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An Australian Government Initiative

Primary Health Network

Needs Assessment Reporting

North Western Melbourne PHN

NOVEMBER 2017

TABLE OF CONTENTS

DATA TABLES

FIGURES

SECTION 1 – NARRATIVE

1.1 About this document

This document includes the following sections:

1. Narrative (this section)
2. Outcomes of the health needs analysis
3. Outcomes of the service needs analysis
4. Opportunities, priorities and options
5. Checklist.

The following appendices provide important background and contextual information, including additional data analysis and reference information. They are cross referenced throughout the body of the document:

A/ Additional data analysis (within this word document)

B/ References (within this word document)

C/ In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN (PDF) https://nwmphn.org.au/wp-content/uploads/2017/06/NWMPHN-Mental-Health-and-AOD-Needs-Services-ASPECT-June-2016.pdf

D/ NWMPHN Regional Health Needs Assessment (PDF) https://nwmphn.org.au/wp-content/uploads/2017/07/Regional_Health_Needs_Assessment_August2016.pdf

E/ Market Analysis of refugee health and resettlement services. https://nwmphn.org.au/wp-content/uploads/2017/06/NWMPHN-Refugee-Humanitarian-Services-Mapping-Final-Report-October-2016.pdf

F/ Regional profiles
- F.1: Chronic disease
- F.2: Children and families
- F.3: Mental health
- F.4: Alcohol and Other Drugs
- F.5: Aboriginal and Torres Strait Islander Health
- F.6: Suicide Prevention

1.2 North Western Melbourne PHN

North Western Melbourne PHN (NWMPHN) is one of 31 Primary Health Networks (PHNs) established by the Commonwealth Government on 1st of July 2015 to:

- Increase the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes and
- Improve coordination of care to ensure patients receive the right care, in the right place, at the right time.

NWMPHN includes 13 Local Government Areas (LGAs):

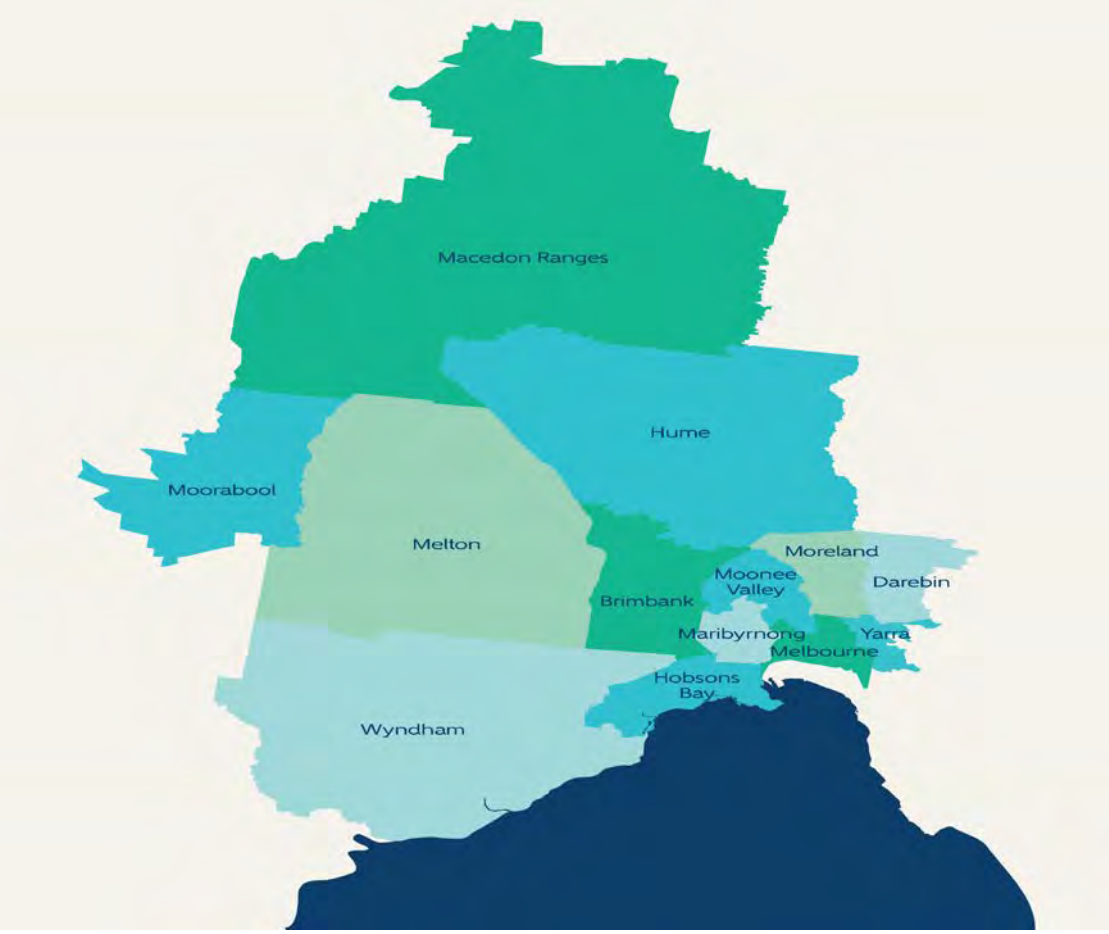
- Brimbank
- Darebin
- Hobsons Bay
- Hume
- Macedon Ranges (part)
- Maribyrnong
- Melbourne
- Melton
- Moonee Valley
- Moreland
- Moorabool (part)
- Wyndham
- Yarra.

Diversity

Covering 3,212 km2 and with a population of over 1,640,000 NWMPHN is a diverse region, not only in its geography but also in the characteristics of its people. NWMPHN's population is younger than the Victorian average, reflecting the student and young professional presence closer to the CBD and young families in the growth corridors of Hume, Brimbank, Melton and Wyndham. The region includes some population groups with high specific health and service needs, such as international students (who experience issues around access to services) and people who identify as gay, lesbian, bisexual, transgender, intersex and queer (who may experience specific health and service needs, for example around mental health and wellbeing).

10,144 people identified as being of Aboriginal or Torres Strait Islander descent in NWMPHN at the last Census (2016), with Darebin, Wyndham and Hume having the highest populations. 720,899 people living in NWMPHN were born overseas (2011), of which 48,000 were new arrivals in the seven months of Jan-July 2016. Vietnamese, Arabic, Turkish and Maltese language speakers are all more than twice as common as Victorian averages and 112,384 (6.8% of the total population at 2011) people who could speak another language reported difficulty speaking English. The region is also home to people seeking asylum or settling via humanitarian programs, with Brimbank, Hume and Maribyrnong all having a high percentage of humanitarian arrivals as a proportion of all new settlers (15 per cent or more above Victorian averages).

Figure 1: Map of North Western Melbourne Region, indicating LGA boundaries



Disadvantage and inequity

NWMPHN has an overall Index of Relative Socio-economic Disadvantage (IRSD) score of 990.5, however there is high variability within the region. LGAs with IRSD scores below 1,000 (relatively disadvantaged) include:

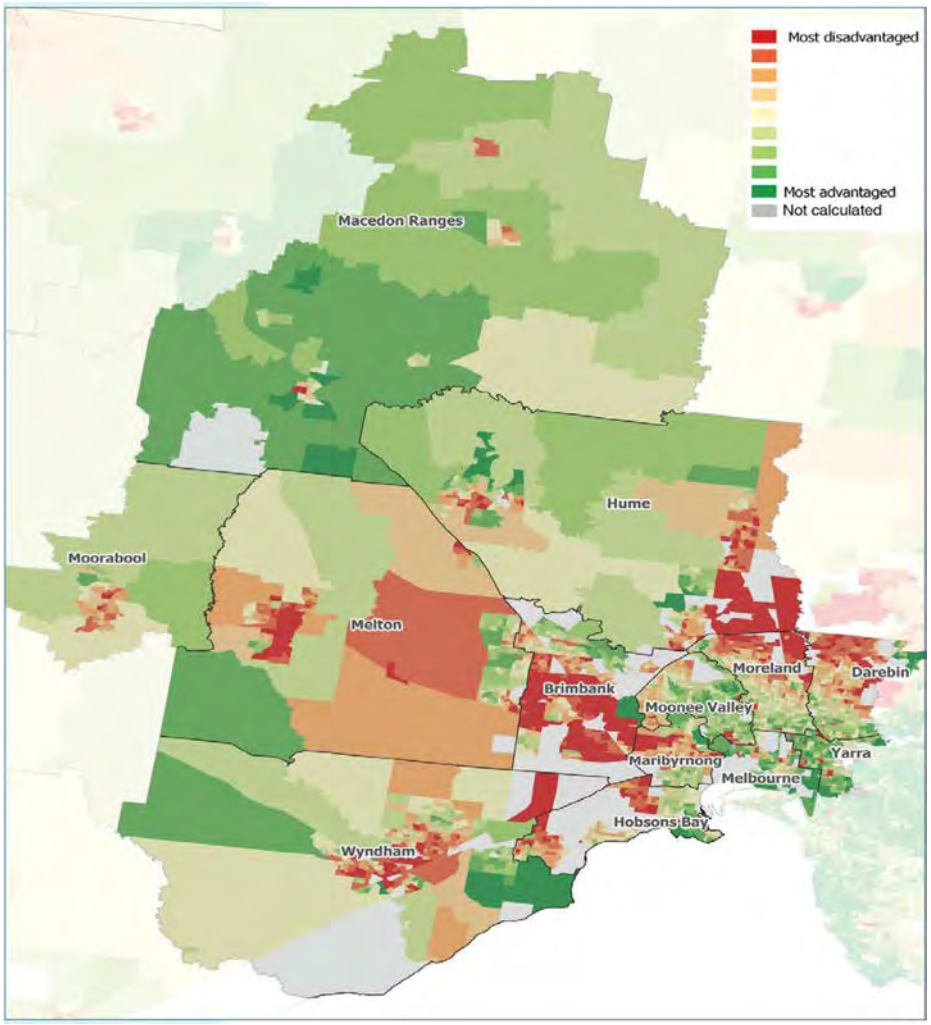
- Brimbank (926);
- Darebin (990);
- Hume (952);
- Maribyrnong (974); and
- Moreland (998).

LGAs with IRSD scores above 1,000 (relatively advantaged) include:

- Hobsons Bay (1,002);
- Macedon Ranges (1,055);
- Melbourne (1,026);
- Melton (1,002);
- Moonee Valley (1,027);
- Moorabool (1,009);
- Wyndham (1,013); and
- Yarra (1,019).

There is also significant variation within LGAs. For example, Moonee Valley has an LGA score of 1,027, but has a smaller SA1 area with a score of 348 - the lowest in Victoria.

Figure 2: The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) by ABS collection district, 2011 (Census).



While overall education levels in the region closely resemble Victorian averages, educational attainment is low in the outer suburban LGAs of Brimbank, Hume, Melton, Macedon Ranges and Moorabool. This suggests a divide in educational attainment between the inner and outer areas of the region. Workforce participation also provides insight into inequality across the region, with workforce participation (2012) being more than 15 per cent higher than the Victorian average in Yarra (83.1 per cent) and more than 15 per cent lower in Melton (55.1 per cent) and Wyndham (51.5 per cent). Unemployment (March 2017) rates were 25 per cent higher than the Victorian average in Brimbank, Hume, Maribyrnong, Melton and Wyndham.

Inequality is also evident in the impact of gambling across the region, as evidenced through losses from electronic gaming machines (pokies). This is an area of significant concern, with the most disadvantaged LGAs in the region having disproportionally higher numbers of gaming machines and gaming machine losses than the more affluent LGAs. Losses in our two most disadvantaged LGAs, Brimbank and Hume, totalled $240 million in 2016-17 alone compared to Yarra and Moonee Valley with combined losses of $106 million for the same period.

Crime rates (2016/17: against the person, against property, and drug offenses) were all higher than the Victorian average in Melbourne, Yarra and Brimbank. Areas with lower than Victorian average crime rates included Moonee Valley, Macedon Ranges, Moorabool and Wyndham.

Despite three LGA's showing moderately high per capita levels of police reported family incidents (Moorabool, Melton and Hume), levels across the region are lower than the state average.

Service system

The North Western Melbourne region has a highly complex and fragmented service system with more than 13 large and specialist/state-wide hospitals; 11 community health services operating multiple sites; more than 1,700 general practitioners across over 540 practices; 385 pharmacies; over 130 aged care facilities; over 120 mental health and alcohol and drugs providers; most of Victoria's correctional facilities; and three of the fastest growing LGAs in Australia.

The region covers the Melbourne Central Business District (CBD), which brings the challenge of servicing a unique mix of transient populations (including tourists, students, workers, homeless people, and people visiting on weekends and evenings) in addition to permanent residents.

1.3 Needs assessment process

NWMPHN has been undertaking needs assessment activities since establishment from mid-2015. This iteration of our needs assessment has been updated to reflect both new data sources and additional engagement or analysis undertaken since the 2016 HNA was delivered. This information has been used to inform a refreshed opportunities, priorities and options section.

A continued priority in this needs assessment has been the ongoing development of strategic relationships across our region to support an inclusive and engaging process, and to set the scene for more collaborative population health planning and commissioning in the future.

Activities undertaken include:

- Continued implementation of the Memorandum of Understanding (MoU) with the Victorian Department of Health and Human Services (DHHS) Regional Office to progress an integrated and collaborative approach to population health planning for the region. The relationship will evolve over time, but the current MoU is an agreement to:
  - cooperate and align effort in regional population health planning;
  - identify opportunities to share data and information;
  - explore opportunities to share resources where appropriate;
  - look for opportunities to work collaboratively to address shared priorities; and
  - Appoint a shared resource - a population health analyst.
- Continued review of new and updated secondary data, and commencing analysis and interpretation of that data to inform planning and commissioning.
- Commissioning the *In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN (*Appendix C*)*. This is part of a substantial body of work underway to support the commencement of mental health and drug and alcohol reform, including: identifying and addressing additional capacity requirements; accessing expert advice; and developing a local stepped model of care and e-record.
- Development of an annual population health planning delivery and engagement schedule to comply with internal and external requirements.
- The publication of two discussion papers to inform and engage stakeholders in conversations about healthcare reform:
  - Australian Health Care Reform: Challenges, Opportunities and the Role of PHNs[1]
  - The health care home: What it means for Australian primary health care.[2]

With specific regards to **community engagement and consultation**, activities have included:

- Stakeholder consultations with over 100 mental health and drug and alcohol treatment providers and organisations.
- Finalising the mental health and drug and alcohol stakeholder consultations providing detailed insight into the current service system mapping and stratification (see Appendix C).
- Testing our findings and prioritisation approach with our Clinical and Community Advisory Councils throughout the year. This process identified ongoing areas of focus and important considerations for prioritisation.
- Commissioning support to map services for refugees and asylum seekers, including all refugee health services, settlement services and other applicable social support services (Appendix E).

[1] nwmphn.org.au/wp-content/uploads/2017/06/Challenges-Opportunities-Feb2016.pdf

[2] nwmphn.org.au/wp-content/uploads/2017/08/NWMPHN_DiscussionPaper_Health_Care_Home-FINAL.pdf

- Progressing the analysis and interpretation of quantitative data and continuing to collect, collate and analyse qualitative data to inform the Health Needs Assessment.
- Individual and joint engagement meetings held with all Local Governments in the region, all Primary Care Partnerships and all Community Health Organisations to strengthen relationships, present our regional Health Needs Assessment (Appendix D) and how we can work more collaboratively together in the future.
- The development of and consultation on six detailed and informative regional area profiles based on the key priorities for our PHN (Appendix F).
- Undertaking a comprehensive survey of our General Practices to inform our engagement and work with this sector.

NWMPHN views the process of assessing need as an ongoing activity. While the delivery of this HNA to the Commonwealth is another important milestone, it is not the end of our assessment of need process and we continue to work through the following activities in a planned way:

- We are developing a schedule of in depth studies aimed at thorough interrogation of quantitative data as well as a methodology and process around qualitative research to support a deeper understanding of key issues.
- Ongoing and targeted consultations to continue the process of building a complex and nuanced view of health and service needs in our region and to further identify and develop solutions which can be included in the next Activity Work Plan.
- Continued development of the stepped system of care for the future commissioning of mental health and drug and alcohol services across the region. This model has been co-designed with a broad range of providers, consumers and carers.
- Continuing to build our capacity internally and externally as a meso-level commissioning organisation for our region.

1.4 Additional data needs and gaps

The priority is to enable detailed analysis of data at the sub-PHN catchment level. The analysis of data at the Statistical Area 3 (SA3) / Local Government Area (LGA) level is sufficient in some cases; however, for more sophisticated analysis within PHNs and to be able to identify highly localised priorities, a finer level of granularity needs to be available.

Statistics from existing data sources often become suppressed for confidentiality reasons when attempting to examine small geographic areas, or analysis using a number of qualifying factors which reduce publishable counts to below the privacy threshold. PHNs need to be seen as trusted users of original data for internal purposes, and be able to apply privacy rules to published data to ensure privacy is maintained. It is also important that PHNs are provided with access to data as soon as possible after collection, as currently many available data sets are several years old and therefore of questionable relevance.

Data matching is also problematic due to the variation in application of different data rules across multiple datasets, which has inhibited our capacity to undertake meaningful comparative analysis.

Notwithstanding these constraints, it is our view that overall there is an abundance of secondary data available to support the assessment of need and commissioning generally. Not all data sources are perfect, or meet our needs exactly, but the challenge is to use the data we have effectively to inform decision making.

We also have an ongoing challenge to collect, collate and analyse high quality qualitative data to further inform our understanding of need, prioritisation and solution design. This is being done through substantial ongoing engagement processes, as well as targeted consultation activities.

1.5 Additional comments

The complexity of the North Western Melbourne service system, and the implications for the relationships that need to be developed and maintained within a commissioning context, cannot be overstated. Added to which, the relatively short timeframes to progress tasks and deliverables associated with building our commissioning capability and conducting our needs assessments - and the associated lack of clarity about expectations, requirements and funding - has created several challenges for NWMPHN. The most significant challenge has been in relation to communicating our intentions and providing a degree of certainty to our providers and other stakeholders regarding future funding cycles in this uncertain environment.

We look forward to having a clear understanding of future expectations, and more time to focus on high value engagement activities, collaborative planning and co-design in future iterations of the needs assessment and commissioning process. We also recognise the need to continue to build and demonstrate our own capacity as an effective and mature commissioning organisation, and to continue to develop strong partnerships and trust across our region in order to maximise the value of responsive regional population health planning.

1.6 Abbreviations

ABS	Australian Bureau of Statistics
AEDC	Australian Early Development Census
ASR	Age Standardised Rate
CALD	Culturally and Linguistically Diverse Communities
COPD	Chronic Obstructive Pulmonary Disease
FTE	Full Time Equivalent
GP	General Practitioner
INA	Initial Needs Assessment
IRSD	Index of Relative Socioeconomic Disadvantage
LGA	Local Government Area
LGBTIQ	Lesbian, Gay, Bisexual, Transgender, Intersex, Queer
NWMPHN	North Western Melbourne PHN
MBS	Medical Benefits Scheme
SA3	Statistical Area Level 3
SA4	Statistical Area Level 4

1.7 Acknowledgements

North Western Melbourne PHN gratefully acknowledges the input of the following organisations throughout the development of the needs assessments in 2017.

Access Health and Community	North East Primary Care Partnership
Asylum Seeker Resource Centre	Melton City Council
Australian Multicultural Community Services	North Richmond Community Health
Banyule Community Health	Northern Health
Brimbank City Council	Odyssey House Victoria
Cohealth	Orygen Youth Mental Health
Darebin Community Health	Plenty Valley Community Health
Dental Health Services Victoria	Royal District Nursing Service
Department of Health & Human Services	Salvation Army
Diabetes Victoria	St Vincent's Hospital Melbourne
Dianella Community Health	Stepping Up
Djerriwarrah Health	Sunbury Community Health
Drummond Street Services	The Melbourne Clinic
Eastern Melbourne PHN	The Royal Women's Hospital
Harm Reduction Victoria	Transgender Victoria
HealthWest Partnership (PCP)	Turning Point
Headspace National Office	Uniting Care ReGen
Hepatitis Victoria	Victorian Alcohol and Drug Association
Hobsons Bay City Council	Victorian Aboriginal Community Controlled Health Organisation
Hume Whittlesea Primary Care Partnership	Victorian Aboriginal Health Service
Inner East Community Health	Victorian Alcohol & Drug Association
Inner North West Primary Care Partnership	Victorian AIDS Alliance
IPC Health	Victorian PHN Alliance
Jesuit Social Services (Connexions)	Vincent Care
LeadWest	Western Health
Mackillop Family Services	Women's Health West
Maribyrnong City Council	Wyndham City Council
Melbourne Health	Yarra City Council
Mercy Health	Yarra Drug and Health Forum (YDHF)
Merri Health	Youth Projects
Melton City Council	Youth Support and Advocacy Service (YSAS)
Moorabool City Council	
Moonee Valley City Council	

SECTION 2 – OUTCOMES OF THE HEALTH NEEDS ANALYSIS

The methodology below has been used to rank and describe needs. Local data (usually LGA) has been compared with Victorian or Australian data and percentiles calculated. The variation in rates has been assessed and determined as high if they are within the 30th percentile for data where a high value is desirable (for example, cancer screening rates) or the 70th percentile where a low value is desirable (for example, death rates):

- **Extremely high (low):** Indicator is in the 90th-100th (0th-9th) percentile compared to the Victorian or Australian average (the average used will be indicated)
- **Very high (low):** Indicator is in the 80th-89th (10th-19th) percentile
- **High (low):** Indicator is in the 70th-79th (20th-29th) percentile
- **Moderately high (low):** Indicator is in the 60th-69th (30th-39th) percentile

Where data has been updated from the 2016 document, new tables have been created and formatted to illustrate the variation across the PHN area. Colour shading has been provided on the data on a red (poorer performance) to green (better performance) scale.

All Table references refer to data tables at Appendix A.

2.1 Population health

Identified needs	Key issues	Description of evidence

Summary

The health needs of the NWMPHN community reflect the diverse community and geographic area. This area is spread ranges from the inner city of Melbourne to the peri-urban rural communities in the north and west. The following key features are of note:

- There is substantial variation in the socioeconomic status of the community, with some areas substantially below the Victorian and national average. This directly correlates with high prevalence of chronic health conditions and low protective health behaviours.
- Most of the western part of the region is classified as a District of Workforce Shortage for general practice and specialist medical services. Similar

2.1 Population health

shortages exist for allied health services. This workforce shortage limits the capacity of the service system to meet the needs of the community.

Perinatal and infancy Identified needs in this age group are: • Supporting families with birth complications, neonatal disorders and congenital abnormalities. • Reducing the number of infant deaths. • Providing primary care for asthma and ear, nose and throat infections as an alternative to hospitalisation. • Encouraging breastfeeding rates.	Ensuring a healthy start in life for infants is critical to establishing a health foundation that will carry them through their lifetime. Rates of neonatal disorders and congenital abnormalities are similar to the Victorian average; while these needs may not be preventable, support to families both before and after care is critical. Other health needs include higher than average levels of potentially avoidable hospitalisations for asthma and ear, nose and throat diseases in some areas. Rates of infant mortality also vary across the	**Burdens of disease** 0-4 year olds in the PHN region (**Table 65**) • Congenital abnormalities (33.5 per cent of total burden). • Neonatal conditions (25.3 per cent of total burden). **Potentially avoidable hospitalisations** 0-4 year olds in the PHN region (**Table 66**) • Ear, nose and throat infections (27.5 per cent of total ACSCs). • Dental conditions (25.7 per cent of total ACSCs) **Infant mortality** (**Table 67**) • High in Melbourne, Brimbank,-Moorabool and Melton. **Breastfeeding rates** (**Table 68**) • Low in Darebin, Macedon Ranges, Hume, Melbourne and Yarra **Smoking during pregnancy** • Literature: Provision of Smoking Cessation Interventions During Pregnancy.[3]

[3] 3 Centres Collaboration, 'Guidelines: Provision of smoking cessation interventions during pregnancy' <http://3centres.com.au/guidelines/low-risk-pregnancy/provision-of-smoking-cessation-interventions-during-pregnancy>, accessed 26 October 2017.

