater Bendigo	Greater Shepparton	Indigo	Loddon	Macedon Ranges	Mansfield	Mildura	Mitchell	Moira	Mount Alexander	Murrindindi	Strathbogie	Swan Hill	Towong	Wangaratta	Wodonga	VIC	AUS
Avoidable deaths from respiratory system diseases, persons aged 0-74 years, (average annual ASR per 100,000)	2013-2017	PHIDU 2020	13.2	13.7	13.6	23.4	16.8	9.3	11.3	11.3	14.8	16.2	7	9.7	12.6	8.5	17	7.6	11.9	16.4	12	NP	14.7	14.2	8.9	10.2
Diabetes																										
Diabetes - Burden of disease																										
% adult population doctor diagnosed type 1 diabetes	2017	VPHS 2017	NA	NA	NA	0.4	1.1	NA	NA	0.7	NA	NA	NA	NA	1.2	NA	1.9	1.9	NA	NA	NA	NA	NA	0.8	0.8	NA
% adult population doctor diagnosed type 2 diabetes	2017	VPHS 2017	NA	4.4	4.9	4.4	6	7.2	5.2	5.7	3.5	4.5	5.7	3.8	6.3	7	5.5	2.6	5.5	5	7.2	5.3	5	7.8	5.5	NA
Estimated number of people with diabetes mellitus ASR per 100 population	2017-2018	PHIDU 2020	4.5	4	3.5	5.2	4	5.1	4.3	4.9	3.5	5.7	3.3	4.5	6	4.8	3.9	3.1	3.3	3.8	5.7	4.1	3.6	4.7	4.8	4.9
Admissions by principal diagnosis-diabetes- all hospitals, ASR per 100,000 population	2017-2018	PHIDU 2020	266.9	NA	NA	NA	289.7	NA	272.8	260.4	NA	NA	139.9	NA	NA	454.4	278.3	NA	NA	NA	NA	NA	NA	252.7	222.6	NA
Number of hospital admissions diabetes complications	2018-2019	VHISS 2020	NA	17	40	24	125	34	322	193	19	20	149	24	111	208	101	20	45	46	101	14	55	50	15130	NA
Number of hospital admissions diabetes complications standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	1.03	2.29	2.56	3.09	2.88	2.7	2.67	1	2.13	2.66	1.97	1.82	4.73	2.98	1.15	3.28	3.17	4.3	1.8	1.72	1.27	2.29	NA
Hospital admissions diabetes complications average bed days	2018-2019	VHISS 2020	NA	9.12	4.58	5.33	6.94	7.62	4.06	8.28	11.74	5.05	3.68	6.42	7.09	4.66	5.23	5.05	3.07	4.93	7.48	14.57	6.02	8.18	5.58	NA
Potentially preventable hospitalisations- chronic diabetes complications, all hospitals, (ASR per 100,000)	2017-2018	PHIDU 2020	266.9	NA	NA	NA	289.7	NA	272.8	260.4	NA	NA	139.9	NA	NA	454.4	278.3	NA	NA	NA	NA	NA	NA	252.7	222.6	NA
Number of hospital admissions cellulitis	2018-2019	VHISS 2020	NA	41	66	29	213	50	436	247	31	44	122	48	240	133	137	113	62	38	100	11	94	77	19958	NA
Number of hospital admissions cellulitis standardised rate per 1,000 persons	2018-2019	VHISS 2020	NA	2.48	3.3	4.1	5.09	3.98	3.63	3.59	1.67	5.37	2.49	4.97	4.11	3.1	3.62	4.84	3.58	2.86	4.5	1.25	3.11	1.88	3.08	NA
Hospital admissions cellulitis average bed days	2018-2019	VHISS 2020	NA	4.9	5.09	3.52	4.63	4.36	3.4	4.74	3.94	5.09	4.35	5.27	4.82	3.72	5.61	3.73	5.03	6.71	3.09	4.18	3.9	5.86	4.41	NA
Deaths from diabetes, persons aged 0-74 years (average annual ASR per 100,000)	2013-2017	PHIDU 2020	7.5	NP	9.8	NP	9.8	NP	4.7	7.9	NP	NP	NP	0	6.2	5.3	7.1	NP	NP	12	4.7	NP	3	6.2	4.8	6.4

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