2.1 Population health

	region, indicating the need for a targeted focus. Maternal health is also critical, both for mothers and for children to have strong relationships, which then impact upon the development of children. Other than mental health, major maternal health needs in this region include support with antenatal care and support with breastfeeding. Tobacco smoking during pregnancy is the most common preventable risk factor for pregnancy complications, and is associated with poorer perinatal outcomes including low birthweight, being small for gestational age, pre-term birth and perinatal death. 9.3 per cent of Victoria women smoked during the first 20	• Literature: Australian Institute of Health and Welfare 2017. Australia's mothers and babies 2015—in brief. Perinatal statistics series no. 33. Cat no. PER 91. Canberra: AIHW. **Maternal and Child Health service utilisation** • Participation rates at 3.5 years' ages and stages consultation (**Table 69**): Extremely low in Maribyrnong, Melbourne and Wyndham; very low in Melton; low in Hume, Moreland, Hobsons Bay, and Darebin. • Participation rates for Aboriginal people (**Table 70**): Very low in Maribyrnong; low in Darebin, Melbourne, Yarra, Brimbank and Moreland.

2.1 Population health

	weeks of pregnancy and some mothers are more likely than others to smoke in pregnancy. Proportions are highest among the following women: • younger mothers; • mothers living in the lowest socioeconomic status (SES) areas; and • Aboriginal and Torres Strait Islander mothers.	
Children Identified needs for this age group are: • Immunisation rates are low in some LGAs. • Rates of asthma across the region are higher than the Victorian average. • Oral health and dental care needs. • There is a high prevalence of low-	Establishing protective health behaviours at a young age is critical, as it sets children up for being healthy adults. However, some children in the PHN region face barriers to establishing these behaviours. Children in outer-west Melbourne experience higher rates of vulnerability, potentially correlated with being raised in areas of higher socio-economic disadvantage.	**Burden of disease** 5-14 year olds in the PHN region (**Table 71**) • Chronic respiratory diseases (42.3 per cent of total burden). **Potentially avoidable hospitalisations** 5-14-year old's in the PHN region (**Table 71**) • Dental conditions (43.8 per cent of total ACSCs). • Asthma (23.7 per cent of total ACSCs). **Vulnerability in childhood development** Vulnerability as reported in the Australian Early Development Census (**Table 73)**: • Children vulnerable on one domain Above the Australian average (22.0 per cent): Brimbank, Hume, Yarra, Wyndham and Melbourne.

2.1 Population health

value procedures in some LGAs.	Determinants such as rates of obesity and physical inactivity are high in some areas in this age group, and immunisation rates are low or borderline low in a range of areas across the PHN region. Rates of asthma prevalence and avoidable hospitalisations are higher in the region than the Victorian average. Rates of low-value procedures are also high areas, suggesting the need for targeted education work with GPs. These challenges will be exacerbated by high projected population growth, particularly in the outer west.	Above the Victorian average (19.9 per cent) only: Moorabool, Moreland, and Melton. • Children vulnerable on two or more domains Above Australian average (11.1 per cent): Brimbank, Hume, Yarra, Wyndham and Melbourne. Above the Victorian average (9.9 per cent) only: Moorabool, Moreland and Melton. **Immunisation** Rates below 91 per cent (**Table 74**) • One, two, and five-year immunisation: Low in Melbourne. • Five-year-old immunisation: Low in 10 of the 13 SA3's (excludes Hobsons Bay, Melton Bacchus Marsh, Keilor, Sunbury) **Asthma** The PHN has some of the areas with the highest estimated hospital admissions for asthma nationally. • Estimated annual asthma/respiratory hospital admissions (**Table 75**): Extremely high in Maribyrnong, Keilor, Brimbank, Melbourne City, Moreland North, Brunswick-Coburg; high in Tullamarine-Broadmeadows. • Asthma medicines dispensed, 3-19 years (**Table 76**): Extremely high in Sunbury; high in Brimbank and Macedon Ranges. **Low value surgical interventions** • Myringotomy admissions, under 17 years (**Table 77**): Very high in Sunbury and high in Macedon Ranges.

2.1 Population health

		• Tonsillectomy admissions, under 17 years (**Table 78**): Moderate in Sunbury and Macedon Ranges. **Determinants of health** • High estimated rates of children aged 2-17 that are overweight in Maribyrnong, Brimbank, Darebin and Moreland; and obese in Brimbank, Hume, Melton and Wyndham. (**Table 79, Table 80**) • High estimated rates of children aged 2-17 that have inadequate fruit intake in Melbourne (**Table 81**)
Young people Identified needs for this group are: • Sexual health. • Mental Health (see also 'Mental Health' section)	Recently there have been significant gains in the health of young people including: • a large decline in death rates (due to fewer injury deaths); • asthma and hepatitis hospitalisations have decreased and there is improved survival for cancer; • favourable trends are occurring in some risk and protective factors, such as smoking and illicit substance	**Burden of disease** 15-24-year old's in the PHN region (**Table 82**): • Mental disorders (52.7%). • unintentional injuries (13.7). • Intentional injuries • Chronic respiratory conditions. **Potentially avoidable hospitalisations** (**Table 83**) • Dental conditions. • Ear, nose and throat infections. • Pyelonephritis. **Literature**

2.1 Population health

	use; • most sexually active Year 10 and 12 students are using contraception; and • most young people can get support from outside the household in times of crisis. These health gains need to be contrasted against rising rates of diabetes and sexually transmissible infections, high rates of mental illness and, for males, road transport accident deaths. Many young people are overweight or obese, not physically active or eating enough fruit and vegetables, and drinking at risky or high-risk levels. Many young people are also victims of alcohol or drug-related violence, or are homeless. Within our catchment, priority communities include	Australian Institute of Health and Welfare. Young Australians: their health and wellbeing 2011. Canberra: AIHW; 2011.

2.1 Population health

	disadvantaged areas in Brimbank and Hume and the high growth areas in Melton and Wyndham.	
Adults Identified needs for this group are: • Primary prevention activities to promote healthy lifestyles to prevent the onset of chronic disease. • Services to manage chronic disease (refer to 'Population health – Chronic disease').	Adults of working age experience major life events and transitions such as establishing themselves in the workforce, purchasing a home, raising a family, changing careers and retirement planning. Restrictions to their health can reduce their earning capacity and affect how these life events are experienced. It is also during working age that many long-term health conditions emerge and behaviours and patterns that can influence longevity or health in later years are established. Although young adults experience fewer long-term	**Burden of disease** (**Table 84, Table 86 and Table 90**) As adults age, lifestyle diseases become increasingly prevalent. Key burdens of disease include: • Malignant cancers. • Cardiovascular diseases. • Diabetes mellitus. • Neurological and sense disorders. Mental disorders remain prevalent, but become less so relative to other chronic diseases. **Potentially avoidable hospitalisations** (**Table 88** and **Table 89**) Major avoidable hospitalisations for 25-64-year old include: • Iron deficiency anaemia. • Cellulitis • Dental conditions (25-44) and Diabetes complication (45-64) As adults age, chronic obstructive pulmonary disease becomes increasingly prevalent.

2.1 Population health

	health conditions than older age groups, they can put themselves at a greater risk of developing these conditions later in life if their lifestyles and behaviours are unhealthy. Compared with the younger age group, people aged 45-64 are more likely to die due to a chronic disease. Cancer and coronary heart disease were the predominant conditions causing death in both men and women. Many chronic diseases are linked to lifestyle determinants such as rates of obesity/being overweight, physical inactivity, poor diet and smoking. The outer west and north generally have higher rates of these determinants, indicating correlation with socio-economic disadvantage.	

2.1 Population health

Older adults Identified needs in this age group are: • Co-ordinating care for older adults, particularly those with several co-morbidities. • Ensuring that residential aged care facilities are sufficiently equipped to provide and/or facilitate access to high-quality primary care services. • Co-ordinating end of life care.	Major chronic diseases become increasingly prevalent as people age. Thus, the health needs of many older adults are compounded by the need to manage comorbidities. At a system level, an integrated approach to co-ordinating care is required. This is particularly pertinent for older adults in residential care or on home care packages, who must be able to access high quality services to meet their needs. Additionally, older adults also need to be able to access palliative care and end-of-life planning as they reach the end of their lifecycle. This may require co-ordination for priority groups such as CALD communities. Additional focus on the quality use of medicines can assist in	**Burden of disease** (**Table 90** and **Table 91**) In this age group, chronic diseases become prevalent and complex comorbidities arise, including: • Malignant cancers. • Cardiovascular diseases. • Neurological and sense disorders such as dementia. • Chronic respiratory diseases. • Diabetes. **Potentially avoidable hospitalisations** (**Table 92**) • Congestive heart failure (22 per cent of ACSCs). • Chronic obstructive pulmonary disease (16 per cent of ACSCs) • Iron deficiency anaemia (12 per cent of ACSCs) **Pharmaceutical data** • Dementia medication dispensations (**Table 93**): Very high in Melbourne City, Darebin North and Yarra; high in Darebin South. • Opioid medication dispensations (**Table 94**): High in Sunbury and Melton-Bacchus Marsh. This may be linked to chronic musculoskeletal pain. **Data gaps** • Advance care planning data, including statistics on where people die compared to where they nominate wanting to die in their advance care plan.

2.1 Population health

	addressing the variability in prescription rates, in conjunction with the implementation of real-time prescription monitoring and up-listing of codeine based drugs in 2018.	• Code 3 ambulance data for injuries such as falls.
Major diseases – all age groups Identified needs for all age groups are: • Very high rates of diabetes across the PHN region. • High rates of respiratory disease in young children and older adults. • High rates of hypertension and other cardiovascular diseases. • Cancer as a major burden of disease in all	**Chronic disease – diabetes** Diabetes is a major priority area across all age groups. The PHN region has significantly higher rates of diabetes than the Australian average across most LGAs, and the burden of disease presented in the PHN region is rated higher than the Victorian average. Diabetes as a major burden of disease first becomes prominent in the 35-44 age group, although younger adults and young children may face avoidable hospitalisations from diabetes complications. As a predominantly lifestyle disease,	**Burden of disease** (**Table 95**) Diabetes: • Fourth-highest burden of disease for 35-65-year old's – this is higher than the state average, where diabetes is the fifth-highest burden of disease. • Fifth-highest burden of disease for 65+ year old's. **Potentially avoidable hospitalisations** (**Table 96**) • Highest avoidable hospitalisation for adults aged 25 and over. • Third highest avoidable hospitalisation for 15-24-year old's. • Sixth highest avoidable hospitalisation for 5-14-year old's. **Prevalence** (**Table 97**) • Estimated population with diabetes mellitus: Diabetes rates are extremely high, very high or high in 10 of the 13 LGAs in the PHN region • Extremely high: Brimbank, Hume, Maribyrnong, Darebin, Moreland.

2.1 Population health

populations. • Ensuring that infants and those in aged care avoid preventable urinary tract infections and kidney infections. • Primary and Secondary prevention.	health needs in this region include the need for prevention as well as management.	• Very high: Melton. • High: Hobsons Bay, Yarra, Moonee Valley, Wyndham.
	Chronic disease – respiratory disease Respiratory system diseases primarily affect two age groups. Asthma is a major burden of disease for infants, children and young people; this region has some of the highest rates of asthma hospitalisations nationally, indicating that the needs of those with asthma may not be adequately met in the primary health system. Older adults are more greatly affected by chronic obstructive pulmonary disease and other respiratory diseases. Very high morbidity rates in western Melbourne suggests that the primary care system may not be adequately meeting health	**Burden of disease** (**Table 98**) • Highest burden of disease for 5-14-year old's. • Fourth-highest burden of disease for 0-4-year old's and 65+ year old's. **Potentially avoidable hospitalisations** (**Table 100**) • Asthma Highest for 0-4-year old's (40.8 per cent of ACSCs) and second highest for 5-14-year old's (27.8 per cent of ACSCs). Avoidable hospitalisation rates for asthma are higher than the state average. **(Table 98)** • Chronic obstructive pulmonary disease second highest for 45-64-year old's (7.3 per cent of ACSCs) and highest for 65+ year old's (15.6 per cent of ACSCs). **Prevalence** **(Table 102**) • Estimated population with asthma: Extremely high in Moorabool and Macedon Ranges. **Morbidity**

2.1 Population health

	needs.	• Average annual deaths from respiratory system diseases (**Table 103**): Hume, Maribyrnong and Melton. • Average annual deaths from chronic obstructive pulmonary disease (**Table 104**): High in Maribyrnong; Moderate in Hobsons Bay and Hume. **Data gaps** • Prescribing of asthma medicines. • Hospital admissions.
	Chronic disease - cardiovascular Cardiovascular disease (including both hypertensive and cardiac disease) is one of the major diseases for adults and older adults, and a leading cause of death.	**Burden of disease** (**Table 105**) • Third highest burden of disease for 35-54-year. • Second highest burden of disease for 55-74-year. • Highest burden of disease for 75+ year. **Potentially avoidable hospitalisations** (**Table 106**) • Congestive cardiac failure is the third highest avoidable hospitalisation for 65+ years. **Prevalence** • Circulatory disease (**Table 108**) Extremely high in Maribyrnong; very high in Melton. • Hypertensive disease (**Table 109**):

2.1 Population health

		Extremely high in Melbourne, Yarra, Maribyrnong, Moreland, Brimbank and Darebin; Very high in Hobsons Bay and Hume. **Mortality** • Circulatory disease, 0-74 years (**Table 110**): Extremely high in Maribyrnong; Moderate in Darebin, Hume and Melton. • Ischaemic heart disease, 0-74 years (**Table 111**): Very high in Maribyrnong; Moderate in Hume and Darebin. • Cerebrovascular disease, 0-74 years (**Table 112**) High in Brimbank and Hobsons Bay; Moderate in Maribyrnong, Moorabool and Melton. **Other literature** • The Heart Foundation has developed data on the selected cardiac conditions and out-of-hospital cardiac arrest by local government area in Victoria. The maps also show risk factors and selected socio-demographic data by local government area. These data are consistent with the burden of disease data above. http://heartfoundation.org.au/programs/victorian-heart-maps.
	Chronic disease – mental health Refer to the mental health section of the needs analysis.	
	Cancer Cancer is one of the major burdens of disease for adults, and becomes increasingly prevalent as adults' progress	**Burden of disease** (**Table 113**) • Highest burden of disease for 45-74-years. • Second highest burden of disease for 35-44-year old's and 75+ years.

	throughout their lifespan. Across the region, there are areas with higher incidence of cancer morbidity but lower rates of cancer screening. For some types of cancer (e.g. lung cancer), there may be a correlation between the prevalence of cancer and higher rates of socio-economic disadvantage.	• Fourth highest burden of disease for 25-34-years. **Screening rates** • Bowel cancer *Screening* (**Table 114**): Low screening in Tullamarine-Broadmeadows, Moreland North, Melbourne, Darebin-North, Wyndham. • Breast cancer *Screening* (**Table 118**): Low in Melbourne, Yarra, Darebin - North, Darebin-South *Diagnosis* (**Table 119**): High in Moonee Valley, Darebin, Moreland and Melbourne. • Cervical cancer *Screening* (**Table 120**): Low in Melbourne, Wyndham, Tullamarine – Broadmeadows, Darebin – North, Darebin – South *High grade abnormalities* (**Table 121**): Extremely high in Yarra; Very high in Melbourne. **Mortality** • Colorectal cancer mortality rates (**Table 123**): Very high in Moreland and Hobsons Bay; High in Yarra and Brimbank.

2.1 Population health

		• Lung cancer mortality rates (**Table 124**): Very high in Hobsons Bay; High in Yarra. • Breast cancer mortality rates (**Table 125**): High in Moreland and Hobsons Bay; Moderate in Melton and Yarra. **Data gaps** • Cancer survival rates. • Cancer treatment rates. • Determinants of cancer – asbestos, chronic Hepatitis B.
	Communicable disease While Australia has made great progress in addressing blood-borne viruses and sexually transmitted infections over the past three decades, these conditions still represent a significant burden of disease with the number of people affected remaining too high and in some cases increasing. The burden is higher amongst vulnerable population groups, and given the relatively high	**HPV vaccine rates** • Rates of coverage: Very low in Melton and Melbourne; Low in Macedon Ranges and Moderately low in Hume (**Table 137**). **Blood-borne diseases** • Extremely high levels of notification rates of Hepatitis B – unspecified and Hepatitis C - unspecified in Melbourne, Extremely high Hepatitis B - unspecified in Brimbank, Maribyrnong and Wyndham. (**Table 138**) • Extremely, very high and high levels of STI notifications rates (chlamydia, gonorrhoea, syphilis, HIV) across the PHN (**Table 139**).

2.1 Population health

	proportion of these within NWMPHN it is an important area.	
	Musculoskeletal disease The severity of impact of musculoskeletal disease may be as high as other chronic diseases, and as a comorbidity, musculoskeletal disease can also negatively impact mental health through persistent low-level chronic pain.	**Burden of disease** (**Table 115)** • All ages**:** 3.2 per cent of total disease burden across PHN and Victoria, forming the eighth most burdensome disease. • 45-54 years**:** 5.2 per cent of disease burden across PHN and 5.1 per cent across Victoria, forming the sixth most burdensome disease. **Prevalence** • Estimated prevalence across the region is consistent with the Victoria average (**Table 116**)**.**
	Urinary tract/kidney infections Urinary tract and kidney infections are one of the major diseases causing avoidable hospitalisations across all age groups. In general, urinary tract and kidney infections affect two age groups: infants and older adults, particularly those in aged care. In both groups, kidney	**Potentially avoidable hospitalisations** (**Table 117**) • All ages: 8.7 per cent across PHN, compared with 9.4 per cent across Victoria. Forms the third highest cause of potentially avoidable hospitalisations. • 15-24 years: 13 per cent across PHN, compared with 13.8 per cent across Victoria. Forms the highest cause of potentially avoidable hospitalisations.

2.1 Population health

	infections can indicate a need for either higher quality service provision or better education on infant hygiene practices.	
Aboriginal and Torres Strait Islander people.	Aboriginal and Torres Strait Islanders people are likely to experience significantly poorer health and life outcomes across all ages and stages, from pregnancy to premature mortality. While the NWMPHN region has a relatively small Aboriginal and Torres Strait Islander population, the major health inequalities experienced by this group across a range of indicators suggest that these populations in the region require specific interventions to ensure more equitable access to health services.	A detailed analysis of the health needs of Aboriginal communities is included in the 'Closing the Gap' report at: /nwmphn.org.au/wp-content/uploads/2017/06/Closing-the-Gap-in-North-Western-Melbourne-PHN.pdf. A short snapshot of key statistics is included below. **Determinants: All age groups** • Population: Aboriginal residents tend to be younger than non-Aboriginal residents. • Disadvantage: almost 40 per cent of Aboriginal people in Victoria are at the highest level of disadvantage (lowest 20 per cent of Index of Relative Socio-Economic Disadvantage scores). • Education: 30 per cent gap in Year 12/equivalent or ACQ attainment between Aboriginal and non-Aboriginal Australians. • Employment: Aboriginal people are 25-30 per cent less likely to be in the labour force. Those out of the workforce are more likely to smoke, eat poorly, feel less healthy and have chronic diseases. • Housing and homelessness: 25 per cent of all Australian people experiencing homelessness are from an Aboriginal background. Victorian Aboriginal men and women are more likely to use homelessness services to escape family violence. • Racism and discrimination: 17.2 per cent of Aboriginal people in non-remote areas reported experiencing racism or discrimination in the last 12 months.

2.1 Population health

- Crime and violence: hospitalisations for family assaults are 28.3 times more likely for Aboriginal men and 34.2 times more likely for Aboriginal women. Aboriginal imprisonment in Victoria increased nearly 30 per cent from 2010 to 2013, however remains lower than overall Australian rates.

Perinatal and infancy

Pregnancy and birth

- Aboriginal women generally give birth at an earlier age and have more children than non-Aboriginal women.
- Single-birth Aboriginal babies are twice as likely to be underweight than non-Aboriginal babies.

Health needs

- Breastfeeding: Aboriginal children in Victoria under three years old are less likely to be breastfed than non-Aboriginal children, and Aboriginal mothers appear to stop breastfeeding earlier.
- Immunisation: Aboriginal immunisation rates are lower at one year old, but higher at five years old.

Infant mortality

- Mortality rates are higher for Aboriginal infants and children than non-Aboriginal infants and children.
- Deaths from sudden infant death syndrome and respiratory diseases are more common for Aboriginal than non-Aboriginal infants.

2.1 Population health

		Service utilisation • Maternal and Child Health Nurse: Attendance rates are lower for Aboriginal people in Victoria.
		Children and young adults **Determinants** • Child protection: Aboriginal children are nine to ten times more likely to be the subject of a substantiated child protection report than non-Aboriginal children. • Vulnerability: Victorian Aboriginal children are more likely than non-Aboriginal children to be classified as 'vulnerable' across all five domains. • Bullying: Victorian Aboriginal children experience more bullying than non-Aboriginal children. **Health needs indicators** • Disability: Aboriginal children are approximately three times more likely to have a disability than Victorian non-Aboriginal children. • Injury: Aboriginal children across Australia are between 5 and 8.8 times more likely to be hospitalized for assaults than non-Aboriginal children. • Mortality: The mortality rate for 5-14-year old's is 17.6 per 100,000, almost double the rate for non-Aboriginal children.
		Adults and older adults **Chronic disease** • Aboriginal people are more likely to have a range of key chronic diseases, such as

2.1 Population health

chronic kidney disease, than non-Aboriginal people.

Cancer

- Rates: Rates of lung and cervical cancer are significantly higher for Aboriginal people than non-Aboriginal people in Victoria.
- Mortality: Aboriginal women are five times more likely to die of cervical cancer.

Other health needs

- Disability: Non-remote Aboriginal adults have higher recorded rates of all types of disability than non-Aboriginal adults, and almost 20 per cent of older adults over 55 have a disability requiring daily assistance.
- Hearing: Aboriginal adults are twice as likely to have a hearing problem than non-Aboriginal adults.
- Blood-borne viruses: Rates of STIs and blood-borne viruses, except for HIV, are substantially higher for Aboriginal people than non-Aboriginal people across Australia.

Avoidable hospitalisations

- Aboriginal people in major cities are hospitalised at a higher rate (7.2 per cent) than non-Aboriginal people (4.1 per cent).
- The rate of diabetes ACSCs is extremely high for Aboriginal people compared to non-Aboriginal people.

Mortality

- Life expectancy: Aboriginal people live for approximately 10 years less than non-Aboriginal people.

2.1 Population health

		• Mortality: Aboriginal people die of endocrine, nutritional and metabolic disorders, including diabetes, at more than 4.5 times the rate of non-Aboriginal people. • Avoidable mortality: Aboriginal people are seven or more times more likely to die of diabetes, kidney disease, violence, and rheumatic and valvular heart disease.
Other vulnerable groups.	*Homeless persons* • Homelessness has a negative impact on physical and mental health, and there is a strong link between homelessness and poor mental health. • NWMPHN region has extremely high rates of homelessness reported in 5 LGA's *CALD* • Barriers to accessing the health system through lack of engagement or understanding. • Many have different cultural practices (e.g. around aged/palliative care).	**Homeless persons** • Approximately 42.6 per 10,000 persons are homeless in Victoria, compared to a national average of 48.9. There are extremely high rates of homelessness in Melbourne, Yarra, Maribyrnong, Darebin and Moreland **(Table 140**). • Approximately 3 per cent of homeless persons in Victoria are primarily homeless because of mental health or substance abuse issues. • The primary reasons for homelessness are domestic violence (33 per cent), accommodation issues (29 per cent) and financial difficulties (27 per cent). • People with disabilities are more likely to become homeless; across Australia, approximately 25 per cent of clients of homeless services have a disability, but people with disabilities only constitute approximately 18 per cent of the population. • Aboriginal and Torres Strait Islanders are substantially more likely to be homeless; in 2014-15, 23 per cent of people supported by specialist homelessness services identified as Aboriginal or Torres Strait Islander, and more than 25 per cent of these were children aged 0-10. • See also information in the Mental Health (section 2.2).

2.1 Population health

	Recent humanitarian arrivals • Less likely to know how to navigate the health system. • May not be aware of health practice. • Are likely to have experienced trauma and may require additional psychological support. *LGBTIQ* • Are more likely to face stigmatisation, bullying and minority stress which have a strong impact on poor mental health. • Have some specific health issues (e.g. sexual health risks, blood-borne viruses, utilisation of cross-gender hormone treatments).	

2.1 Population health		
Health literacy	Health literacy is a major issue in the region, given the levels of cultural diversity, new arrivals from refugee and asylum seeker backgrounds and areas of general disadvantage. Low levels of health literacy are consistently associated with a range of negative health outcomes. These include increased hospitalisations and greater use of emergency care; lower use of mammography and preventative medicine such as influenza vaccination; a lack of ability to interpret labels and health messages and take medications appropriately; and, among seniors, poorer overall health status and higher mortality.	• Approximately 50 per cent of the Victorian population has below adequate literacy (level three or above) to meet the complex demands of everyday life, including managing and engaging in their own health care.[4]

[4] Australian Bureau of Statistics. Adult Literacy and Life Skills Survey, Summary Results. Australia, 2006. Results of national survey concerning Health Literacy in 2006. http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4228.0.55.0042006?OpenDocument

2.2 Mental health needs

Identified needs	Key issue	Description of evidence
Summary Mental health issues are present across the life span creating high levels of need at key transition stages where developmental milestones provide a critical grounding for general health and development. Child development is a critical foundation for the challenges of young adulthood/youth where the development of mental illnesses often occurs, 75% of mental health disorders manifest themselves before 25 years old. In the productive adult years, the burden of mental illnesses becomes highest and creates challenges around the life years lost through disability. A key challenge for the system is the rise of dementia, and supporting patients and their families. The NWMPHN population has greater mental health needs when compared with other areas of Victoria and Australia. Specifically, the catchment includes populations with higher rates of social and economic disadvantage, large CALD populations, large numbers of people who identify as LGBTIQ and many people experiencing homelessness. These groups require greater access to highly tailored mental health and counselling services and supports when compared with the general population. Additionally, there are some locations with specific mental health needs, such as Wyndham, Brimbank and Macedon Ranges. The following section provides detailed identification of these mental needs, specific issues and supporting evidence or identification of relevant data gaps where relevant.		
Mental health *Perinatal and infancy* Identified needs for this group are: • Perinatal depression rates and the subsequent impact on parent-infant attachment and early childhood	While local data on perinatal depression rates are not readily available, national prevalence data indicate that this condition is an important health issue, particularly in localities with high birth rates. Evidence suggests that many people access their general practitioner for support with	**Maternal mental health** • ATAPS (**Table 1**): 2012-2015 discrepancies between the number of referrals (1.3 per cent of all referrals) and attendance of appointments (0.8 per cent of all attendances) indicates that women may have faced barriers to accessing services. Barriers may include long distances to travel, financial barriers to travel and lack of access to public and private transport. The 2015-16 data do not show this discrepancy. **Infant mental health** • It is estimated that up to 1 in 10 women and 1 in 20 men experience antenatal depression, and more than 1 in 7 new mothers and up to 1 in 10 new fathers experience

2.2 Mental health needs

development.	perinatal depression.[5] Limited service access data indicate that referral rates to psychological services may not align with actual need, and uptake of those referrals is also worryingly low. Given the importance of the first 1000 days of life, providing coordinated and accessible support for new parents is critical in terms of ensuring that infants born in our region are building healthy relationships, thriving and achieving developmental milestones.	postnatal depression every year.[6] • Analysis of data from the 2010 Australian National Infant Feeding Survey estimated that 56,000 women would have been suffering with depression in the perinatal period (that is, the depression was diagnosed from pregnancy until the child's first birthday) at the time of the survey.[7] Perinatal anxiety is also considered to be very high. • Perinatal mental health issues have been shown to lead to poorer developmental outcomes for the infant with associated bonding and attachment issues which can create lifelong challenges for personality development and building relationships. **Data gaps** • Local prevalence data and screening data. • Data on perinatal depression in Aboriginal and Torres Strait Islander people, and parents of Aboriginal and Torres Strait Islander infants.
Mental health *Children and young adults*	Mental disorders and psychological stress represent a	**Burden of disease** **5-14-years and 15-24-years** (**Table 2**)

[5] Australian Institute of Health and Welfare 2012. Experience of perinatal depression: data from the 2010 Australian National Infant Feeding Survey. Information Paper. Cat. no. PHE 161. Canberra: AIHW.

[6] Perinatal Anxiety and Depression in Australia. Factsheet: *Anxiety & Depression in Pregnancy & Early Parenthood.* Accessed August 2017 at https://www.panda.org.au/images/resources/Resources-Factsheets/Anxiety-And-Depression-In-Early-Parenthood-And-Pregnancy.pdf

[7] Australian Institute of Health and Welfare 2012. Experience of perinatal depression: data from the 2010 Australian National Infant Feeding Survey. Information Paper. Cat. no. PHE 161. Canberra: AIHW.

2.2 Mental health needs

Identified needs for this group are: • Mental disorders and psychological stress are a major burden of disease for children and young adults, particularly in the outer-suburban areas with higher levels of socio-economic disadvantage. • The associated need for equitable access to psychological services for children and young adults, with a focus on vulnerable populations.	major burden of disease for children and young adults, particularly those in the outer-suburban areas with high levels of socio-economic disadvantage. Prevention and early intervention of mental health issues present the greatest opportunities to limit the impact of mental illness on individuals and families. The prevalence of mental health problems relates to young people's transitional stage in their lifecycle, where they may be particularly impacted by issues such as bullying, gender identity and sexuality. These issues may manifest themselves in stress, anxiety, lowered mood, eating disorders, self-harm and suicide.	• Mental disorders are the second-highest burden of disease for 5-14-year old's (20.5 per cent of total burden) and the highest burden of disease for 15-24-year old's (52.7 per cent of total burden). • Intentional injuries (self-harm) are the third-highest burden of disease for 15-24-year old's (5.6 per cent of total burden). However, when separated by gender, intentional injuries only rank in the top five diseases for males. **Determinants** • Socio-economic disadvantage (**Table 64**): Pockets of disadvantage exist across the PHN region, with Brimbank, Hume and Maribyrnong LGAs have among the lowest scores for the SEIFA Index of Relative Socio-Economic Disadvantage (IRSD). • Bullying rates (**Table 3**): Predominantly at or below Victorian median LGA values with the exception of Wyndham (very high) and Melton (high) for years 5-6 and Moorabool (extremely high) for years 7-9. • Child protection substantiations (**Table 4**): High rates observed in Melton and Brimbank Most LGBTIQ young people experience the same range of mental health concerns as their peers. Gender diversity in itself does not cause mental health problems. LGBTIQ young people may be more likely to experience a range of stressful occurrences however that contribute to an increased risk of depression, anxiety, self-harm and suicide. Substance misuse, mental health problems and domestic violence are commonly associated with child protection involvement and are described as "key risk factors" for child abuse and neglect. There is substantial research documenting the association between these parental problems and poor outcomes for children. Children are particularly vulnerable to cumulative harm in families with multiple and complex problems in which the unremitting daily impact

2.2 Mental health needs

	The establishment of an additional headspace centre in Melton is an important development for the region. The NWMPHN is commissioning this service that will provide additional capacity in the high demand and population growth area in the outer west of Melbourne.	of multiple adverse circumstance and events has a profound and exponential impact on children, and diminishes their sense of safety and wellbeing.[8] **User profile – headspace** Compared to headspace centres nationally, service users at the headspace centres in the PHN region have: • Greater progression of mental illness than the national average. • Generally higher outcomes on the Kessler Psychological Distress Scale (K10). • Generally lower outcomes on the Social and Occupational Functioning Assessment Scale. • Higher average visit frequency. Services within the PHN region have a higher proportion of Culturally and Linguistically Diverse (CALD) and Lesbian, Gay, Transgender, Intersex and Queer (LGBTIQ) users, and a lower proportion of Aboriginal and Torres Strait Islander users than national averages. This reflects the demographic profile of the NWMPHN region. **Service usage – headspace** Compared to headspace centres nationally, service users at the headspace centres in the PHN region: • Are more likely to have been referred by their general practitioner (GP). This may reflect better engagement of GPs or underutilisation of the other referral pathways such as schools.

[8] Australian Institute of Family Studies, December 2010. Issues for the safety and wellbeing of children in families with multiple and complex problems. The co-occurrence of domestic violence, parental substance misuse, and mental health problems. NCPC Issues No. 33

2.2 Mental health needs

		• have higher formal written referrals. • Have higher primary funding from Medicare Benefits Schedule (MBS) for each occasion of service (**Table 10 - Table 14**).
Mental health *Adults* Identified needs for this group are: • High prevalence and significant impacts of mental health and wellbeing issues across the region, with extremely high rates of psychological distress in both some outer-suburban and inner-metropolitan LGAs. • The associated need for equitable access to psychological services.	Mental health problems are prevalent across the region. High levels of psychological distress are evident in a number of areas with higher levels of socio-economic disadvantage. In these areas, general mental health issues may be exacerbated by additional financial and social stresses, substance abuse, family violence and challenges such as gambling. Poor mental health can lead to lost income and productivity, and increase the risk of homelessness and disadvantage. The presence of a number of correctional facilities in western Melbourne, and the subsequent settlement of	**Burden of disease** • 25-64-year old's (**Table 15**) Mental disorders are in the top five burdens of disease across all age groups, but are ranked highest in younger adults (25-34 years), before falling in rank due to the rising prevalence of chronic diseases. **Determinants** • Financial stress and Food Security: some areas have a high to extremely high levels of financial stress and/or food insecurity – Hume, Brimbank, Melton, and Wyndham (**Table 16** to **Table 18**) • Gambling: extremely high electronic gaming machine losses per adult (expenditure ($) per adult person) in many areas especially, Brimbank Maribyrnong, Moonee Valley, and Hume (**Table 21 and Table 23**). **Prevalence of mental health issues** • Mental and behavioural problems (**Table 23**): High in Melbourne. • Psychological distress (**Table 24**): Statewide, the proportion of adults with high or very high psychological distress levels has increased from 11.4% in 2011 to 12.3% in 2014. Relatively high levels remain in Brimbank, Moonee Valley, Maribyrnong, Hume and Darebin

2.2 Mental health needs

	individuals on parole in western Melbourne, also creates a concentration of people with high service needs. Intimate partner violence is responsible for more ill-health and premature death in Victorian women under the age of 45 than any other preventable risk factor, including high blood pressure, obesity and smoking. Direct health consequences for women exposed to violence include depression, anxiety, suicide attempts, physical injury, and a variety of reproductive consequences. The impacts of abuse can persist long after it has stopped, and the more severe it is, the greater the impact on a woman's ongoing physical and mental health.	• ATAPS referrals (**Table 25**): Depression is the highest primary care diagnosis in referrals, with anxiety the second highest. • MBS-funded mental health plans (**Table 27**): Extremely high rates observed in Sunbury, very high recorded in Darebin-South and high levels in Brunswick-Coburg and Yarra when compared to all other Victorian SA3s. **Intimate partner violence** • Literature: VicHealth. The Health Costs of Violence: Measuring the Burden of Disease Caused by Intimate Partner Violence. Carlton South, Vic: Victorian Health Promotion Foundation, 2004 (reprinted 2010). Accessed 26 October 2017. https://www.vichealth.vic.gov.au/media-and-resources/publications/the-health-costs-of-violence. • Family Incidents (**Table 141).** Family violence incidence rates within NWMPHN are predominantly within range of the Victorian median, with Moonee Valley low and Macedon Ranges moderately low **Data gaps** • Rates and locations of family violence in the PHN region. • Data on individuals exiting correctional facilities and being placed on parole who are settled in the PHN region, including volume, demographic data, settlement location and health and social needs.
Mental health	With the rising burden of	**Determinants**

2.2 Mental health needs

Older adults Identified needs for this group are: • The increasing prevalence of dementia nationally. • Relative high rates of dispensing of mental illness and dementia related medicines.	lifestyle related chronic disease in this cohort, mental health issues are often unrecognised or treated effectively within the primary care system, and so may be underreported. Dementia rates are rising nationally and will continue to do so as the population ages, it is therefore important that appropriate services are available for people across the region, including better assessment, identification and treatment.	• Rates of 75+ year old's living alone (**Table 35)**: Melbourne LGA has the highest rate within the NWMPHN area, with Yarra also displaying very high levels with almost 2 out of 5 75+ persons living alone in those LGAs. • Aged pension recipients **(Table 36)**: A large proportion of the LGAs (7 of 13) have high numbers of aged pension recipients, related to the relatively low socioeconomic status of the area. • Prevalence of dementia: Local data is not available for the NWMPHN area, but across Australia, three in ten people over the age of 85 and almost one in ten people over 65 have dementia (AIHW). **Pharmaceutical data** • Dispensing antipsychotic medication, 65 years and over (**Table 37**): 13 of 16 SA3s within NWMPHN catchment are within to top quartile (highest 25%) of Victorian SA3s. Keilor and Wyndham are mildly elevated, while Macedon Ranges is well below the Victorian SA3 median. Yarra, Brunswick-Coburg, Melbourne City, Maribyrnong, Darebin-South and Darebin-North are in the highest 10% of Victorian SA3 values • Dispensing of anxiolytic medication, 65 years and over (**Table 38**): 14 of 16 NWMPHN SA3s are the Victorian SA3 median. Melton-Bacchus Marsh and Maribyrnong display extremely high rates (within top 10% of Victorian SA3) with very high rates observed in Yarra, Sunbury, Brunswick-Coburg and Tullamarine-Broadmeadows. Keilor and Melbourne City exhibit approximately median values while Macedon Ranges is well below median. • Dispensing of anticholinesterase medication (**Table 39**): High rates displayed by Melbourne City and Darebin-North, high rates in Yarra and

2.2 Mental health needs

		Darebin-South. Extremely low rates observed in Brimbank, Wyndham and Maribyrnong. **Data gaps** • Local prevalence of dementia.
Mental health *Vulnerable populations* Identified needs for this group are: • Vulnerable people are more likely to experience mental health issues, and less likely to have good access to services, impacting on their recovery rate and quality life. • The need for access to safe and appropriate psychological services and social supports.	**Aboriginal and Torres Strait Islander people** Aboriginal and Torres Strait Islander people experience higher rates of socio-economic disadvantage, family violence and assaults, racism and discrimination, homelessness and unemployment. Aboriginal and Torres Strait Islander people generally have higher rates of mental illness, self-harm and suicide, mental illness-related hospitalisations and drug and alcohol comorbidities. Culturally appropriate, accessible integrated health and social services are required to meet the complexity of their health	Please refer to the Closing the Gap report at Appendix B for more detailed statistics and data sources. Please also refer to the determinants list in the 'Population health – Aboriginal and Torres Strait Islanders' section. A summary is included within the below sections: **Child mental health** • Bullying: In Victoria, Aboriginal and Torres Strait Islander children experience more bullying than non-Aboriginal children. • Parental concerns: Aboriginal and Torres Strait Islander parents of children entering the first year of school were more likely to be concerned about child behavioural concerns, high family stress in the previous month and child emotional/behavioural difficulties. • Child protection substantiations: High rates observed in Melton and Brimbank (**Table 4).** **General mental health** • Aboriginal and Torres Strait Islander people over 18 are 2-3 times more likely to report higher levels of psychological distress than non- Aboriginal and Torres Strait Islander people. • Aboriginal and Torres Strait Islander women and Aboriginal and Torres Strait Islander people aged 45-54 report the highest levels of psychological distress when compared to the overall Aboriginal and Torres Strait Islander population. • Aboriginal and Torres Strait Islander people in major cities and inner regional areas reported feeling more nervous, without hope, restless or jumpy, that everything was an

2.2 Mental health needs

	and other needs.	effort, and so sad that nothing could cheer them up compared to non- Aboriginal and Torres Strait Islander people. • Across Australia, a higher proportion of Aboriginal and Torres Strait Islander GP encounters (737.5 per 1,000 compared to 585.2 per 1,000 in the non- Aboriginal and Torres Strait Islander population) were focused on managing mental health. **Self-harm** • Aboriginal and Torres Strait Islander people under 25 are almost four times more likely to die from self-harm than non- Aboriginal and Torres Strait Islander people. • Self-harm deaths were highest among 25-34-year old between 2008-12. • Over 3 times as many Aboriginal and Torres Strait Islander males and 2.3 times as many Aboriginal and Torres Strait Islander females are hospitalised for self-harm than non-Aboriginal and Torres Strait Islander people. **Hospitalisations** • In Victoria, Aboriginal and Torres Strait Islander people were more likely in 2012-13 to be hospitalised for schizophrenia, mental and behavioural disorders due to psychoactive substance abuse, neurotic stress-related disorders, disorders of adult personality and behaviour, and mood disorders. **Comorbidities** • Hospitalisations: In 2012-13, Victorian Aboriginal and Torres Strait Islander people were 2.5 times more likely to be hospitalised for mental and behavioural disorders due to psychoactive substance use. • Homelessness: A high percentage of homeless persons are Aboriginal and Torres Strait Islander relative to the size of the Aboriginal and Torres Strait Islander population in

2.2 Mental health needs

		Victoria.
	People experiencing homelessness Mental health is a major risk factor for homelessness, and the incidence of mental illness in the homeless population in Australia is higher than for the general population. In turn, homeless persons may face additional barriers, such as cost, transience and transport, in accessing mental health services. A co-ordinated care approach across a range of mental health and other health services is required to ensure that people experiencing homelessness are able to access services that address the complexities of their health needs.	People experiencing homelessness are substantially more likely to have alcohol and drug dependence than the general population, and psychotic illnesses and personality disorders prevalence rates are higher. Ref: The Prevalence of Mental Disorders among the Homeless in Western Countries: Systematic Review and Meta-Regression Analysis. Fazel, Khosla, Doll and Geddes December 2008 http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0050225. **Data gaps** • Robust data on the prevalence of mental illness in the homeless population in the PHN region.
	People from CALD backgrounds The PHN region has a diverse	**Demographics** • People born overseas (**Table 40**):

2.2 Mental health needs

	population covering a wide range of cultural backgrounds. CALD people may experience specific mental health needs relating to trauma, cultural factors or isolation. In addition to language and other barriers in navigating and accessing the health system, cultural factors such as taboos on discussing mental health or family violence may discourage individuals from seeking treatment of mental illness. In order to meet these needs, the health system in the region must be able to engage CALD communities through culturally appropriate response and in partnership with local social structures.	11 of 13 NWMPHN catchment LGAs exhibit high to extremely high proportions of persons who were born overseas. • People who speak a language other than English at home (**Table 41**): 11 of 13 NWMPHN catchment LGAs exhibit high to extremely high proportions of people who speak a language other than English. In Brimbank (62.1%) and Melbourne (54.3%), a majority of the resident population speak a language other than English • Low English proficiency (**Table 42**): 11 of 13 NWMPHN catchment LGAs are within the top quartile (25%) of all Victorian LGAs for proportion of people with little or no English proficiency. In Brimbank 1 in 7 people speak a language other than English and speak English not well or not at all, while in Maribyrnong the figure is 1 in 10.
	Recent humanitarian arrivals The PHN region hosts a range of humanitarian arrivals	No specific data exist on the incidence of mental illness in the refugee community in the PHN region. However, current research highlights strong linkages between poor mental health and people experiencing displacement and trauma associated with refugee status.

2.2 Mental health needs

	centred in Maribyrnong and Preston, with the most recent wave of Syrian refugee arrivals commencing in December 2015. Humanitarian arrivals often have relatively poor health status and are likely to have had limited access to health care. Some health problems experienced by people from refugee backgrounds are asymptomatic, but nonetheless may have serious long-term health consequences (e.g. intestinal parasitic infection, adult vitamin D deficiency, hepatitis B). Additionally, good access to services optimise the opportunity for early intervention, helping to ensure that physical and psychological problems do not become	**Literature** • The Victorian Refugee Health Network collates a range of research and information on the health issues associated with refugees and asylum seekers. This is available at http://refugeehealthnetwork.org.au/learn/health-assessment-and-care/.

2.2 Mental health needs

	enduring barriers to settlement.	
	LGBTIQ • Members of the LGBTIQ community are at increased risk for a number of health issues associated with social and structural inequities, such as stigma, discrimination and minority stress that LGBTIQ people experience.	**Literature** • Rosenstreich, G. (2013) LGBTI People Mental Health and Suicide. Revised 2nd Edition. National LGBTI Health Alliance. Sydney Accessed from https://www.beyondblue.org.au/docs/default-source/default-document-library/bw0258-lgbti-mental-health-and-suicide-2013-2nd-edition.pdf?sfvrsn=2. • National LGBTI Health Alliance (2 September 2011) Mental Health Issues for LGBTI individuals in CALD communities, in Diversit-e Sydney. http://lgbtihealth.org.au/sites/default/files/Diversit-e-20110902.pdf. • Writing Themselves In 3 (WTi3). The third national study on the sexual health and wellbeing of same sex attracted and gender questioning young people.

2.3 Drug and alcohol needs

Identified needs	Key issues	Description of evidence
Alongside the mental health needs identified in north western Melbourne there are significant service needs relating to drug and alcohol misuse. Evidence shows a strong correlation between rates of illicit substance use and areas of socioeconomic disadvantage, such as in Melton, Moorabool and Brimbank. North western Melbourne also has a high rate of emergency department presentations for acute intoxication and ambulance call outs for overdose in areas such as Melbourne and Yarra, reflecting social and recreational activities in the city which centre around alcohol and drug use. These patterns illustrate the need for not only acute and longer term support programs, but also the necessity to better integrate low acuity supports and early interventions to divert people away from longer term substance misuse patterns.		

2.3 Drug and alcohol needs

In terms of overall health service needs, alcohol remains the greatest issue in the region, however while there are lower overall usage rates of illicit substances such as methamphetamine, this is increasing. Alcohol and other substance misuse is also an area where a number of specific population groups are overrepresented, such as people experiencing homelessness, Aboriginal or Torres Strait Islander people, people identifying as LGBTIQ and people who may have experienced trauma such as refugees.

Drug and alcohol *Alcohol, tobacco and cannabis* Identified needs are: • Youth specific services to address rates of adolescent smoking and drinking. • General alcohol and smoking services. • Health literacy for vulnerable groups.	The rate of alcohol consumption is a key determinant of overall health. Alcohol consumption and service usage rates are high in the inner city, as well as in inner-suburban areas with higher rates of socio-economic disadvantage and in the rural municipality of Moorabool. While all levels of smoking are dangerous to health, rates of adult smoking are low relative to the Australian and Victorian average. However, adolescent rates of smoking and drinking continue to be a priority in the region, as the highest rates of alcohol related hospitalisations are in the teenage age group.	**Determinants** • Estimated number of people aged 15 years and over who consumed more than two standard alcoholic drinks per day on average (**Table 43**): Very high in Yarra. **Service utilisation** • Alcohol-related ambulance attendances (**Table 44**): Extremely high in Yarra and Melbourne (reflects where people access services, not necessarily where they live). • Alcohol-related emergency department presentations (**Table 45**): Extremely high in Yarra and Melbourne. • Alcohol-related hospitalisations (**Table 46**): Very high in Yarra, moderate in Melbourne. • Alcohol-related episodes of care (**Table 47**): High in Yarra. **Injury and mortality** • Alcohol-related assaults during high alcohol hours (Friday and Saturday nights between

2.3 Drug and alcohol needs

		8pm and 6am) (**Table 48**) Extremely high in Melbourne and very high in Yarra • Alcohol-related serious road injuries during high alcohol hours (**Table 49**) Very high in Melbourne, high in Moorabool and Macedon Ranges. • Alcohol-related deaths (**Table 50**) Very high in Moorabool, moderate in Macedon Ranges. Adolescent smoking and drinking rates across Australia • Smoking rates increase with age. By the age of 17, 13 per cent of males and 11 per cent of females are current smokers (smoked in the last week). • Young Australians (14-24) have their first full serve of alcohol at 15.7 years, on average. • 27.7 per cent of 12-17-year old's have consumed alcohol in the last 12 months. • Alcohol contributes to the 3 major causes of teenage death, being injury, homicide and suicide. Smoking rates are low across the PHN region relative to both the Victorian and Australian averages.
Drug and alcohol *Other drugs* Identified needs are: • Services to address the increasing use of	Service utilisation for non-methamphetamine drugs is high in the inner-city and in outer-suburban areas with higher rates of socio-economic disadvantage.	Rates of drug use and service utilisation for other drugs are consistently highest in the 15-24-year-old age group. **Service utilisation – methamphetamine** • Ambulance attendance (**Table 51**): Extremely high in Melbourne and Yarra; very high in Maribyrnong, Brimbank and

2.3 Drug and alcohol needs

methamphetamine.
• Services to address the use of other drugs, particularly for vulnerable populations.
	Rates are particularly high in the 15-24-year-old age group, indicating the need to target interventions on young people.
	
	National Drug Strategy Household Survey has not found a rise in methamphetamine use among 14-19-year old's, methamphetamine has replaced powder as the main form used, increasing the purity and thus the impact of the drug.
	
	Drug and alcohol usage is often a comorbidity of mental health issues. This presents additional challenges in co-ordinating care due to the complexity in addressing both needs concurrently.
		Darebin, high in Moonee Valley, Moreland and Melton.
		
		Service utilisation – other meth/amphetamines
		• Ambulance attendance (**Table 52**):
		Extremely high in Melbourne and Yarra, very high in Moonee Valley and Moreland.
		
		• Episodes of care (ADIS) (**Table 53**):
		Very high in Yarra; High in Melton, Moreland and Hume.
		
		Service utilisation – other drugs
		• Ambulance attendances (**Table 52, Table 54, Table 58, Table 62)**:
		  • *Illicit substances*: Extremely high in Melbourne, Yarra and Maribyrnong; very high in Brimbank, Moonee Valley and Darebin.
		  • *Pharmaceuticals:* Extremely high in Melbourne and Yarra; high in Moorabool.
		  • *Other stimulants*: Extremely high in Melbourne and Yarra; very high in Darebin and Moreland; high in Maribyrnong and Hume.
		• Hospitalisations (**Table 52, Table 56, Table 60**):
		  • *Illicit substances*: Very high in Melbourne and Brimbank; high in Yarra and Maribyrnong.
		  • *Pharmaceuticals:* Very high in Melbourne; High in Yarra.
		
		• Episodes of care (**Table 52, Table 57, Table 63**):
		  • *Illicit substances*: Very high in Yarra and Maribyrnong; high in Brimbank and Melton.
		  • *Pharmaceuticals:* High in Maribyrnong
		  • *Other stimulants:* Extremely high in Hume; very high in Brimbank, Hobsons Bay,

2.3 Drug and alcohol needs

		Moonee Valley and Darebin; high in Maribyrnong, Yarra and Melbourne Rates of illicit substance episodes of care are higher for males, while rates of pharmaceutical episodes of care are higher for females.
Drug and alcohol *Usage by vulnerable populations*	**Aboriginal and Torres Strait Islander people** Rates of drug and alcohol usage are higher for Aboriginal populations than for the general population. This may relate to the wider prevalence and severity of mental health issues in the Aboriginal community, as well as multi-faceted and intergenerational disadvantage.	Please refer to the mental health, alcohol and drug area profile in Appendix F for more detailed statistics and data sources. A summary is included below: **Alcohol** • Binge-drinking rates are similar to those for non-Aboriginal people, but those Aboriginal people who do binge-drink drink more often. • Hospitalisation rates for acute intoxication are 12.1 times higher for Aboriginal women than non-Aboriginal women, and 9.7 times higher for Aboriginal men than non-Aboriginal men. **Smoking** • Aboriginal people are 2.6 times more likely to smoke daily than non-Aboriginal people. • Aboriginal males are 2.3 times more likely to be hospitalised for smoking-related causes • Aboriginal females are 3.9 times more likely to be hospitalised for smoking-related causes. **Other drug use** • Hospitalisation rates with drug use as the principal diagnosis are high for Australian Aboriginals, who are 2.5 times more likely to be hospitalised for these reasons. • The rate of alcohol and other drug treatment episodes is proportionally higher for the Aboriginal population. • The proportion of Aboriginal alcohol and other drug clients with concurrent mental health conditions is higher in Moreland, Hobsons Bay and Hume.
	People experiencing homelessness People experiencing	Australian and international research indicates higher levels of drug use in non-heterosexual populations with these patterns of higher drug use generally beginning in adolescence.

2.3 Drug and alcohol needs

	homelessness experience higher rates of substance misuse specifically alcohol, cannabis, opioids, and amphetamines.[9] **LGBTIQ** Rates of drug use are considerably higher among LGBTIQ people than the general population, with the exception of heroin.	[Latrobe University 2010].

[9] Chris Lloyd, 'Drug and alcohol use of the homeless within the Homeless Health Outreach Team' <http://www98.griffith.edu.au/dspace/bitstream/handle/10072/49548/82426_1.pdf;jsessionid=829132F23F34B878821D2345989A1B63?sequence=1>, accessed 22 March 2016.

SECTION 3 – OUTCOMES OF THE SERVICE NEEDS ANALYSIS

Understanding the complexity and needs of the service system has been an ongoing focus for NWMPHN since its inception, and we have undertaken some key pieces of work to analyse the current service configuration, structures, relationships and areas requiring further market analysis and development across the region. Most recently detailed regional profiles have been developed to provide a focus on the key priority areas for the PHN (Appendix F)

A key theme emerging from the service needs analysis relates to the unprecedented population growth being experienced in the NWNPHN region. Our region currently has a population of over 1.6 million people and this is predicted to rise by 18 per cent in just six years to 1.9 million people. Wyndham, Melton and Melbourne are three of the five most rapidly growing LGAs in Victoria. North Western Melbourne PHN region also includes several other LGAs that are predicted to have annual growth rates well in excess of the state average. Whilst some of this growth comes from immigration, and both interstate and intrastate migration (due to proximity to Melbourne CBD and relatively affordable housing), additional growth comes from very high birth rates. The high numbers of births, especially in Melton and Wyndham, has immediate implications not only for ~~our~~ strained maternity and maternal and child health services, but also in terms of planning for kindergartens, schools, and broader health and social infrastructure. Maintaining and improving service quality, access and effectiveness will therefore be an ongoing challenge, and will require considerable coordination and planning across multiple organisations and levels of government.

We would also note that it is not always possible to separate health needs from service needs, and in many cases section 2 of this document refers to service needs which are directly linked to a highly specific health need. The table below highlights a range of more general service needs which cut across sectors, populations and the geography of the region.

Outcomes of the service needs analysis		
Identified Need	Key Issue	Description of Evidence
Areas of workforce shortage across the region, specifically in the western suburbs and growth corridors where there is very high and growing demand.	There is a need to ensure that the health workforce is able to support service availability in the outer west and growth corridors, where there are high levels of projected population growth. Compared to inner-city and inner-suburban areas, the outer west and north regions generally has smaller primary health workforces.	**District of workforce shortages** (**Table 136**) GP shortages • Key areas of shortage include: Macedon Ranges, Wyndham, Brimbank, Melton-Bacchus Marsh, and Hobsons Bay. Obstetrician and gynaecologist shortages

Outcomes of the service needs analysis		
	These regions also have higher levels of socio-economic disadvantage indicating that there may be higher levels of unmet or underserviced demand, as individuals with greater needs face additional barriers to accessing services. Strong current and projected population growth in these regions may exacerbate any existing service shortfalls. There is also a need to ensure that bulk billing services continue to be available to meet demand in areas with higher socio-economic disadvantage.	• Shortage in all regions except for Melbourne, Brunswick-Coburg, Essendon, Maribyrnong and Yarra. General surgeon shortages • Shortage in all regions except for Essendon, Melbourne, Yarra and Maribyrnong. Psychiatrist shortages • Shortage in all regions except Essendon, Melbourne, Brunswick-Coburg and Yarra.
	The NWMPHN has utilisation levels of general practice and medical specialists generally comparable with overall national levels, with some exceptions: • Low per capita rates of general practice attendances in Yarra • Low per capita rates of general practice bulk billing in Yarra, Darebin-South, Macedon Ranges, Melbourne City. • Low per capita rates of medical specialist attendances in Brimbank and Maribyrnong. • Lower rates of after-hours general practice in the Melbourne - inner area than in other areas.	**Service usage** • The AIHW publish analysis of MBS utilisation by SA3 and PHN. These data provide estimations of the crude and aged standardised per capita utilisation of services. • Variation in the age standardised rates may reflect a range of factors including practice variation including referral practice among general practitioners, workforce availability, financial and other barriers for service provision. **Table 127, Table 129, Table 131, Table 133** provide analysis of the key MBS utilisation data.

Outcomes of the service needs analysis		
Concerns about the accessibility of services, the responsive of services (related to wait times and the affordability of services), particularly for some priority populations.	Qualitative and quantitative data indicates that access to services across the region is not satisfactory, and that there are issues around waiting times and affordability.	**Accessibility** • The NWMPHN population has similar rates of self-reported 12-month usage of GPs for general and urgent care, and medical specialists to the national levels. The difference is not significant at the 95% confidence level (**Table 130**) • However, there are overall lower rates of adults who saw a dentist, hygienist or dental specialist in the preceding 12 months – 43% compared with the national level of 48.2%. This is significantly lower at the 95% confidence level (**Table 130**). • Providers in our region have concerns about the general level of access to services for their clients /communities of interest, with over three-quarters reporting that they are only somewhat satisfied or not very satisfied that their clients /communities of interest can access the services they need across the healthcare system in the region. • Excessive wait times and service affordability are the two biggest concerns identified by providers. **Wait times** • 25.6 % of adults felt they waited longer than acceptable for a GP appointment. This is higher than the Australian rate of 22.6%, but is not significant at the 95% confidence level (**Table 130**)

Outcomes of the service needs analysis		
		• Providers in our region have told us they have significant concerns about public hospital outpatient and outreach waiting lists, mental health services and public housing, and that they hold particular concerns about the impact of wait times for elderly and CALD people. Providers suggest that, in addition to increasing funding to address wait times, there is an opportunity to improve referral pathways and triaging.
After-hours access - There is a need to improve access to after-hours primary health care in order to limit the extent to which people go without care or access emergency and acute services in the after-hours period.	Access to services is greater during the sociable after hours (6pm-11pm weekdays) in comparison to unsociable hours with limited options available between 11pm-8am weekdays and on weekends. Targeted responses to address access for priority populations is necessary; especially those from non-English speaking backgrounds, people affected by homelessness and residents of aged care facilities. The PHN's review of after-hours services identified the following issues: • Community awareness of after-hours services. • Access to after-hours services for homeless persons.	**Service usage** • After-hours GP attendances (**Table 131**): • There are variations in the rates of use of after-hours GP services across the PHN, with lower rates reported in the inner areas of Brunswick, Melbourne, Yarra and higher rates in the SA4 area of Melbourne West and some of the North West. • The interaction between the use of AH GP services and hospital emergency department services has been often studied, as there is considered to be a relationship between low GP availability and higher emergency department utilisation. **Table 135** illustrates the variation in Primary Care Type presentations across the area, with lower per capita rates in the peri-urban areas of Macedon Ranges and Moorabool, and higher rates in the inner areas that have greater proximity to emergency departments. These data have a general inverse correlation to the after hours GP data.

Outcomes of the service needs analysis		
	• Limited mental health after-hours services. • GP workforce and business development. • Aged care access to after-hours services. • The availability of diagnostic services after-hours, particularly radiology and pathology. • Cultural diversity.	**Service availability** General practice • There are twenty-six GP clinics open after hours (until 10pm) of these eight are open until 11pm and a further one until midnight. Additionally, there are three GP Super Clinics (open unsociable hours) within 10km of the PHN region. • However, there are some areas where access is limited during the after-hours period. Pharmacies • Five pharmacies are open until 10pm, a further four are open until 11pm, whilst two are open 24 hours. A range of areas reported limited access to pharmacies at 9pm, including Sunbury, Macedon Ranges, Werribee, Hobsons Bay, Maribyrnong, Melbourne CBD, Moreland North, Broadmeadows, Bacchus Marsh and Brimbank North. • The recent announcement of funding for 20 Supercare Pharmacies, funded by the Victorian government, promises to provide additional primary care services after hours. Supercare Pharmacies are open 24 hours a day with a nurse on site from 6pm-10pm daily. Nurses provide support and advice for minor injury and illness, flu and whooping cough immunisations, health screening, sexual health advice and referrals to other services. Five of the initial 12 locations are within the NWMPHN area, with 4 of the additional 8 to be opened

Outcomes of the service needs analysis		
		in 2018 are in the NWMPHN area. Community health services • There are 12 community health providers in the region and of these three provide after-hours services, up to five hours per week. Hospitals with emergency departments • Access to hospital services in the outer areas is limited with Werribee Mercy hospital having a limited emergency service and Bacchus Marsh Hospital and Melton Health having a GP urgent care service only. Other emergency departments are available at Sunshine Hospital, Footscray Hospital, Williamstown Hospital, and the central city locations. This needs enhancement to meet the growing needs of the community. • Diagnostic after-hours services in the region are generally referred to hospitals as most private diagnostics services are not open in the after-hours period. Other primary health care services: • Palliative Care Services. • Royal District Nursing Service. • Telephone advice and support services. • Homeless Nurse Outreach. • Foot Patrol (needle syringe program).

Outcomes of the service needs analysis		
		• Private Allied Health. • Police and Clinician Emergency Response Teams. • Crisis Assessment and Treatment teams (acute mental health).
Service effectiveness: The PHN Needs assessment guidance developed by the Department of Health describes components of service effectiveness as being accessibility, appropriateness and quality, although some definitions in the academic literature also include wider concepts of safety, efficiency and sustainability as components of service effectiveness. For the purposes of presenting the work undertaken for this service needs analysis, service accessibility (availability) is addressed above. The broader components of quality, efficiency, appropriateness, safety and sustainability of services have not been addressed separately as these are embedded into much of the work undertaken by the PHN (see Section 4). Instead we have selected some core strategies and approaches that can be used to support and improve service effectiveness, and which are particularly salient to our region at this time.		
Very high levels of service demand from a diverse range of priority groups.	Service volume and complexity, makes it difficult for services to prioritise their time and resources to meeting universal demand and the needs of particular priority, special needs or high-risk groups. Application of risk stratification approaches across a range of service settings (for example in general practice, in hospital out-patient and emergency departments, in community health and by private health insurers can facilitate more targeted and effective responses to meeting community needs and anticipating the likely service demands of key groups.	• A review conducted by the Sax Institute commissioned by the NSW Agency for Clinical Effectiveness in July 2015 assessed the evidence for the use of risk stratification approaches in improving patient outcomes. It found that the use of risk stratification tools in combination with care management planning can improve patient outcomes, including reductions in hospital readmissions, and more appropriate health service use. Some critical enablers and barriers to successful implementation included engaging clinicians in tool implementation, refinement and use; a supportive context; data requirements and tool characteristics; and responsiveness to equity issues.[10]

[10] Gillespie J, Huckel Schneider C, Wilson A, Elshaug A. Implementing system-wide risk stratification approaches – critical success and failure factors: an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Agency for Clinical Innovation 2015.

Outcomes of the service needs analysis		
Variations in service capability and capacity to respond to the dynamic and changing environment, and to adopting innovative approaches to improving service effectiveness.	There is wide variety in the capacity and capability of a range of services across the region to be able to take up and respond to service improvement opportunities and innovation. This occurs both in general practice and with several of our bed-based and community health services. For example, the NWMPHN region includes up to 20 per cent of GP practices that are not computerised, and nearly a quarter of all practices in the region are solo practitioners (working in relative isolation). Similarly, whilst our region contains a number of large quaternary services with significant philanthropic foundations and research income, a number of our bed-based and community services are within relatively deprived catchment areas and have only modest internal resources to be able to focus on to adopting innovative approaches to improving service effectiveness. Development and implementation of a range of support tools and service enhancement approaches in a range of settings are important priorities for NWMPHN as outlined in Section 4 (for example HealthPathways, building service improvement collaborations and partnerships).	• Analysis of primary NWMPHN data on general practices across region.

Outcomes of the service needs analysis		
Over utilisation of acute and specialist services for conditions which could be effectively managed in the primary sector at a lower overall cost to the system	Enhancing the capacity of the primary health care sector to manage a range of chronic and low acuity acute conditions provides a way to reduce utilisation of expensive acute and specialist services, which can support the overall affordability and sustainability of the health care system.	**Efficiency** • High potentially preventable hospitalisations (see section 2). • Qualitative insights from across the region.
Variation in provider utilisation of treatments and interventions which may or may not reflect health needs, and which may be driving unnecessary costs to the system	There is unexplained variation in a range of procedures and interventions, potentially indicating under-servicing in some areas and over-servicing (driving unnecessary costs) in others.	**Undesirable variation** • The recently published Australian Atlas of Healthcare Variation presents a picture of substantial variation in healthcare use across Australia, across areas such as antibiotic prescribing, surgical, mental health and diagnostic services. • Some variation is expected and associated with need-related factors such as underlying differences in the health of specific populations, or personal preferences. However, the weight of evidence in Australia and internationally suggests that much of the variation documented in the atlas is likely to be unwarranted. Understanding this variation is critical to improving the quality, value and appropriateness of health care.
The complexity of the service system means that coordination and integration are key priorities in the region	Key issues relevant to the coordination and integration of care across the region are: • The complexity of the service system within the region (probably the most complex service system within any PHN region in Australia). • The pressing need to design, promote and	**Service system complexity** • Healthcare service configuration across the region is dynamic and complex, including: more than 13 large and specialist/state-wide hospitals; 11 community health services over multiple sites; more than 1700 general practitioners across over 540 practices; 385 pharmacies; over 130 aged care facilities; and over 120 mental health and alcohol and drugs providers.

Outcomes of the service needs analysis		
	implement effective, efficient and coordinated models of care for the future.	• The NWMPHN regional catchment also contains most of Victoria's correctional facilities (prisons), along with three of the fastest growing LGAs in Australia. Within the Melbourne CBD there is a large and unique mix of transient populations, including tourists, students, workers, people experiencing homelessness, in addition to permanent residents.
	Key issues relevant to eHealth as an enabler for better coordination and integration are: • Disconnectedness of the current system across health settings. • Reliance on old technology – fax and post. • Poor/slow uptake of digital options. • Opportunity for an increasing focus on *technology and other innovations* to support efficient and effective support.	**eHealth** • Analysis of the service across the NWMPHN region confirms the huge appetite for providers of health care in improving communication and connectedness, including through digital means. • The development of affordable and scalable e-health and technology solutions, and meeting consumer expectations for e-health solutions are an ongoing challenge.
Burn-out, isolation and deteriorating health and economic opportunities of carers, who form an integral part of the service system	The majority of informal care provided across the region is undertaken by low-paid or unpaid carers and relatives, whose work is often invisible and whose value is unacknowledged. Priority groups of carers include: • Parents of children with a profound disability living in areas of high socioeconomic disadvantage. • Child carers. • Grandparents under stress with unwanted child care responsibilities.	**Carers as providers** Our stakeholders tell us that supporting carers is an important way to ensure that people experiencing a range of health concerns are able to be cared for in the community. Carers Victoria identifies some clear evidence of the need to support carers: • Over 2.6 million Australians provide help and support to a family member or friend. • Carers may be as young as 10 or as old as 90. • 50 per cent of primary carers are on a low income, and

Outcomes of the service needs analysis		
	• Families caring for a member with mental illness. • Families impacted by drug and alcohol issues. • Non-English speaking carers of people with chronic disease. • Elderly carers of elderly people.	can experience additional financial hardships associated with being carers. • Carers have the lowest wellbeing of any large group measured by the Australian Unity Wellbeing index. • Carers are 40 per cent more likely to suffer from a chronic health condition. • Many carers feel isolated, missing the social opportunities associated with work, recreation and leisure activities.

SECTION 4 – OPPORTUNITIES, PRIORITIES AND OPTIONS

This section identifies the priority areas of action NWMPHN is considering progressing in 2018-19. Priorities have been identified through the analysis of qualitative and quantitative data, including important insights gained through our various consultation activities. The prioritisation process has been informed by NWMPHN staff, our clinical and community advisory councils and other stakeholders as appropriate.

Prioritisation has included consideration of:

- The size and severity of needs identified. This means we have considered how many people are affected, and how severe the impact is for any one individual. Importantly, this includes consideration of 'clinical relevance'.
- Alignment with the scope of PHNs and identified priorities, including PHN Programme priorities, the priorities of other funded programs, the strategic priorities identified by the NWMPHN Board and priorities identified by other key stakeholders.
- Consideration of equity of social determinants, health outcomes and service access.
- The opportunity for impact. This aspect considers whether it is plausible to assume that the PHN, either acting alone or in collaboration with partners, would be able to effectively address an identified need. This includes consideration of a wide range of factors including (but not necessarily limited to): whether there is a strong evidence based solution or credible innovative solution currently available; whether the potential solution sits within the sphere of influence of the PHN; and whether other critical success factors are in place.

NWMPHN will continue to develop these ideas through research activities and ongoing consultation with relevant stakeholders, including potential providers and consumers, as appropriate. As these priorities and potential solutions are refined we will begin to develop our 2018-19 Activity Work Plan. Some priorities identified here may be held over for future years, or may be identified for further research and development, or evaluation before we are in a position to progress to the specification and procurement phase of the commissioning cycle.

In 2017, Section 4 uses as its core headings our six key priority areas developed through consultation and engagement. These are:

1. Chronic Conditions
2. Children and Families
3. Mental Health
4. Suicide Prevention
5. Alcohol and Other Drugs
6. Aboriginal and Torres Strait Islander Health

These priorities have been the 'building blocks' around which we have developed both our Health Needs Assessment (Appendix F – Regional Area Profiles) and key pieces of commissioning.

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
Chronic Conditions	• Evidence based **quality improvement strategies** delivered in general practice to improve the prevention and management of chronic conditions. • Develop and embed locally agreed **HealthPathways** to support enhanced management of chronic conditions in primary care. • Evidence based **workforce development strategies** delivered in primary care to support the prevention and management of chronic conditions. • Evidence based **after-hours strategies** delivered in primary care to improve the management of chronic conditions outside of traditional practice hours. Target locations will include: • Low socioeconomic areas where	Improved prevention and management of chronic conditions in targeted populations and locations of need.	Number of primary care providers engaged in the delivery of chronic disease prevention and management strategies. Number of page views of chronic disease related HealthPathways.	• NWMPHN • Commissioned providers • Regional collaborations e.g. The Collaborative, Better Health North East Melbourne, Shared Vision for the North.

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	higher prevalence of chronic disease exists. • Growth and peri-urban areas where higher prevalence of key precursors (overweight and obesity, smoking, low levels of exercise) is seen. • Outer metropolitan areas of Melton-Bacchus Marsh, Wyndham and Tullamarine-Broadmeadows where higher levels of potentially preventable hospitalisations occur.			
Children and Families	• Evidence based primary care **workforce development strategies** to support improved clinician confidence in addressing the health needs of children to ensure optimal care in the community (e.g. childhood immunisation). This will take a prevention/early intervention approach and will be focused on geographical areas showing poorer health indicators. • Develop and embed locally agreed **HealthPathways** to	Children and their parents receive safe, high quality person centred health care in their community.	Number of paediatric specific HealthPathways developed and embedded, including page views. Childhood Immunisation rates overall and within priority populations i.e. Aboriginal and Torres Strait Islanders. Increased access to appropriate care outside of traditional practice hours.	• NWMPHN • Commissioned providers • Regional collaborations e.g. Better Health North East Melbourne, Shared Vision for the North.

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	support enhanced management of children and families in primary care. • Evidence based **after-hours strategies** delivered in primary care to improve access outside of traditional practice hours.			
Mental Health	• Evidence based **workforce development** strategies tailored and integrated to support primary care capacity building, especially targeting lower-socioeconomic regions such as Brimbank, Moorabool and Melton. • Develop and implement strategies to address **Care Navigation** and access. Target communities including those from low SES as well as refugees and asylum seekers. • Roll out and support uptake of **E-Health/Digital Health** strategies. • Develop and embed locally agreed **HealthPathways** to	Number of primary care providers in high needs areas able to prevent, treat, support and manage mental health issues. People with a Mental Health conditions are supported to receive access to high quality care.	NWMPHN led training opportunities available for Mental Health Providers including GPs. Non-age standardised per capita rate of Mental Health Related Emergency Department presentations. Number of service providers and referrers using referdirect to support referral, triage and service delivery to PHN funded services across the region. Number of mental health specific HealthPathways developed and embedded, including page views.	• NWMPHN • Mental Health Expert Advisory Group • Commissioned providers.

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	support enhanced management of people with mental ill-health in primary care. • Evidence based **after-hours strategies** delivered in primary care to improve access outside of traditional practice hours. There will be a focus on under serviced regions in the north and west of our region.			
Suicide Prevention	• Develop and embed locally agreed **HealthPathways** to support suicide prevention. This will be a whole of catchment activity, with a specific focus on LGBTI services, Services within the Brimbank, Melton local government areas and Services within the Macedon Ranges Shire. • Develop and implement strategies to address **care navigation and access** There will be a specific focus on Macedon Ranges Shire and Brimbank/	Number of providers of primary care in able to prevent, treat, support and manage mental health, including suicide ideation issues. Stronger identification of patients with suicide ideation and how to support them.	Increased number of mental health plans. Number of HealthPathways developed and embedded. Increased number of referrals into CAREinMIND SPS program. Reduction in the number of Emergency Department presentations for self-harm in hospital. Number of people supported	• NWMPHN

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	Melton local government areas. • **Workforce development**: Evidence based strategies tailored and integrated to support mental health, people with lived experience and support primary care capacity building. • **Health literacy**: Consumer and carer participation to develop/maintain patient centred focus. There will be a specific focus on LGBTI communities, communities living in the Brimbank/ Melton local government areas, communities living in the Macedon Ranges Shire.		by NWMPHN funded care navigation and assessment service/ provider. Number of people who participate in NWMPHN funded workforce development programs. Number of community campaigns developed and implemented that target local health and wellbeing professionals.	
Alcohol and Other Drugs	• Develop and embed **HealthPathways** to support general practitioners, practice nurses and AOD services better understand the clinical options to addiction. Priority pathways for development include those	Primary care is supported to identify, support and refer AOD patients effectively.	Increased number and usage of AOD HealthPathways. Rate of clients receiving AOD treatment per 100,000 population in the PHN catchment.	• NWMPHN • VAADA – Victorian Alcohol and Drug Association • VACCHO

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	relating to the changes in codeine regulations, pharmacotherapy and real-time prescribing. This will be a whole of catchment activity. • Develop and implement strategies to address **care navigation and access.** Target communities include those living in Yarra, Brimbank and Macedon Ranges. • **Workforce Development**: Evidence based strategies tailored and integrated to support aboriginal services, alcohol and drug, and primary care capacity building to better respond to the AOD needs of the community. This activity is targeted across the catchment.		Number of pharmacotherapy prescribers and dispensers within NWMPHN region. Number of people supported by NWMPHN funded care navigation and assessment service/ provider. Increase in the number of people from priority populations successfully completing episodes of care. Number of people who participate in NWMPHN funded workforce development programs.	
Aboriginal and Torres Strait Islander Health	• Targeted **Quality Improvement in Primary Care Practice** to utilise current available Pen Cat data to identify performance against KPIs and support quality	Support best practice primary health care for Aboriginal and Torres Strait Islander patients.	Number of Aboriginal Health checks with practices that have high numbers of Aboriginal patients (MBS item 715).	• NWMPHN

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	improvement activities. While whole of NWMPHN region will be targeted, prioritisation will occur in Regions with the highest proportion of Aboriginal community including Moorabool, Darebin, Wyndham, Brimbank and Hume. Focus will also be upon Children and youth under 25 years of age as almost half of the Aboriginal population in the NWMPHN are under 25 years of age. • Develop and implement strategies to address **care navigation and access.** Target communities including those living in Yarra, Brimbank and Macedon Ranges. • Evidence based internal **Workforce development** to ensure that all relevant NWMPHN programs incorporate a cultural lens that addresses the specific health challenges facing	Contribute to the evidence base around the health service needs of Aboriginal and Torres Strait Islander people in our region. Support internal cultural competency development, including oversight of the organisation's Reconciliation Action Plan (RAP). The development of respectful and collaborative relationships with the Aboriginal Community Control Organisations, Aboriginal Communities and mainstream organisations working in Aboriginal health.	Increase in data to support Aboriginal Health Needs Assessment to ensure it accurately reflects the health service needs of the Aboriginal and Torres Strait Islander people in our region. NWMPHN Innovate RAP approved and launched. Number of staff and providers completing Cultural Awareness Training. Number of people participating in NWMPHN regional Aboriginal Health initiatives, networks and forums.	

Opportunities, priorities and options				
Priority	Possible Options	Expected Outcome	Possible Performance Measurement	Potential Lead
	Aboriginal and Torres Strait Islander communities. • Develop consistency in **data capture and reporting**, so that service delivery and resulting outcomes can be appropriately monitored and evaluated.			

SECTION 5 - CHECKLIST

Requirement	✓
Governance structures have been put in place to oversee and lead the needs assessment process.	✓
Opportunities for collaboration and partnership in the development of the needs assessment have been identified.	✓
The availability of key information has been verified.	✓
Stakeholders have been defined and identified (including other PHNs, service providers and stakeholders that may fall outside the PHN region); Community Advisory Committees and Clinical Councils have been involved; and Consultation processes are effective.	✓
The PHN has the human and physical resources and skills required to undertake the needs assessment. Where there are deficits, steps have been taken to address these.	✓
Formal processes and timeframes (such as a Project Plan) are in place for undertaking the needs assessment.	✓
All parties are clear about the purpose of the needs assessment, its use in informing the development of the PHN Annual Plan and for the department to use for programme planning and policy development.	✓
The PHN is able to provide further evidence to the department if requested to demonstrate how it has addressed each of the steps in the needs assessment.	✓
Geographical regions within the PHN used in the needs assessment are clearly defined and consistent with established and commonly accepted boundaries.	✓
Quality assurance of data to be used and statistical methods has been undertaken.	✓
Identification of service types is consistent with broader use – for example, definition of allied health professions.	✓
Techniques for service mapping, triangulation and prioritisation are fit for purpose.	✓
The results of the needs assessment have been communicated to participants and key stakeholders throughout the process, and there is a process for seeking confirmation or registering and acknowledging dissenting views.	✓
There are mechanisms for evaluation (for example, methodology, governance, replicability, experience of participants, and approach to prioritisation).	✓

Appendix A: Data tables

Note that in many of the below tables, regions (by LGA or SA3) are only included if they vary from the Victorian or Australian average. If a region is not listed, this indicates that the area is either near that average, or low or high on the desirable end of the indicator.

Mental health – Perinatal and infancy

Table 1: ATAPS referrals for perinatal depression with NWMPHN region, 2012-2015 and 2015-16. No Change. Not comparative

Period	Program tier	% referrals	% attendance
1 July 2015 – 30 June 2016	Perinatal depression	1.5	1.5
1 July 2012 – 1 July 2015	Perinatal depression	1.3	0.8

Source: Access to Allied Psychological Services (ATAPS) data for the NWMPHN region, October 2016.

Mental health – Children and young adults

Table 2: Mental Health – Contribution to burden of disease, 5-14-year old's and 15-24-year old's, 2001. No Change. No longer collected

Age group	Disease/Incident	NWMPHN (%[1])	NWMPHN (Rank)	Victoria (%)	Victoria (Rank)
5-14	Mental disorders	20.5	2	20.0	2
15-24	Mental disorders	52.7	1	51.0	1
15-24	Intentional injuries	5.6	3	5.8	3

NOTES: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed to all conditions, i.e. the total burden of disease. DALYs or Disability Adjusted Life Years is an index of the years of reduced life attributed to the nominated condition. DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 3: Adolescents who report being bullied recently (years 5-6 and 7-9), 2015 ~~2013~~.

Region	LGA	Proportion Years 5-6	Percentile (Victoria) Years 5-6	Proportion Years 7-9	Percentile (Victoria) Years 7-9
Inner City	Maribyrnong	12.3%	26	12.6%	13
	Melbourne	11.8%	20	15.4%	24
	Yarra	15.6%	53	8.9%	6
Suburban	Brimbank	13.1%	39	17.3%	37
	Darebin	12.2%	25	17.1%	35
	Hobsons Bay	11.8%	20	16.0%	27
	Moonee Valley	11.4%	16	14.5%	20
	Moreland	14.0%	44	17.6%	41
Growth Area	Hume	16.4%	63	20.0%	59
	Melton	17.5%	74	18.2%	43
	Wyndham	19.5%	83	16.6%	30
Peri-Urban	Macedon Ranges	12.7%	30	19.3%	53
	Moorabool	13.1%	39	27.3%	91
Victoria		**15.0%**		**18.0%**	

Source: Victorian Child and Adolescent Monitoring System (VCAMS) Indicators 2015

Table 4: Child Protection Substantiations, 2014-2015

Region	LGA	Number of children on protection substantiations / 1,000 population	Percentile (Victoria)
Inner City	Maribyrnong	9.6	38
	Melbourne	9.4	37
	Yarra	6.9	24
Suburban	Brimbank	16.3	72
	Darebin	8.2	32
	Hobsons Bay	9.1	34
	Moonee Valley	5.3	15
	Moreland	7.2	26
Growth Area	Hume	12	54
	Melton	16.7	75
	Wyndham	12.1	55
Peri-Urban	Macedon Ranges	4	10
	Moorabool	12.7	60
Victoria		**11.4**	

Comment: Rates of substantiated child protection are generally low to average relative to the rest of Victoria.

Source: Victorian Local Government Area profiles 2015

Table 5: Young people with the highest level of psychological distress, 2010. No Change. No update

LGA	Young people with the highest level of psychological distress, % 2010
Hobsons Bay	19.9
Moonee Valley	19.5
Victoria	13.0

Source: Aspex Consulting. In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN, March 2016.

Table 6: Young people with an eating disorder, 2010. No Change. No update

LGA	Young people with an eating disorder, % 2010
Melbourne	5.6
Brimbank	3.2
Darebin	3.1
Moreland	3.1
Yarra	3.1
Wyndham	2.7
Moonee Valley	2.6
Victoria	**2.4**

Source: Aspex Consulting. In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN, March 2016.

Table 7: PBS prescriptions dispensed for antidepressant medicines, under 17 years, 2013-2014. No Change. New presentation style

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	5,389	17
	Darebin - South	7,816	50
	Essendon	5,345	16
	Melbourne City	2,679	1
	Yarra	6,191	24
Melbourne - North East	Darebin - North	4,400	8
Melbourne - North West	Keilor	4,706	11
	Macedon Ranges	8,097	51
	Moreland - North	4,425	10
	Sunbury	8,930	67
	Tullamarine - Broadmeadows	3,807	5
Melbourne - West	Brimbank	3,609	4
	Hobsons Bay	5,311	14
	Maribyrnong	5,294	13
	Melton - Bacchus Marsh	5,983	22
	Wyndham	6,714	28
Victoria SA3 Median		**7,816**	
Australia		**7,989**	

Note: 1 Age Standardised Rate.

Comment: 14 of the 16 SA3s in the NWMPHN are at or below the Victorian median.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 8: PBS prescriptions dispensed for antipsychotic medicines, under 17 years, 2013-2014. No Change. New presentation style

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	1,316	25
	Darebin - South	2,071	67
	Essendon	876	8
	Melbourne City	1,358	31
	Yarra	1,278	22
Melbourne - North East	Darebin - North	1,786	56
Melbourne - North West	Keilor	799	5
	Macedon Ranges	1,327	27
	Moreland - North	1,270	21
	Sunbury	1,949	62
	Tullamarine - Broadmeadows	1,060	13
Melbourne - West	Brimbank	1,403	34
	Hobsons Bay	1,428	37
	Maribyrnong	1,632	48
	Melton - Bacchus Marsh	1,771	54
	Wyndham	2,077	68
Victoria SA3 Median		**1,652**	
Australia		**2,070**	

Note: 1 Age Standardised Rate.

Comment: 11 of the 16 SA3s in the NWMPHN are below the Victorian Median.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 9: PBS prescriptions dispensed for ADHD medicines, under 17 years, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	3,678	8
	Darebin - South	2,513	1
	Essendon	2961	2
	Melbourne City	4,372	28
	Yarra	3,083	4
Melbourne - North East	Darebin - North	3,900	11
Melbourne - North West	Keilor	3,413	7
	Macedon Ranges	4,066	17
	Moreland - North	3,902	13
	Sunbury	8,553	68
	Tullamarine - Broadmeadows	3,949	14
Melbourne - West	Brimbank	3,873	10
	Hobsons Bay	4,376	30
	Maribyrnong	4,090	19
	Melton - Bacchus Marsh	8,979	74
	Wyndham	8,193	65
Victoria SA3 Median		**6,266**	
Australia		**10,780**	

Notes: 1 Age Standardised Rate.

Comment: 13 of the 16 SA3s in the NWMPHN are below the Victorian Median.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 10: headspace centre service use, 1 July 2016 to 30 June 2017.

Centre	Occasions of service	Serviced young people	New young people	Average visit frequency
Collingwood	6,659	1,167	653	5.7
Craigieburn	4,055	790	517	5.1
Glenroy	6,608	1,081	552	6.1
Sunshine	6,505	1,255	729	5.2
Werribee	5,528	982	601	5.6

Source: headspace. (2017). Centre Activity Overview Reports, Quarter 1 2017-2018.

Table 11: headspace centre demographic background, 1 July 2016 to 30 June 2017

Centre	Aboriginal and Torres Strait Islander %	Culturally and Linguistically Diverse Peoples (CALD) %	Lesbian, Gay, Bisexual, Trans, and/or Intersex. (LGBTI) %
Collingwood	5.1	13.1	41.6
Craigieburn	3.4	19.4	19.8
Glenroy	2.7	21.6	27.8
Sunshine	4.1	26.7	29.2
Werribee	4.1	16.4	25.1
National centre average	**7.8**	**9.9**	**23.1**

Source: headspace. (2017). Centre Activity Overview Reports Quarter 1 2017-2018.

Table 12: headspace centre most common diagnosis, 1 July 2016 to 30 June 2017

Centre	Most common diagnosis	Most common diagnosis, %
Collingwood	Stage 2: threshold diagnosis	49.4
Craigieburn	Stage 1a: mild to moderate general symptoms	34.6
Glenroy	Stage 2: threshold diagnosis	46.0
Sunshine	Stage 2: threshold diagnosis	41.0
Werribee	Stage 2: threshold diagnosis	35.8
National centre average	**Stage 1a: mild to moderate general symptoms**	**39.5**

Source: headspace. (2017). Centre Activity Overview Reports Quarter 1 2017-2018.

Table 13: headspace centre Kessler 10 (K10) and Social and Occupational Functioning Assessment Scale (SOFAS) average start and end scores, 1 July 2016 to 30 June 2017.

Centre	Average K10 score start	Average K10 score end	Average SOFAS score start	Average SOFAS score end
Collingwood	29.7	27.2	65.0	66.7
Craigieburn	28.8	27.4	63.5	66.5
Glenroy	29.3	27.3	63.2	66.5
Sunshine	31.4	29.6	60.5	62.9
Werribee	29.7	27.9	61.8	65.1
National centre average	**28.0**	**26.6**	**65.5**	**66.8**

Source: headspace. (2017). Centre Activity Overview Reports Quarter 1 2017-2018.

Table 14: headspace centre funding and referral sources, 1 July 2016 to 30 June 2017

Centre	% funding from MBS	% formal written referrals	% referrals from GPs	% referrals from school-based services
Collingwood	60.4	43.0	82.0	1.8
Craigieburn	57.1	69.8	94.5	1.2
Glenroy	66.4	67.6	89.4	2.9
Sunshine	68.8	63.3	92.6	2.1
Werribee	72.8	78.9	93.8	0.5
National centre average	**45.4**	**47.1**	**81.3**	**6.6**

Source: headspace. (2017). Centre Activity Overview Reports Quarter 1 2017-2018.

Mental health – Adults

Table 15: Mental Health – Contribution to burden of disease, 25-64 year olds, 2001. No Change. No update

Age group	Disease	NWMPHN (%[1])	NWMPHN (Rank)	Victoria (%)	Victoria (Rank)
25-34	Mental disorders	50.2	1	48.4	1
25-34	Intentional injuries	7.8	3	8.3	6
35-44	Mental disorders	32.2	1	31.0	3
45-54	Mental disorders	16.8	2	16.1	5
55-64	Mental disorders	6.9	5	6.6	6

NOTES: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed to all conditions, i.e. the total burden of disease. DALYs or Disability Adjusted Life Years is an index of the years of reduced life attributed to the nominated condition. DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 16: Households estimated with food insecurity, 2014

Region	LGA	Households estimated with food insecurity, % 2014	Percentile (Victoria)
Inner City	Maribyrnong	1.98	13
	Melbourne	NA	NA
	Yarra	4.74	62
Suburban	Brimbank	5.29	67
	Darebin	2.58	26
	Hobsons Bay	2.38	20
	Moonee Valley	2.48	23
	Moreland	4.07	49
Growth Area	Hume	6.16	74
	Melton	3.27	39
	Wyndham	3.88	48
Peri-Urban	Macedon Ranges	3.04	36
	Moorabool	4.26	51
Victoria		**4.26**	

Source: Victorian Population Health Survey 2014, reported VHISS

Table 17: Households estimated to be under mortgage stress, 2011. No Change. No update

LGA	Households estimated to be under mortgage stress, % 2011	Percentile (Victoria)	Subjective assessment (Victoria)
Hume	18.6	98	Extremely high
Brimbank	18.0	96	Extremely high
Melton	14.1	81	Very high
Victoria (LGA average[1])	**11.4**	-	-

Note: 1 Simple average of the LGA percentages

Source: Compiled by PHIDU based on the ABS Census 2011 (unpublished) data.

Table 18: Households estimated to be under rental stress, 2011. No Change. No update

LGA	Households estimated to be under rental stress, % 2011	Percentile (Victorian LGAs)	Subjective assessment (Victoria)
Hume	33.4	99	Extremely high
Brimbank	30.6	93	Extremely high
Melton	29.3	85	Very high
Wyndham	26.5	60	High
Victoria (LGA average[1])	**25.1**		

Note: 1 Simple average of the LGA percentages

Source: Compiled by PHIDU based on the ABS Census 2011 (unpublished) data.

Table 19: Proportion of people reporting adequate work-life balance, 2011. No Change. No update

LGA	People reporting adequate work-life balance, % 2011	Percentile (Victoria)	Subjective assessment (Victoria)
Moorabool	37.6	1	Extremely low
Hume	46.0	25	Low
Maribyrnong	46.5	28	Low
Victoria (LGA average[1])	**53.1**	-	-

Note: 1 Simple average of the LGA percentages

Source: VicHealth Indicators Survey, 2011, reported in Victorian Local Government Area profiles 2014.

Table 20: Proportion of people reporting less than 7 hours sleep on a typical work-day, 2011. No Change. No update

LGA	People reporting less than 7 hours sleep on a typical work-day, % 2011	Percentile (Victoria)	Subjective assessment (Victoria)
Hume	44.1	99	Extremely high
Moorabool	39.7	96	Extremely high
Melton	39.1	85	Very high
Brimbank	36.2	84	Very high
Wyndham	36.2	84	Very high
Darebin	35.3	81	Very high
Victoria (LGA average[1])	**31.5**	-	-

Note: 1 Simple average of the LGA percentages

Source: VicHealth Indicators Survey, 2011, reported in Victorian Local Government Area profiles 2014.

Table 21: Electronic gaming machine losses by LGA by machines and venues, 2016-17

Region	LGA	Machines	Venues	Player Loss ($millions)	Loss per machine	Loss per venue ($millions)
Inner City	Maribyrnong	449	9	54.07	120,419	6.01
	Melbourne	746	11	80.35	107,706	7.30
	Yarra	308	8	30.80	100,003	3.85
Suburban	Brimbank	948	15	134.14	141,499	8.94
	Darebin	744	12	81.11	109,021	6.76
	Hobsons Bay	535	9	46.91	87,679	5.21
	Moonee Valley	732	11	75.68	103,386	6.88
	Moreland	645	12	61.63	95,546	5.14
Growth Area	Hume	806	14	105.77	131,223	7.55
	Melton	497	7	61.16	123,052	8.74
	Wyndham	893	13	97.76	109,475	7.52
Peri-Urban	Macedon Ranges	103	3	9.53	92,485	3.18
	Moorabool	160	5	11.40	71,223	2.28
NWMPHN Total[2]		**7,566**	**129**	**850.29**	**112,384**	**6.59**
Victoria		**26,365**	**497**	**2609.5**	**98,977**	**5.25**

NOTES: 1: The LGA is based on the LGA in which the gaming venue is located. 2: The statistics for Macedon Ranges and Moorabool are for the whole LGA rather than the just the NWMPHN parts, the *NWMPHN Total* will be overstated.

Source: Victorian Commission for Gambling and Liquor Regulation, September 2017

Table 22: Gaming machine losses per Adult (18 years and over) population, 2016-17

Region	LGA	Player Expenditure $ / Adult population 2016	Player Expenditure $ / Adult population 2016 Percentile
Inner City	Maribyrnong	805	86
	Melbourne	642	59
	Yarra	407	24
Suburban	Brimbank	886	91
	Darebin	678	71
	Hobsons Bay	673	68
	Moonee Valley	810	88
	Moreland	464	30
Growth Area	Hume	728	79
	Melton	632	57
	Wyndham	628	53
Peri-Urban	Macedon Ranges	273	13
	Moorabool	473	33
NWMPHN Total[2]		**659**	
Victoria		**620**	

Notes: 1: The LGA is based on the LGA in which the gaming venue is located. 2: The statistics for Macedon Ranges and Moorabool are for the whole LGA rather than the just the NWMPHN parts.

Source: Victorian Commission for Gambling and Liquor Regulation, September 2017

Table 23: Proportion of the population with mental and behavioural problems, 2011-2013. No Change. Not comparative

LGA	People with mental and behavioural problems / 100,000 population (ASR[1]) 2011-2013	Percentile (Australia)	Subjective assessment (Australia)
Melbourne	15.0	79	High
Victoria	**12.7**	-	-
Australia	**13.6**	-	-

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 24: Proportion of the population with high or very high psychological distress based on the Kessler 10 scale, 18 years and over, 2014-15

Region	LGA	Age-standardised Rate per 100	Percentile (Victoria)
Inner City	Maribyrnong	13.2	86
	Melbourne	10.8	59
	Yarra	10.7	24
Suburban	Brimbank	15.9	91
	Darebin	13.4	71
	Hobsons Bay	12.7	68
	Moonee Valley	11.6	88
	Moreland	13.2	30
Growth Area	Hume	15.3	79
	Melton	15.5	57
	Wyndham	14.8	53
Peri-Urban	Macedon Ranges	10.5	13
	Moorabool	13.1	33
NWMPHN Total		**12.5**	
Victoria		**12.3**	

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia by Local Government Area, August 2017.

Table 25: Primary care diagnosis from an ATAPS referral within NWMPHN, 2012-2016.

Diagnosis	Primary care diagnosis from an ATAPS referral within NWMPHN, % 2012-2016	Rank (NWMPHN)
F3 Depression	37.9	1
F4 Anxiety Disorders	34.9	2
Other diagnosis	10.6	3
F1 Alcohol and Drug use	5.0	4
F40, F41, F41.1 Anxiety	4.8	5
F2 Psychotic Disorders	2.5	6

Source: Access to Allied Psychological Services (ATAPS) data for the NWMPHN region.

Table 26: Proportion of registered mental health clients, 2012-2013. No Change. No update

LGA	Registered mental health clients[1] / 1,000 population 2012-13	Percentile (Victoria)	Subjective assessment (Victoria)
Melbourne	8.8	14	Very low
Wyndham	8.8	14	Very low
Macedon Ranges	8.9	17	Very low
Hobsons Bay	9.5	21	Low
Melton	9.6	24	Low
Moonee Valley	10.9	33	Moderately low
Brimbank	11	36	Moderately low
Victoria	**11.3**	-	-

Note: 1 Residents of an LGA who are registered as clients with a mental health service

Source: Mental Health, Drugs and regions Division, Victorian Department of Health, 2012, reported in Victorian Local Government Area profiles 2014.

Table 27: MBS funded services for the preparation of mental health treatment plans by GPs, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	5,419	79
	Darebin - South	5,706	88
	Essendon	4671	37
	Melbourne City	3,682	7
	Yarra	5,201	70
Melbourne - North East	Darebin - North	4,301	22
Melbourne - North West	Keilor	4,599	33
	Macedon Ranges	5,093	61
	Moreland - North	4,915	51
	Sunbury	5,748	91
	Tullamarine - Broadmeadows	5,080	57
Melbourne - West	Brimbank	3,841	10
	Hobsons Bay	4,901	50
	Maribyrnong	4,471	28
	Melton - Bacchus Marsh	4,611	34
	Wyndham	4,105	14
Victoria SA3 Median		**4,901**	
Australia		**4,260**	

Note: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation, August 2016

Table 28: Mental health nurse service utilisation, 2014-2015. No Change. No update

SA3 Name	Mental health nurse services / 100,000 population (ASR[1]) 2014-15
Sunbury	107.3
Melbourne City	62.0
Darebin - North	31.8
Macedon Ranges	31.6
Wyndham	13.7
Brimbank	12.5
Keilor	10.3
Tullamarine - Broadmeadows	10.0
Melton - Bacchus Marsh	6.1
NWMPHN	**18.7**
Victoria	**26.1**

Note: 1 Age Standardised Rate

Source: Aspex Consulting. In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN, March 2016.

Table 29: Low acuity ambulance (code 3) used for mental health and behaviour problems and psychiatric episodes, 2012-2013. No Change. No update

LGA	Mental health and behavioural problems, %	Psychiatric problem, %
Yarra	12.8	0.2
Melbourne	8.7	0.2
Maribyrnong	7.0	0.0
Hume	6.1	0.0
Darebin	6.0	0.2
Moreland	5.2	0.0
Melton	5.1	0.0
Victoria	**3.8**	**0.1**

Source: Aspex Consulting. In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN, March 2016.

Table 30: Mental health overnight hospitalisations, 2014–15

SA4 NAME	SA3 NAME	Hospitalisations per 100,000 people (age-standardised)	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	983	82
	Darebin - South	928	68
	Essendon	929	70
	Melbourne City	973	79
	Yarra	1,113	93
Melbourne - North East	Darebin - North	908	64
Melbourne - North West	Keilor	757	28
	Macedon Ranges	700	13
	Moreland - North	917	67
	Sunbury	843	50
	Tullamarine - Broadmeadows	668	7
Melbourne - West	Brimbank	739	24
	Hobsons Bay	734	19
	Maribyrnong	910	65
	Melton - Bacchus Marsh	747	25
	Wyndham	593	2
Victoria SA3 Median		**843**	
Australia		**944**	

Source: AIHW, Hospitalisations for mental health conditions and intentional self-harm in 2014–15

Table 31: PBS prescriptions dispensed for antidepressant medication, 18-64 years, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	85,855	30
	Darebin - South	89,115	37
	Essendon	83522	17
	Melbourne City	64,188	1
	Yarra	88,414	36
Melbourne - North East	Darebin - North	83,782	19
Melbourne - North West	Keilor	87,144	33
	Macedon Ranges	96,307	45
	Moreland - North	84,961	25
	Sunbury	120,866	64
	Tullamarine - Broadmeadows	84,455	22
Melbourne - West	Brimbank	73,896	7
	Hobsons Bay	94,601	41
	Maribyrnong	79,564	11
	Melton - Bacchus Marsh	101,895	51
	Wyndham	83,950	21
Victoria SA3 Median		**101,513**	
Australia		**101,239**	

Note: 1 Age Standardised Rate

Comment: 14 of the 16 SA3s within NWMPHN are below the Australian average.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 32: PBS prescriptions dispensed for antipsychotic medication, 18-64 years, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	20,585	61
	Darebin - South	18,308	44
	Essendon	17642	41
	Melbourne City	19,234	47
	Yarra	26,440	94
Melbourne - North East	Darebin - North	24,942	88
Melbourne - North West	Keilor	16,790	36
	Macedon Ranges	12,038	1
	Moreland - North	20,070	54
	Sunbury	14,168	16
	Tullamarine - Broadmeadows	17,734	42
Melbourne - West	Brimbank	19,267	48
	Hobsons Bay	19,909	53
	Maribyrnong	22,357	71
	Melton - Bacchus Marsh	16,072	27
	Wyndham	13,328	5
Victoria SA3 Median		**19,338**	
Australia		**17,844**	

Note: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 33: PBS prescriptions dispensed for anxiolytic medication, 18-64 years, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions Dispensed / 100,000 population (ASR1) 2013-14	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	18,353	22
	Darebin - South	18,578	24
	Essendon	18242	21
	Melbourne City	19,312	33
	Yarra	23,247	73
Melbourne - North East	Darebin - North	27,666	88
Melbourne - North West	Keilor	19008	31
	Macedon Ranges	15,393	11
	Moreland - North	23,231	71
	Sunbury	21,555	56
	Tullamarine - Broadmeadows	21,797	57
Melbourne - West	Brimbank	19,384	36
	Hobsons Bay	22,437	61
	Maribyrnong	21,895	59
	Melton - Bacchus Marsh	20,031	47
	Wyndham	16,014	14
Victoria SA3 Median		**20,551**	
Australia		**17,201**	

Note: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 34: Average annual deaths from suicide and self-inflicted injuries, 0-74 years, 2010-2014

Region	LGA	ASR per 100	Percentile (Victoria)
Inner City	Maribyrnong	10.3	48
	Melbourne	8.1	20
	Yarra	9.4	41
Suburban	Brimbank	9.0	31
	Darebin	7.5	13
	Hobsons Bay	7.6	16
	Moonee Valley	8.1	21
	Moreland	7.6	14
Growth Area	Hume	8.1	23
	Melton	7.6	17
	Wyndham	7.4	12
Peri-Urban	Macedon Ranges	16.8	92
	Moorabool	9.4	42
NWMPHN Total		**12.5**	
Victoria		**12.3**	

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia by Local Government Area, August 2017.

Mental health – Older adults

Table 35: Persons aged 75 years and older living alone, 2016 ~~2011~~.

Region	LGA	Persons aged 75 years and older living alone, % 2016	Percentile (Victoria)
Inner City	Maribyrnong	33.1	26
	Melbourne	39.9	87
	Yarra	39.2	84
Suburban	Brimbank	26.1	5
	Darebin	33.4	28
	Hobsons Bay	34.4	35
	Moonee Valley	32.0	23
	Moreland	34.0	31
Growth Area	Hume	25.1	3
	Melton	26.9	9
	Wyndham	27.0	10
Peri-Urban	Macedon Ranges	29.1	17
	Moorabool	33.6	29
NWMPHN Total		**31.2**	
Victoria		**33.6**	

Source: Census of Population and Housing, ABS, 2016

Table 36: Age pension recipients, 2014/15

Region	LGA	Age pension recipients per 1,000 eligible population
Inner city	Maribyrnong (C)	767.9
	Melbourne (C)	409.8
	Yarra (C)	580.9
Suburban	Brimbank (C)	820.6
	Darebin (C)	768.1
	Hobsons Bay (C)	747.9
	Moonee Valley (C)	700.7
	Moreland (C)	782.1
Growth area	Hume (C)	823.1
	Melton (C)	847.2
	Wyndham (C)	780.9
Peri-urban	Macedon Ranges (S)	664.2
	Moorabool (S)	761.9
Victoria		**707.4**

Source: Victorian Local Government Area profiles, 2016 from Centerlink, ABS 2015

Table 37: PBS prescriptions dispensed for antipsychotic medication, 65 years and over, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions dispensed per 100,000 people (age-standardised)	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	45,117	97
	Darebin - South	38,887	91
	Essendon	34991	87
	Melbourne City	44,030	96
	Yarra	57,130	99
Melbourne - North East	Darebin - North	37,986	90
Melbourne - North West	Keilor	29,983	56
	Macedon Ranges	25,158	22
	Moreland - North	33,907	82
	Sunbury	33,800	79
	Tullamarine - Broadmeadows	34,700	85
Melbourne - West	Brimbank	33,403	77
	Hobsons Bay	33,809	81
	Maribyrnong	43,047	94
	Melton - Bacchus Marsh	37,216	88
	Wyndham	30,663	62
Victoria SA3 Median		**29,396**	
Australia		**17,844**	

Comment: 15 of 16 SA3s within the NWMPHN are above the Victorian median.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 38: PBS prescriptions dispensed for anxiolytic medication, 65 years and over, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions dispensed per 100,000 people (age-standardised)	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	47,923	82
	Darebin - South	44,866	62
	Essendon	47625	77
	Melbourne City	40,196	45
	Yarra	49,069	85
Melbourne - North East	Darebin - North	46,746	74
Melbourne - North West	Keilor	41,825	53
	Macedon Ranges	31,833	11
	Moreland - North	46,095	71
	Sunbury	48,885	84
	Tullamarine - Broadmeadows	47,806	81
Melbourne - West	Brimbank	45,981	70
	Hobsons Bay	45,591	67
	Maribyrnong	52,362	91
	Melton - Bacchus Marsh	56,031	97
	Wyndham	47,671	79
Victoria SA3 Median		**40,758**	
Australia		**37,695**	

Comment: 14 of 16 SA3s within the NWMPHN are above the Victorian Median.

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 39: PBS prescriptions dispensed for anticholinesterase medication, 65 years and over, 2013-2014.

SA4 NAME	SA3 NAME	Prescriptions dispensed per 100,000 people (age-standardised)	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	11,604	31
	Darebin - South	15,377	73
	Essendon	12419	36
	Melbourne City	16,981	84
	Yarra	15,887	77
Melbourne - North East	Darebin - North	16,112	81
Melbourne - North West	Keilor	11,245	25
	Macedon Ranges	13,439	45
	Moreland - North	10,872	24
	Sunbury	13,450	47
	Tullamarine - Broadmeadows	12,959	41
Melbourne - West	Brimbank	8,293	7
	Hobsons Bay	12,440	37
	Maribyrnong	8,736	11
	Melton - Bacchus Marsh	11,296	27
	Wyndham	8,614	8
Victoria SA3 Median		**13,670**	
Australia		**12,650**	

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Mental health – Vulnerable populations

Table 40: People born overseas, 2016

Region	LGA	People born overseas, % 2016	Percentile (Victoria)
Inner City	Maribyrnong	43.3	93
	Melbourne	63.0	99
	Yarra	32.1	76
Suburban	Brimbank	51.6	97
	Darebin	36.0	83
	Hobsons Bay	32.5	79
	Moonee Valley	29.6	71
	Moreland	36.4	85
Growth Area	Hume	38.3	87
	Melton	32.1	75
	Wyndham	44.1	94
Peri-Urban	Macedon Ranges	13.5	51
	Moorabool	13.3	48
NWMPHN Total		**39.5**	
Victoria		**30.4**	

Source: Australian Census of Population and Housing, ABS, 2016

Table 41: People who speak a language other than English at home, 2016

Region	LGA	People who speak a language other than English at home, % 2016	Percentile (Victoria)
Inner City	Maribyrnong	45.0	92
	Melbourne	54.3	97
	Yarra	24.5	71
Suburban	Brimbank	62.1	98
	Darebin	39.7	87
	Hobsons Bay	30.7	79
	Moonee Valley	31.6	80
	Moreland	40.5	88
Growth Area	Hume	47.6	94
	Melton	34.4	82
	Wyndham	43.6	90
Peri-Urban	Macedon Ranges	4.8	38
	Moorabool	5.7	46
NWMPHN Total		**41.4**	
Victoria		**27.6**	

Source: Australian Census of Population and Housing, ABS, 2016

Table 42: Proportion of people with low English proficiency, 2016

Region	LGA	People with low English proficiency, % 2016	Percentile (Victoria)
Inner City	Maribyrnong	9.9	97
	Melbourne	7.7	88
	Yarra	5.6	82
Suburban	Brimbank	14.3	98
	Darebin	7.9	92
	Hobsons Bay	5.2	81
	Moonee Valley	5.0	80
	Moreland	6.8	87
Growth Area	Hume	8.6	94
	Melton	4.2	75
	Wyndham	6.1	85
Peri-Urban	Macedon Ranges	0.5	35
	Moorabool	0.5	32
NWMPHN Total		**7.3**	
Victoria		**4.8**	

Source: Australian Census of Population and Housing, ABS, 2016

Table 43: Estimated number of people aged 15 years and over who consumed more than two standard alcoholic drinks per day on average, 2014-2015.

Region	LGA	Harmful use of alcohol (100 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	8.6	2
	Darebin	12.9	10
	Hobsons Bay	14.6	17
	Moonee Valley	14.9	20
	Moreland	13.2	11
Peri-urban	Macedon Ranges	18.2	53
	Moorabool	17.3	42
Inner city	Maribyrnong	12.1	8
	Melbourne	16	30
	Yarra	21.3	87
Growth area	Hume	9.8	3
	Wyndham	11	5
Victoria	**Victoria**	**15**	
Australia	**AUSTRALIA**	**16.7**	

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 44: Alcohol related ambulance attendances, 2014-2015.

Region	LGA	Alcohol related ambulance attendances (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	28.7	41
	Darebin	30.4	45
	Hobsons Bay	32.4	53
	Moonee Valley	35.7	66
	Moreland	32.2	52
Peri-urban	Macedon Ranges	18.6	8
	Moorabool	25.2	28
Inner city	Maribyrnong	49.8	85
	Melbourne	177.2	98
	Yarra	79.3	96
Growth area	Hume	26.5	37
	Melton	25.7	32
	Wyndham	21	17
Victoria	**Victoria**	**37**	**68**

Note: 1 Age Standardised Rate

Comment: Higher rates are seen for the 15-24 year age group (63.9), followed by 40-64 years (55.2) and 25-39 years (44.9)

Source: Turning Point 2016, AODstats.

Table 45: Alcohol related ED presentations, 2012-2013. No Change. No longer collected

LGA	Alcohol related ED presentations / 10,000 population (ASR[1]) 2012-13	Percentile (Victoria)	Subjective assessment (Victoria)
Yarra	30.1	99	Extremely high
Melbourne	69.6	94	Extremely high
Maribyrnong	18.8	81	Very high
Hobsons Bay	15.9	73	High
Victoria	**13.8**	-	-

Note: 1 Age Standardised Rate

Comment: Higher rates are seen by males (17.2) than females (10.4).

Source: Turning Point 2016, AODstats.

Table 46: Alcohol related hospitalisations, 2014-2015.

Region	LGA	Alcohol related hospitalisations (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	38.3	28
	Darebin	41	40
	Hobsons Bay	48.6	55
	Moonee Valley	44.4	45
	Moreland	39.8	33
Peri-urban	Macedon Ranges	30.9	17
	Moorabool	36.2	26
Inner city	Maribyrnong	51.1	58
	Melbourne	51.9	61
	Yarra	74.3	88
Growth area	Hume	29.2	12
	Melton	28.1	8
	Wyndham	24.5	4
Victoria	**Victoria**	**55**	

Note: 1 Age Standardised Rate

Comment: Higher rates are seen from males (67.8) than females (42.5).

Source: Turning Point 2016, AODstats.

Table 47: Alcohol related episodes of care, 2014-2015.

Region	LGA	Alcohol related episodes of care (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	26.3	46
	Darebin	26.2	44
	Hobsons Bay	23.5	34
	Moonee Valley	20.6	25
	Moreland	29.8	55
Peri-urban	Macedon Ranges	27.1	50
	Moorabool	18.6	23
Inner city	Maribyrnong	34.8	61
	Melbourne	25.2	41
	Yarra	40.9	74
Growth area	Hume	23.1	33
	Melton	20.9	28
	Wyndham	17.7	21
Victoria	**Victoria**	**28.8**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 48: Alcohol related assaults during high alcohol hours (Friday and Saturday between 8pm and 6am), 2014-2015.

Region	LGA	High alcohol hours – assaults (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	9.3	47
	Darebin	6.7	24
	Hobsons Bay	7.1	25
	Moonee Valley	8	34
	Moreland	7.5	32
Peri-urban	Macedon Ranges	5.4	13
	Moorabool	8.1	35
Inner city	Melbourne	49.3	99
	Yarra	17.7	85
Growth area	Hume	11.2	54
	Melton	8.8	42
	Wyndham	6.2	18
Victoria	**Victoria**	**10**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 49: Alcohol related serious road injuries during high alcohol hours (Friday and Saturday between 8pm and 6am), 2014-2015.

Region	LGA	High alcohol hours - alcohol related serious road injuries (100k population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	4.5	63
	Darebin	2.8	36
	Hobsons Bay	2.7	31
	Moonee Valley	1.9	15
	Moreland	2.6	26
Peri-urban	Macedon Ranges	5.6	75
	Moorabool	5.5	73
Inner city	Maribyrnong	2	16
	Melbourne	7.1	84
	Yarra	3.9	58
Growth area	Hume	2.7	31
	Melton	2.9	41
	Wyndham	2.4	22
Victoria	**Victoria**	**3.2**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 50: Alcohol related deaths, 2014-15.

Region	LGA	Alcohol related deaths (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	1.2	16
	Darebin	1.6	42
	Hobsons Bay	1.3	24
	Moonee Valley	1.5	36
	Moreland	1.4	31
Peri-urban	Macedon Ranges	2.2	61
	Moorabool	4.2	84
Inner city	Maribyrnong	1.5	36
	Melbourne	1.1	11
	Yarra	1.4	31
Growth area	Hume	1.2	16
	Melton	1.3	24
	Wyndham	1	7
Victoria	**Victoria**	**1.7**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Drug and alcohol – other drugs

Table 51: Crystal methamphetamine (ice) related ambulance attendances, 2014-15.

Region	LGA	Crystal meth. related ambulance attendance (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	59.2	86
	Darebin	51.8	81
	Hobsons Bay	38.4	63
	Moonee Valley	49.4	78
	Moreland	45.3	73
Peri-urban	Macedon Ranges	17.9	22
	Moorabool	32.3	52
Inner city	Maribyrnong	66	88
	Melbourne	124.4	98
	Yarra	86.7	93
Growth area	Hume	49.8	80
	Melton	42.3	72
	Wyndham	35.1	60
Victoria	**Victoria**	**38.9**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 52: Meth/amphetamine related ambulance attendances, 2014-15.

Region	LGA	Meth/ amphetamine related amb. attendances (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	72.3	86
	Darebin	69.9	83
	Hobsons Bay	46.1	65
	Moonee Valley	68.2	81
	Moreland	56.9	73
Peri-urban	Macedon Ranges	20.1	13
	Moorabool	42	60
Inner city	Maribyrnong	79.4	88
	Melbourne	177.6	98
	Yarra	114.4	95
Growth area	Hume	60.4	77
	Melton	56.4	72
	Wyndham	42.1	62
Victoria	**Victoria**	**49.4**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 53: Meth/amphetamine related episodes of care, 2014-15.

Region	LGA	Meth/amphetamine related episodes of care (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	17.8	67
	Darebin	14.1	50
	Hobsons Bay	12.8	43
	Moonee Valley	15.0	54
	Moreland	20.1	73
Peri-urban	Macedon Ranges	6.9	14
	Moorabool	8.9	26
Inner city	Maribyrnong	17.5	66
	Melbourne	11.2	35
	Yarra	25.6	85
Growth area	Hume	20.0	71
	Melton	21.2	76
	Wyndham	16.2	59
Victoria	**Victoria**	**15.1**	

Note: 1 Age Standardised Rate

Comment: the rate is highest in the 15-24 year age group (39.7) followed by 25-39 years (32.7) and 40-64 years (7.4)

Source: Turning Point 2016, AODstats.

Table 54: Illicit substances related ambulance attendances, 2015-2016.

Region	LGA	Illicit substances related ambulance attendances (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	20.4	87
	Darebin	21.9	88
	Hobsons Bay	15.9	80
	Moonee Valley	16.7	83
	Moreland	15.2	75
Peri-urban	Macedon Ranges	4.9	8
	Moorabool	9.7	40
Inner city	Maribyrnong	33.7	94
	Melbourne	74.1	98
	Yarra	71.3	97
Growth area	Hume	12.8	68
	Melton	12.9	71
	Wyndham	10	45
Victoria	**Victoria**	**15.5**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 55: Illicit substances related ED presentations, 2012-2013. No Change. No longer reported by Turning Point

LGA	Illicit substances related ED presentations / 10,000 population (ASR[1]) 2012-13	Percentile (Victoria)	Subjective assessment (Victoria)
Melbourne	4.7	98	Extremely high
Yarra	4.6	96	Extremely high
Maribyrnong	3.4	88	Very high
Hobsons Bay	3.3	86	Very high
Darebin	2.7	80	Very high
Moorabool	2.7	80	Very high
Victoria	**2.1**	-	-

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 56: Illicit substances related hospitalisations, 2014-15.

Region	LGA	Illicit substances related hospitalisations (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	28.8	84
	Darebin	22	56
	Hobsons Bay	22.1	58
	Moonee Valley	22.1	58
	Moreland	23.1	62
Peri-urban	Macedon Ranges	13.6	15
	Moorabool	18.4	36
Inner city	Maribyrnong	27.4	79
	Melbourne	29.6	88
	Yarra	27.4	79
Growth area	Hume	18.8	39
	Melton	20.4	46
	Wyndham	14.3	17
Victoria	**Victoria**	**25.3**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 57: Illicit substances related episodes of care, 2014-15.

Region	LGA	Illicit substances related episodes of care (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	50.9	77
	Darebin	40.9	61
	Hobsons Bay	41.2	62
	Moonee Valley	33.9	44
	Moreland	42.9	66
Peri-urban	Macedon Ranges	17.6	14
	Moorabool	18	15
Inner city	Maribyrnong	55.7	80
	Melbourne	35.5	46
	Yarra	74.8	88
Growth area	Hume	41.6	63
	Melton	48.3	72
	Wyndham	36.2	49
Victoria	**Victoria**	**38.9**	

Note: 1 Age Standardised Rate

Comment: : the rate is higher from males (51.3) than females (26.7). The rate is highest in the 15-24 year age group (112.1), followed by 25-39 years (71.8) and 40-64 years (22.6)

Source: Turning Point 2016, AODstats.

Table 58: Pharmaceutical related ambulance attendances, 2014-15

Region	LGA	Pharmaceutical related ambulance attendances (100,000 population (ASR) 2014-2015)	Percentile
Suburban	Brimbank	15.2	42
	Darebin	18	64
	Hobsons Bay	14.7	37
	Moonee Valley	14.2	33
	Moreland	15.5	44
Peri-urban	Macedon Ranges	11.9	23
	Moorabool	19.7	74
Inner city	Maribyrnong	19.4	67
	Melbourne	26.2	92
	Yarra	26.1	91
Growth area	Hume	16.6	53
	Melton	18.7	65
	Wyndham	12.7	26
Victoria	**Victoria**	**17**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 59: Pharmaceutical related emergency department presentations, 2012-2013. No Change. No longer reported by Turning Point

LGA	Pharmaceutical related ED presentations / 10,000 population (ASR[1]) 2013-13	Percentile (Victoria)	Subjective assessment (Victoria)
Hobsons Bay	15.1	80	Very high
Wyndham	14.9	77	High
Hume	14.1	76	High
Melbourne	14.0	74	High
Victoria	**12.6**	-	-

Note: 1 Age Standardised Rate

Comment: the Victorian rate is higher for females (13.0) than males (7.8)

Source: Turning Point 2016, AODstats.

Table 60: Pharmaceutical related hospitalisations, 2014-15.

Region	LGA	Pharmaceutical related hospitalisations (100,000 population (ASR) 2014-2015)	Percentile
Suburban	Brimbank	10.7	18
	Darebin	16.1	61
	Hobsons Bay	12.4	31
	Moonee Valley	16.5	66
	Moreland	15.5	56
Peri-urban	Macedon Ranges	7.6	3
	Moorabool	10.4	15
Inner city	Maribyrnong	12.3	29
	Melbourne	20.1	83
	Yarra	17	70
Growth area	Hume	11.1	21
	Melton	13	33
	Wyndham	10.1	13
Victoria	**Victoria**	**16.1**	

Note: 1 Age Standardised Rate

Comment: the rate is higher from females than males

Source: Turning Point 2016, AODstats.

Table 61: Pharmaceutical related episodes of care, 2014-15.

Region	LGA	Pharmaceutical related episodes of care (100,000 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	2.8	36
	Darebin	3.2	47
	Hobsons Bay	2.1	21
	Moonee Valley	3.7	60
	Moreland	3.2	47
Peri-urban	Macedon Ranges	2.2	23
Inner city	Maribyrnong	6.1	77
	Melbourne	3.1	43
	Yarra	4	64
Growth area	Hume	2.8	36
	Melton	2.7	32
	Wyndham	1.8	18
Victoria	**Victoria**	**3.5**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Table 62: Other stimulants related ambulance attendances, 2014-15.

Region	LGA	Other stimulants related ambulance attendances (100,000 population (ASR) 2014-2015)	Percentile
Suburban	Brimbank	7.1	54
	Darebin	14.8	83
	Hobsons Bay	7.7	56
	Moonee Valley	8.5	59
	Moreland	13.5	82
Peri-urban	Macedon Ranges	0	18
	Moorabool	0	18
Inner city	Maribyrnong	12.2	79
	Melbourne	139.9	98
	Yarra	38.2	93
Growth area	Hume	10.1	72
	Melton	6.3	51
	Wyndham	3.5	37
Victoria	**Victoria**	**12.5**	

Note: 1 Age Standardised Rate

Comment: Data not published for Macedon Ranges and Moorabool due to the small number of attendances.

Source: Turning Point 2016, AODstats.

Table 63: Other stimulants related episodes of care, 2014-2015.

Region	LGA	Other stimulants related amb. attendances (100,000 population (ASR) 2014-2015)	Percentile
Suburban	Brimbank	0.8	81
	Darebin	0.9	87
	Hobsons Bay	0.8	81
	Moonee Valley	0.8	81
	Moreland	0.6	64
Inner city	Maribyrnong	0.7	74
	Melbourne	0.7	74
	Yarra	0.7	74
Peri-urban	Macedon Ranges		
	Moorabool		
Growth area	Hume	1.2	95
	Melton	0.6	64
	Wyndham	0.3	48
Victoria	**Victoria**	**0.7**	

Note: 1 Age Standardised Rate

Source: Turning Point 2016, AODstats.

Population health – Determinants

Table 64: SEIFA Index of Relative Socio-Economic Disadvantage (IRSD), 2011. No Change

Region	LGA	IRSD Score	Lowest SA1 IRSD score in the LGA	Decile (Victoria)
Suburban	Brimbank	926	714	1
	Darebin	990	647	5
	Hobsons Bay	1002	508	7
	Moonee Valley	1027	348	8
	Moreland	998	709	6
Inner city	Maribyrnong	974	619	3
	Melbourne	1026	414	8
	Yarra	1019	339	8
Growth area	Hume	952	381	2
	Melton	1002	772	7
	Wyndham	1013	687	7
Victoria	**Victoria**			

Source: Australian Bureau of Statistics, Socio-Economic Indexes for Areas, 2011

Table 65: Burden of disease (top five) in Disability Adjusted Life Years, 0-4 years, 2001. No Change

Age group	Disease	NWMPHN (%[1])	NWMPHN (Rank)	Victoria (%)	Victoria (Rank)
0-4	Congenital abnormalities	33.5	1	33.9	1
0-4	Neonatal conditions	25.3	2	24.9	2
0-4	Mental disorders	9.5	3	9.6	3
0-4	Chronic respiratory diseases	7.3	4	7.1	4
0-4	Neurological and sense disorders	6.4	5	6.3	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the burden attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 66: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 0-4 years. 2015/2016.

Age group	Disease	Hospital admissions - NWMPHN residents, % 2015-16	Rank (NWMPHN)	Hospital admissions - Victoria residents, % 2015-16	Rank (Victoria)
A0004	Ear, nose and throat infections	27.5	1	34.1	1
A0004	Dental conditions	25.7	2	19.5	2
A0004	Convulsions and epilepsy	12.3	3	15	3
A0004	Pyelonephritis	10.6	4	10	4
A0004	Asthma	9.1	5	7.7	5

Comment: The rate of ear, nose and throat infections avoidable hospitalisations across the PHN (6.06 SR per 1,000) is lower than the Victorian average (8.31 SR per 1,000). The rate of dental-related avoidable hospitalisations across the PHN (5.02 SR per 1,000) is higher than the Victorian average (4.75 SR per 1,000).

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2013-14, reported in Victorian Health Information Surveillance System, 2016.

Table 67: Infant death rate, 2010-14.

Region	LGA	Average annual infant deaths per 1000 births (IDR[1]) 2010-2014)	Percentile
Suburban	Brimbank	5.0	94
	Moreland	3.0	41
	Darebin	2.6	24
	Moonee Valley	2.2	14
	Hobsons Bay	1.7	8
Peri-urban	Moorabool	4.0	74
	Macedon Ranges	2.6	23
Inner city	Melbourne	5.0	95
	Maribyrnong	3.4	56
	Yarra	2.4	18
Growth area	Melton	3.7	66
	Hume	2.9	36
	Wyndham	2.8	30
Victoria	**Victoria**	**3.1**	
Australia	**AUSTRALIA**	**3.6**	

Notes: 1 IDR is Infant Death Rate

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 68: Proportion of infants fully breastfed at three months, 2014/15.

Region	LGA	Infants fully breastfed at three months (%) 2014-15	Percentile
Suburban	Brimbank	62.1	56
	Darebin	60.4	73
	Hobsons Bay	62.7	50
	Moonee Valley	64.7	37
	Moreland	62.4	51
Peri-urban	Macedon Ranges	60.8	70
	Moorabool	64.3	40
Inner city	Maribyrnong	63.0	50
	Melbourne	61.3	66
	Yarra	61.3	65
Growth area	Hume	61.1	68
	Melton	64.0	42
	Wyndham	65.5	31
Victoria	**Victoria**	**63.4**	
Australia	**AUSTRALIA**	**67.9**	

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 69: Participation rates for key Maternal and Child Health ages and stages consultations, 3.5 years, 2014/15. No Change

LGA	Participation rate for key Maternal and Child Health ages and stages consultations, 3.5 years, % 2014-15	Percentile (Victoria)	Subjective assessment (Victoria)
Maribyrnong	53.6	4	Extremely low
Melbourne	54.9	5	Extremely low
Wyndham	57.0	9	Extremely low
Melton	59.8	16	Very low
Hume	60.4	20	Low
Moreland	61.1	21	Low
Hobsons Bay	62.1	27	Low
Darebin	62.5	28	Low
Victoria	**66.1**	-	-

Source: Victorian Department of Education and Training Maternal and Child Health Services Annual Report 2014-2015.

Table 70: Participation rates for key Maternal and Child Health ages and stages consultations, 3.5 years, Aboriginal and Torres Strait Islander, 2014/15. No Change

LGA	Participation rates - key Maternal and Child Health ages and stages consultations, 3.5 years - Aboriginal and Torres Strait Islander, % 2014-15	Percentile (Victoria)	Subjective assessment (Victoria)
Maribyrnong	22.2	18	Very low
Darebin	26.4	23	Low
Melbourne	28.6	26	Low
Yarra	28.6	26	Low
Brimbank	32.0	32	Low
Moreland	32.3	33	Low
Victoria	**51.2**	-	-

Source: Victorian Department of Education and Training Maternal and Child Health Services Annual Report 2014-2015.

Population health – Children

Table 71: Top five conditions contributing to the burden of disease, 5-14 years, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
5-14	Chronic respiratory diseases	42.3	1	42.3	1
5-14	Mental disorders	20.5	2	20.0	2
5-14	Unintentional injuries	8.6	3	8.9	3
5-14	Oral health	5.6	4	5.5	4
5-14	Neurological and sense disorders	5.3	5	5.2	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed to all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 72: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 5-14 years, 2015/2016.

Age group	Disease	Hospital admissions - NWMPHN residents, % 2015-16	Rank (PHN)	Hospital admissions - Victoria residents, % 2015-16	Rank (Vic)
A0514	Dental conditions	43.8	1	41.3	1
A0514	Asthma	23.7	2	21.3	2
A0514	Cellulitis	7.3	3	6.9	5
A0514	Ear, nose and throat infections	6.4	4	8.8	3
A0514	Convulsions and epilepsy	5.2	5	7.7	4

Comment: The rate of asthma avoidable hospitalisations across the PHN (3.38 SR per 1,000) is higher than the Victorian average (2.85 SR per 1,000).

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, reported in Victorian Health Information Surveillance System, 2016.

Table 73: Children developmentally vulnerable on one or more AEDC domains, 2015. No Change

Region	LGA	Children developmentally vulnerable on one or more AEDC domains, % 2015	Children developmentally vulnerable on two or more AEDC domains, % 2015
Inner city	Maribyrnong (C)	18.9	7.5
	Melbourne (C)	23.5	12.6
	Yarra (C)	25.6	14.7
Suburban	Brimbank (C)	31.0	17.5
	Darebin (C)	16.2	7.4
	Hobsons Bay (C)	19.5	8.7
	Moonee Valley (C)	15.9	7.9
	Moreland (C)	20.8	10.4
Growth area	Hume (C)	27.1	14.9
	Melton (C)	21.0	10.2
	Wyndham (C)	26.4	13.3
Peri-urban	Macedon Ranges (S)	13.5	6.3
	Moorabool (S)	21.4	11.0
Victoria		**19.9**	**9.9**

Source: Australian Early Development Census, 2015.

Table 74: Child immunisation rates % fully immunised by age group, 2015-16.

SA4	SA3	Age 1 year	Age 2 year	Age 5 year
Melbourne - Inner	Brunswick - Coburg	92.9	92.1	93.3
	Darebin - South	95.1	91.3	93.6
	Essendon	93.5	89.9	93.3
	Melbourne City	90.2	85.6	86.9
	Yarra	92.9	90.2	91.7
Melbourne - North East	Darebin - North	92.8	89.5	90.8
Melbourne - North West	Keilor	93.8	89.2	95.6
	Macedon Ranges	92.2	90.4	93.4
	Moreland - North	90.6	91.3	92.5
	Sunbury	95.7	92.8	95.2
	Tulla. - B/meadows	91.7	90.3	93.3
Melbourne - West	Brimbank	91.7	89.5	93.2
	Hobsons Bay	93.8	93.4	94.6
	Maribyrnong	91.8	90.7	92.4
	Melton - BMarsh	92.9	91.3	95.4
	Wyndham	92.9	90.2	93.1

Source: AIHW, Immunisation rates for children. Children aged 1, 2 and 5 years who were fully immunised from 2011–12 to 2015–16

Table 75: Estimated annual asthma and related respiratory hospital admissions, 3-19 years, 2010/11 to 2012/13. No Change

SA3 Name	Hospital admissions / 100,000 population (ASR[1]) 2010-11 to 2012-13	Percentile (Australia)	Subjective assessment (Australia)
Maribyrnong	531	97	Extremely high
Keilor	497	96	Extremely high
Brimbank	470	93	Extremely high
Melbourne City	470	93	Extremely high
Moreland North	452	92	Extremely high
Brunswick-Coburg	435	90	Extremely high
Tullamarine-Broadmeadows	364	72	High
Australia	**309.0**	-	-

Notes: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 76: PBS prescriptions dispensed for asthma medicines, 3-19 years, 2013/14. No Change

SA3 Name	Asthma medicines - prescriptions dispensed / 100,000 population (ASR[1]) 2013-14	Percentile (Australia)	Subjective assessment (Australia)
Sunbury	32,146	92	Extremely high
Brimbank	26,197	71	High
Macedon Ranges	25,928	70	High
Australia	**25,750**	-	-

Notes: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 77: Myringotomy hospital admissions, under 17 years, 2012/13. No Change

SA3 Name	Myringotomy hospital admissions / 100,000 population (ASR[1]) 2012-13	Percentile (Australia)	Subjective assessment (Australia)
Sunbury	910	87	Very high
Macedon Ranges	780	76	High
Australia	**621**	-	-

Notes: 1 Age Standardised Rate. Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 78: Tonsillectomy hospital admissions, under 17 years, 2012/13. No Change

SA3 Name	Tonsillectomy hospital admissions / 100,000 population (ASR[1]) 2012-13	Percentile (Australian SA3s)	Subjective assessment (Australia)
Sunbury	801	65	Moderate
Macedon Ranges	786	61	Moderate
Australia	**724**	-	-

Notes: 1 Age Standardised Rate. Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 79: Estimated number of children aged 2-17 years who were overweight (but not obese) (modelled estimates), 2014–15 ASR per 100

Region	LGA	Measure (+/-95% CI)	Significant
Inner city	Maribyrnong (C)	23.0 (21.5 - 24.5)	* high
	Melbourne (C)	20.1 (17.8 - 22.4)	
	Yarra (C)	22.4 (21.0 - 23.8)	
Suburban	Brimbank (C)	24.4 (23.3 - 25.5)	* (high)
	Darebin (C)	23.6 (22.5 - 24.6)	* (high)
	Hobsons Bay (C)	22.0 (20.8 - 23.2)	
	Moonee Valley (C)	21.1 (20.0 - 22.1)	
	Moreland (C)	23.0 (22.0 - 23.9)	* (high)
Growth area	Hume (C)	22.1 (21.2 - 23.0)	
	Melton (C)	20.6 (19.5 - 21.6)	
	Wyndham (C)	22.4 (21.1 - 23.6)	
Peri-urban	Macedon Ranges (S)	20.2 (18.9 - 21.5)	
	Moorabool (S)	20.1 (18.4 - 21.8)	
Victoria		**21.6 (21.4 - 21.8)**	
Australia		**18.3 (18.2 - 18.4)**	

Source: PHIDU, ABS 2014-15

Table 80: Estimated number of children aged 2-17 years who were obese (modelled estimates), 2014–15 ASR per 100

Region	LGA	Measure (+/-95% CI)	Significant
Inner city	Maribyrnong (C)	8.3 (7.5 - 9.0)	
	Melbourne (C)	7.6 (6.9 - 8.4)	
	Yarra (C)	6.0 (5.3 - 6.7)	**(low)
Suburban	Brimbank (C)	10.0 (9.3 - 10.7)	* (high)
	Darebin (C)	7.6 (7.1 - 8.1)	
	Hobsons Bay (C)	7.3 (6.7 - 7.9)	
	Moonee Valley (C)	7.3 (6.5 - 8.0)	
	Moreland (C)	7.9 (7.3 - 8.4)	
Growth area	Hume (C)	10.5 (9.7 - 11.4)	* (high)
	Melton (C)	9.8 (9.0 - 10.6)	* (high)
	Wyndham (C)	9.5 (8.9 - 10.1)	* (high)
Peri-urban	Macedon Ranges (S)	6.4 (5.7 - 7.1)	** (low)
	Moorabool (S)	7.9 (7.0 - 8.8)	
Victoria		**7.6 (7.5 - 7.7)**	
Australia		**7.5 (7.5 - 7.6)**	

Source: PHIDU, ABS 2014-15

Table 81: Estimated number of people aged 4-17 years with adequate fruit intake (modelled estimates), 2014–15 ASR per 100

Region	LGA	Measure (+/-95% CI)	Significant
Inner city	Maribyrnong (C)	61.4 (57.3 - 65.4)	
	Melbourne (C)	68.8 (65.7 - 71.9)	* (high)
	Yarra (C)	66.8 (63.1 - 70.5)	
Suburban	Brimbank (C)	60.8 (58.0 - 63.6)	** (low)
	Darebin (C)	62.4 (59.2 - 65.7)	
	Hobsons Bay (C)	62.0 (58.3 - 65.7)	
	Moonee Valley (C)	65.9 (62.1 - 69.6)	
	Moreland (C)	61.5 (58.4 - 64.5)	
Growth area	Hume (C)	60.2 (56.9 - 63.5)	** (low)
	Melton (C)	61.8 (57.8 - 65.7)	
	Wyndham (C)	60.3 (56.7 - 63.9)	** (low)
Peri-urban	Macedon Ranges (S)	65.8 (61.6 - 69.9)	
	Moorabool (S)	65.6 (60.2 - 71.0)	
Victoria		**64.5 (64.0 - 65.0)**	
Australia		**66.3 (66.0 - 66.6)**	

Source: PHIDU, ABS 2014-15

Population health – Young people

Table 82: Burden of disease (top five), 15-24 years, 2001. No Change

Age group	Disease/Condition	NWMPHN %[1]	NWMPHN Rank	Victoria %	Victoria Rank
15-24	Mental disorders	52.7	1	51.0	1
15-24	Unintentional injuries	13.7	2	14.7	2
15-24	Intentional injuries	5.6	3	5.8	3
15-24	Chronic respiratory diseases	5.4	4	5.3	4
15-24	Neurological and sense disorders	4.6	5	4.7	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the burden attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 83: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 15-24 years, 2015/2016.

Age group	Disease	Hospital admissions –residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A1524	Dental conditions	18.2	1	17.5	1
A1524	Ear, nose and throat infections	14.9	2	15.3	2
A1524	Pyelonephritis	13	3	13.8	3
A1524	Cellulitis	12.7	4	11.1	4
A1524	Iron deficiency anaemia	9.3	5	10	5

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, reported in Victorian Health Information Surveillance System, 2016.

Population health – Adults

Table 84: Top five conditions contributing to the burden of disease, 25-34 years, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
35-44	Mental disorders	50.2	1	48.4	1
35-44	Malignant cancers	8.9	2	9.3	2
35-44	Cardiovascular diseases	7.8	3	8.3	3
35-44	Diabetes mellitus	4.8	4	5.1	4
35-44	Unintentional injuries	4.6	5	4.7	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 85: Top five conditions contributing to the burden of disease, 35-44 years. 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
35-44	Mental disorders	32.2	1	31.0	1
35-44	Malignant cancers	13.4	2	14.1	2
35-44	Cardiovascular diseases	7.3	3	7.4	3
35-44	Diabetes mellitus	6.8	4	6.1	5
35-44	Unintentional injuries	6.4	5	6.7	4

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 86: Top five conditions contributing to the burden of disease, 45-54 years, 2001. No Change

Age group	Disease	NWMPHN %1	NWMPHN Rank	Victoria %	Victoria Rank
45-54	Malignant cancers	25.2	1	26.3	1
45-54	Mental disorders	16.8	2	16.1	2
45-54	Cardiovascular diseases	13.7	3	13.8	3
45-54	Diabetes mellitus	9.2	4	8.5	5
45-54	Neurological and sense disorders	8.1	5	8.2	4

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 87: Top five conditions contributing to the burden of disease, 55-64 years, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
55-64	Malignant cancers	32.1	1	33.0	1
55-64	Cardiovascular diseases	18.2	2	18.2	2
55-64	Neurological and sense disorders	11.1	3	11.7	3
55-64	Diabetes mellitus	8.4	4	7.4	4
55-64	Mental disorders	6.9	5	6.6	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 88: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 25-44 years, 2015/2016.

Age group	Disease	Hospital admissions –residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A2544	Iron deficiency anaemia	17.7	1	17.1	1
A2544	Cellulitis	14.6	2	15.7	2
A2544	Dental conditions	10.1	3	11.3	3
A2544	Pyelonephritis	9.5	4	9.7	4
A2544	Other vaccine-preventable conditions	8.8	5	6.9	7

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 89: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 45-64 years, 2015/2016.

Age group	Disease	Hospital admissions –residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A4564	Iron deficiency anaemia	13.3	1	13.3	1
A4564	Cellulitis	12	2	13.1	2
A4564	Diabetes complications	10.6	3	8.5	5
A4564	Other vaccine-preventable conditions	10.4	4	7.4	8
A4564	Angina	8.4	5	8.1	6

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Population health – Older adults

Table 90: Top five conditions contributing to the burden of disease, 65-74 years, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %	Victoria Rank)
65-74	Malignant cancers	32.4	1	32.9	1
65-74	Cardiovascular disease	23.2	2	23.5	2
65-74	Neurological and sense disorders	12.7	3	13.5	3
65-74	Chronic respiratory disease	8.3	4	7.9	4
65-74	Diabetes mellitus	6.2	5	5.3	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 91: Top five conditions contributing to the burden of disease, 75 years and over, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
75+	Cardiovascular disease	31.9	1	32.2	1
75+	Malignant cancers	21.1	2	21.2	2
75+	Neurological and sense disorders	18.5	3	19.8	3
75+	Chronic respiratory disease	8.3	4	7.6	4
75+	Diabetes mellitus	3.9	5	3.2	6

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 92: Potentially avoidable hospitalisations (Ambulatory Care Sensitive Conditions), 65 years and over, 2015/2016.

Age group	Disease	Hospital admissions – residents of NWMPHN, % 2015-16	Rank (PHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A65P	Congestive cardiac failure	21.6	1	18.6	1
A65P	Chronic Obstructive Pulmonary Disease	15.6	2	15.8	2
A65P	Iron deficiency anaemia	12.3	3	11.7	3
A65P	Diabetes complications	10.3	4	7.8	6
A65P	Pyelonephritis	9	5	10.3	4

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 93: PBS prescriptions dispensed for anticholinesterase medicines, 65 years and over, 2013-2014. No Change

SA3 Name	Prescriptions dispensed / 100,000 population (ASR[1]) 2013-14	Percentile (Australia)	Subjective assessment (Australia)
Melbourne City	16,981	87	Very high
Darebin North	16,112	84	Very high
Yarra	15,887	83	Very high
Darebin South	15,337	79	High
Brimbank	8,293	20	Low
Wyndham	8,614	22	Low
Maribyrnong	8,736	24	Low
Australia	**12,650**	-	-

Notes: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 94: PBS prescriptions dispensed for opioid medicines, all ages, 2013-2014. No Change

SA3 Name	Prescriptions dispensed / 100,000 population (ASR[1]) 2013-14	Percentile (Australia)	Subjective assessment (Australia)
Sunbury	72,317	79	High
Melton-Bacchus Marsh	69,864	74	High
Yarra	41,781	23	Low
Brunswick-Coburg	41,155	21	Low
Darebin-South	38,462	15	Very low
Essendon	39,918	18	Very low
Melbourne City	36,133	13	Very low
Keilor	38,645	15	Very low
Australia	**55,126**	-	-

Notes: 1 Age Standardised Rate

Source: Australian Commission of Safety and Quality in Health Care and National Health Performance Authority 2015, reported in Australian Atlas of Healthcare Variation.

Table 95: Burden of disease attributed to diabetes by age group, 0-64 years, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
0-4	Diabetes mellitus	0.3	17	0.3	16
5-14	Diabetes mellitus	1.4	12	1.3	11
15-24	Diabetes mellitus	0.6	15	0.6	15
25-34	Diabetes mellitus	1.2	13	1.1	13
35-44	Diabetes mellitus	6.8	4	6.8	5
45-54	Diabetes mellitus	9.2	4	8.5	5
55-64	Diabetes mellitus	8.4	4	7.4	5
All ages	Diabetes mellitus	4.9	6	4.4	6

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 96: Potentially avoidable hospitalisations from diabetes (Ambulatory Care Sensitive Conditions), main ages, 2015/2016.

Age group	Disease	Hospital admissions – residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A0004	Diabetes complications	0.2	5	0.8	5
A0514	Diabetes complications	4.3	4	5.2	4
A1524	Diabetes complications	6.8	2	7.9	1
A2534	Diabetes complications	6.6	3	6.7	3
A3544	Diabetes complications	6.2	4	6.4	4
A4564	Diabetes complications	10.6	0	8.5	0
A65P	Diabetes complications	10.3	1	7.8	2
All ages	Diabetes complications	8.4	2	7.2	2

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 97: Estimated proportion of the population with diabetes mellitus, 18 years and over, 2011-2013. No Change

LGA	People[1] with diabetes mellitus / 100 population (ASR[2]) 2011-13	Percentile (Victoria)	Subjective assessment (Victoria)
Brimbank	8.8	99	Extremely high
Hume	7.3	95	Extremely high
Maribyrnong	6.9	93	Extremely high
Darebin	6.7	91	Extremely high
Moreland	6.7	91	Extremely high
Melton	6.0	84	Very high
Hobsons Bay	5.7	77	High
Yarra	5.6	76	High
Moonee Valley	5.6	75	High
Wyndham	5.5	71	High
Victoria	**4.7**	-	-
Australia	**5.4**	-	-

Notes: 1 The rate is calculated using an estimate of the population of affected people. 2 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Population health – Chronic disease, respiratory disease

Table 98: Burden of disease attributed to respiratory disease by age group, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
0-4	Chronic respiratory disease	7.3	4	7.1	4
5-14	Chronic respiratory disease	42.3	1	42.3	1
15-24	Chronic respiratory disease	5.4	4	5.3	4
25-34	Chronic respiratory disease	4.3	6	4.2	6
35-44	Chronic respiratory disease	4.4	8	4.3	8
45-54	Chronic respiratory disease	4.1	7	3.9	7
55-64	Chronic respiratory disease	6.2	6	6.0	6
65-74	Chronic respiratory disease	8.3	4	7.9	4
75+	Chronic respiratory disease	8.3	4	7.6	4
All ages	Chronic respiratory disease	7.5	5	7.3	5

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 99: Potentially avoidable hospitalisations from respiratory system diseases (Ambulatory Care Sensitive Conditions), main ages, 2015/2016.

Age group	Disease	Hospital admissions – residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A3544	Chronic obstructive pulmonary disease	0.7	4	1.6	4
A4564	Chronic obstructive pulmonary disease	7.3	3	8.6	3
A65P	Chronic obstructive pulmonary disease	15.6	1	15.8	1
All ages	Chronic obstructive pulmonary disease	8	2	9.3	2

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 100: Potentially avoidable hospitalisations from asthma (Ambulatory Care Sensitive Conditions), main ages, 2015/2016.

Age group	Disease	Hospital admissions – residents of NWMPHN, % 2015-16	Rank (NWMPHN)	Hospital admissions – residents of Victoria, % 2015-16	Rank (Victoria)
A0004	Asthma	9.1	1	7.7	1
A0514	Asthma	23.7	0	21.3	0
A1524	Asthma	7	2	6.5	2
A2534	Asthma	5.4	3	5.8	3
A3544	Asthma	6.5	2	5.9	2
A4564	Asthma	3.8	4	3.9	4
A65P	Asthma	1.2	5	1.5	5
All ages	Asthma	5	4	4.4	4

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 101: Estimated proportion of the population with respiratory system diseases, 2011-2013. No Change

LGA	People with respiratory system diseases / 100 population (ASR[1]) 2011-13	Percentile (Victoria)	Subjective assessment (Victoria)
Hobsons Bay	31.0	68	Moderate
Victoria	**29.7**	-	-
Australia	**28.7**	-	-

Note: 1 Age Standardised Rate.

Comment: While the PHN LGAs generally have low estimated rates relative to Victoria, given the high disease burden particularly amongst the young it remains clinically relevant

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 102: Estimated population with asthma, 2011-2013. No Change

LGA	People with asthma / 100 population (ASR[1]) 2011-2013	Percentile (Australia)	Subjective assessment (Australia)
Macedon Ranges	13.1	91	Extremely high
Moorabool	13.1	91	Extremely high
Victoria	**10.9**	-	
Australia	**10.2**	-	

Note: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 103: Average annual rate of deaths from respiratory system diseases, 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - respiratory system diseases 100,000 population (ASR[1]) 2010-2014)	Percentile
Suburban	Hobsons Bay	16.5	69
	Darebin	12.4	28
	Moonee Valley	12.0	26
	Moreland	11.5	21
	Brimbank	10.9	14
Peri-urban	Moorabool	15.9	61
	Macedon Ranges	8.3	7
Inner city	Maribyrnong	17.4	75
	Yarra	12.3	27
	Melbourne	9.1	10
Growth area	Hume	18.4	82
	Melton	17.2	72
	Wyndham	13.7	42
Victoria	**Victoria**	**12.7**	**30**
Australia	**AUSTRALIA**	**14.8**	**49**

Note: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 104: Deaths from chronic obstructive pulmonary disease, 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - chronic obstructive pulmonary disease 100 population(ASR[1]) 2010-2014)	Percentile
Suburban	Hobsons Bay	9.7	63
	Darebin	7.1	38
	Moonee Valley	6.4	22
	Moreland	5.9	16
	Brimbank	5.5	14
Peri-urban	Moorabool	9.1	54
	Macedon Ranges	5.6	15
Inner city	Maribyrnong	10.4	73
	Melbourne	6.7	28
	Yarra	6.7	27
Growth area	Hume	9.5	60
	Melton	9.1	55
	Wyndham	8.1	45
Victoria	**Victoria**	**7.3**	**40**
Australia	**AUSTRALIA**	**8.5**	**46**

Note: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Population health – Chronic disease, cardiovascular

Table 105: Burden of disease attributed to cardiovascular disease, main ages, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
35-44	Cardiovascular disease	7.3	3	7.4	3
45-54	Cardiovascular disease	13.7	3	13.8	3
55-64	Cardiovascular disease	18.2	2	18.2	2
65-74	Cardiovascular disease	23.2	2	23.5	2
75+	Cardiovascular disease	31.9	1	32.2	1
All ages	Cardiovascular disease	16.1	3	17.7	2

Notes: 1 The percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed by all conditions, i.e. the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition(s). DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 106: Potentially avoidable hospitalisations from iron deficiency anaemia and congestive heart failure (Ambulatory Care Sensitive Conditions), main ages, 2015/2016.

Age group	Disease	Hospital admissions, NWMPHN residents, % 2015-16	Rank (PHN)	Hospital admissions, Victoria residents, % 2015-16	Rank (Vic)
A0004	Iron deficiency anaemia	0.2	5	0.5	5
A1524	Iron deficiency anaemia	9.3	4	10	4
A2534	Iron deficiency anaemia	16.8	1	15.4	1
A3544	Iron deficiency anaemia	18.5	0	18.6	0
A4564	Iron deficiency anaemia	13.3	2	13.3	2
A65P	Iron deficiency anaemia	12.3	3	11.7	3
All ages	Iron deficiency anaemia	11.7	3	11.5	3

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, reported in Victorian Health Information Surveillance System, 2016.

Table 107: Proportion of the population with high blood cholesterol, 18 years and over, 2014-15.

Region	LGA	People with high blood cholesterol (100 population (ASR[1]) 2014-2015)	Percentile
Suburban	Brimbank	29.2	93
	Darebin	28.4	92
	Hobsons Bay	27.3	88
	Moonee Valley	22.2	37
	Moreland	31.7	94
Peri-urban	Macedon Ranges	21	22
	Moorabool	21.9	33
Inner city	Maribyrnong	32.5	96
	Melbourne	43.1	99
	Yarra	36.4	98
Growth area	Hume	25.8	86
	Melton	23.9	61
	Wyndham	22.0	33
Victoria	**Victoria**	**24.1**	**70**
Australia	**AUSTRALIA**	**23.1**	**53**

Note: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 108: Estimated proportion of the population with circulatory system diseases, 2 years and over, 2011-2013. No Change

LGA	People with circulatory system diseases /100 population (ASR[1]) 2011-2013	Percentile (Victoria)	Subjective assessment (Victoria)
Maribyrnong	18.2	99	Extremely high
Melton	17.5	80	Very high
Darebin	17.4	69	High
Moreland	17.2	58	
Hobsons Bay	17.2	58	
Yarra	17.0	48	
Moorabool	16.8	38	
Victoria	**16.6**	-	-
Australia	**17.3**	-	-

Statistical estimate

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 109: Estimated proportion of the population with hypertensive diseases, 2014-2015.

Region	LGA	People with hypertensive diseases (100 population (ASR[1]) 2014-2015)	Percentile
Suburban	Moreland	31.7	94
	Brimbank	29.2	93
	Darebin	28.4	92
	Hobsons Bay	27.3	88
	Moonee Valley	22.2	37
Peri-urban	Moorabool	21.9	33
	Macedon Ranges	21.0	22
Inner city	Melbourne	43.1	99
	Yarra	36.4	98
	Maribyrnong	32.5	96
Growth area	Hume	25.8	86
	Melton	23.9	61
	Wyndham	22.0	33
Victoria	**Victoria**	**24.1**	
Australia	**AUSTRALIA**	**23.1**	

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 110: Proportion of deaths attributed to circulatory diseases, 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - circulatory diseases 100,000 population (ASR[1]) 2010-2014)	Percentile
Suburban	Darebin	50.5	68
	Brimbank	47.3	55
	Hobsons Bay	47.1	54
	Moreland	46.5	52
	Moonee Valley	39.3	27
Peri-urban	Moorabool	46.5	51
	Macedon Ranges	33.8	8
Inner city	Maribyrnong	58.8	91
	Yarra	39.8	28
	Melbourne	36.7	15
Growth area	Hume	49.9	64
	Melton	49.5	63
	Wyndham	41.5	33
Victoria	**Victoria**	**42.1**	
Australia	**AUSTRALIA**	**45.6**	

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 111: Deaths attributed to ischaemic heart disease, 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - ischaemic heart disease 100,000 population (ASR) 2010-2014)	Percentile
Suburban	Darebin	28.2	78
	Moreland	25.4	58
	Hobsons Bay	25.1	55
	Brimbank	21.6	34
	Moonee Valley	21.4	32
Peri-urban	Moorabool	23.1	40
	Macedon Ranges	16.7	11
Inner city	Maribyrnong	30.6	85
	Yarra	19.2	21
	Melbourne	18.7	20
Growth area	Hume	27.5	77
	Melton	24.7	50
	Wyndham	19.7	25
Victoria	**Victoria**	**21.5**	
Australia	**AUSTRALIA**	**24.1**	

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Table 112: Proportion of deaths attributed to cerebrovascular diseases (stroke), 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - cerebrovascular diseases 100,000 population (ASR[1]) 2010-2014)	Percentile
Suburban	Brimbank	10.2	79
	Hobsons Bay	9.6	74
	Moreland	8.1	40
	Darebin	7.8	35
	Moonee Valley	6.6	19
Peri-urban	Moorabool	8.9	63
	Macedon Ranges	6.5	17
Inner city	Maribyrnong	8.8	60
	Yarra	8.7	58
	Melbourne	5.9	11
Growth area	Melton	9.3	69
	Wyndham	8.3	42
	Hume	7.4	28
Victoria	**Victoria**	**8.0**	
Australia	**AUSTRALIA**	**8.3**	

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia by Local Government Area, August 2016.

Population health – Chronic disease, cancer

Table 113: Burden of disease attributed to cancer, by age group, 2001. No Change

Age group	Disease	Proportion of burden (%[1]) NWMPHN	NWMPHN (Rank)	Proportion of burden (%[1]) Victoria	Victoria (Rank)
15-24	Malignant cancers	3.1	6	3.3	6
25-34	Malignant cancers	5.1	4	5.1	4
35-44	Malignant cancers	13.4	2	14.1	2
45-54	Malignant cancers	25.2	1	26.3	1
55-64	Malignant cancers	32.1	1	33.0	1
65-74	Malignant cancers	32.4	1	32.9	1
75+	Malignant cancers	21.1	2	21.2	2
All ages	Malignant cancers	19.3	1	20.7	1

Notes: 1 Percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed to all conditions – the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition. DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 114: National Bowel Cancer Screen Program participation rates, 2014-15.

SA4	SA3	(%) participation of eligible population
Melb - Inner	Brunswick - Coburg	37
	Darebin - South	41
	Essendon	40
	Melbourne City	35
	Yarra	40
Melb - NE	Darebin - North	35
Melb - NW	Keilor	40
	Macedon Ranges	43
	Moreland - North	35
	Sunbury	39
	Tulla. – Broadmeadows	33
Melb - West	Brimbank	36
	Hobsons Bay	39
	Maribyrnong	37
	Melton - Bacchus Marsh	36
	Wyndham	35
Victoria		**40**
Australia		**39**

Source: AIHW, Participation in Australian cancer screening programs in 2014-2015

Population health – musculoskeletal disease

Table 115: Burden of disease attributed to musculoskeletal disease, main ages, 2001. No Change

Age group	Disease	NWMPHN %[1]	NWMPHN Rank	Victoria %[1]	Victoria Rank
35-44	Musculoskeletal	4.3	9	4.2	9
45-54	Musculoskeletal	5.2	6	5.1	6
55-64	Musculoskeletal	4.7	7	4.6	7
65-74	Musculoskeletal	4.4	6	4.3	6
75+	Musculoskeletal	2.5	8	2.4	8
All ages	Musculoskeletal	3.2	8	3.2	8

Notes: 1 Percentage represents the burden of disease estimated in DALYs attributed to the condition(s) cited, as a percentage of the DALYs attributed to all conditions – the total burden of disease. Disability Adjusted Life Years (DALY): An index of the years of reduced life attributed to the nominated condition. DALYs are a function of the years lost by premature mortality plus the years experiencing the condition adjusted for severity.

Source: Victorian Burden of Disease Study 2001 reported in Victorian Health Information Surveillance System 2016

Table 116: Estimated population with musculoskeletal diseases, 2011-2013. No Change

LGA	People with musculoskeletal diseases / 100 population (ASR[1]) 2011-2013	Percentile (Victoria)	Subjective assessment (Victoria)
Moorabool	28.1	59	Moderate
Hume	27.9	56	Moderate
Australia	**27.7**	-	-
Victoria	**26.6**	-	-

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia, Victoria.; Data by Local Government Area, August 2016.

Population health – pyelonephritis

Table 117: Potentially avoidable hospitalisations from pyelonephritis (Ambulatory Care Sensitive Conditions), main ages, 2015/2016.

Age group	Disease	Hospital admissions from pyelonephritis – residents of NWMPHN, % 2015-16	Rank (PHN)	Hospital admissions from pyelonephritis – residents of Victoria, % 2015-16	Rank (Victoria)
A0004	Pyelonephritis	10.6	2	10	2
A0514	Pyelonephritis	2.4	5	3.7	5
A1524	Pyelonephritis	13	0	13.8	0
A2534	Pyelonephritis	11.2	1	11.6	1
A3544	Pyelonephritis	7.7	4	7.9	4
A4564	Pyelonephritis	7.4	4	7.6	4
All ages	Pyelonephritis	8.7	3	9.4	3

Source: Victorian Ambulatory Care Sensitive Conditions (ACSCs) reports, 2015-16, published in Victorian Health Information Surveillance System, October 2016.

Table 118: Breast screening participation rate, females aged 50-74, 2014-15

SA4	SA3	50-54	50-69	50-74	55-59	60-64	65-69	70-74
Melb - Inner	Brunswick - Coburg	55	55	52	54	56	56	34
	Darebin - South	54	53	50	53	50	52	32
	Essendon	58	60	58	61	63	60	46
	Melbourne City	42	45	43	42	49	48	32
	Yarra	46	51	49	50	55	55	33
Melb - NE	Darebin - North	48	49	48	47	51	52	39
Melb - NW	Keilor	56	61	60	58	65	66	52
	Macedon Ranges	56	60	59	60	66	61	47
	Moreland - North	52	55	53	53	59	56	42
	Sunbury	51	57	56	56	62	59	49
	Tulla. - B/meadows	50	52	51	51	57	54	41
Melb-West	Brimbank	50	53	51	52	55	56	39
	Hobsons Bay	51	53	51	51	55	57	38
	Maribyrnong	50	52	51	51	54	56	39
	Melton - Bacchus Marsh	49	52	52	49	56	58	44
	Wyndham	46	48	47	46	50	52	38
NWMPHN		**46**	**48**	**47**	**46**	**50**	**52**	**38**
Victoria		**51**	**54**	**52**	**52**	**57**	**58**	**43**
Australia		**49**	**54**	**53**	**53**	**59**	**60**	**49**

Source: AIHW, Participation in Australian cancer screening programs in 2014-2015

Table 119: Breast cancer diagnosis rate, females aged 50-69, 2010-2011. No Change

LGA	Breast cancer diagnosis rate - Number positive results / 10,000 screens conducted (ASR[1]) 2010-2011	Percentile (Victoria)	Subjective assessment (Victoria)
Moonee Valley	76.0	78	High
Darebin	75.4	75	High
Moreland	69.9	71	High
Melbourne	68.7	70	High
Victoria	**60.7**	-	-

Notes: 1 Age Standardised Rate.

Source: Social Health Atlas of Australia, Victoria, Data by Local Government Area, August 2016.

Table 120: Cervical screening participation rate, females aged 20-69, 2014-15

SA4	SA3	Aged 20-69 years
Melb - Inner	Brunswick - Coburg	61
	Darebin - South	66
	Essendon	60
	Melbourne City	42
	Yarra	64
Melb - NE	Darebin - North	54
Melb - NW	Keilor	60
	Macedon Ranges	66
	Moreland - North	55
	Sunbury	56
	Tullamarine – Broadmeadows	51
Melb - West	Brimbank	54
	Hobsons Bay	61
	Maribyrnong	58
	Melton -Bacchus Marsh	53
	Wyndham	50
NWMPHN		**56**
Victoria		**60**
Australia		**57**

Source: AIHW, Participation in Australian cancer screening programs in 2014-2015

Table 121: Cervical screening outcomes, high grade abnormality, females aged 20-69, 2013-2014.

Region	LGA	Cervical screening outcomes - number of screens showing high grade abnormality 10,000 screens (ASR[1]) 2013-2014)	Percentile
Suburban	Hobsons Bay	13.0	62
	Darebin	12.6	56
	Moreland	12.2	43
	Brimbank	10.7	22
	Moonee Valley	10.5	20
Peri-urban	Macedon Ranges	11.9	40
	Moorabool	10.7	23
Inner city	Yarra	16.6	93
	Melbourne	15.9	88
	Maribyrnong	12.6	57
Growth area	Melton	12.1	42
	Hume	10.7	24
	Wyndham	9.7	9
Victoria	Victoria	12.5	

Notes: 1 Age Standardised Rate

Source: Social Health Atlas of Australia, Victoria, Data by Local Government Area, August 2016.

Table 122: Deaths attributed to cancers, 0-74 years, 2010-2014.

Region	LGA	Average annual number of deaths - cancer / 100,000 population (ASR[1]) 2010-2014	Percentile
Suburban	Hobsons Bay	110.7	74
	Moreland	100.9	46
	Darebin	99.1	39
	Brimbank	93.1	23
	Moonee Valley	88.4	13
Peri-urban	Moorabool	109.8	73
	Macedon Ranges	79.9	7
Inner city	Maribyrnong	98.8	38
	Yarra	96.2	32
	Melbourne	67.2	1
Growth area	Hume	100.4	42
	Melton	96.5	33
	Wyndham	96.2	30
Victoria	**Victoria**	**96.3**	
Australia	**AUSTRALIA**	**100.7**	

NOTES: 1 ASR; Age Standardised Rate

Source: Social Health Atlas of Australia, Victoria, Data by Local Government Area, August 2016.

Table 123: Deaths attributed to colorectal cancer, 0-74 years, 2010-2014.

Region	LGA	Average annual number of deaths attributed to colorectal cancer / 100,000 population (ASR[1]) 2010-2014	Percentile
Suburban	Moreland	11.5	85
	Hobsons Bay	11.0	80
	Brimbank	10.2	73
	Moonee Valley	8.5	35
	Darebin	8.3	28
Peri-urban	Moorabool	9.7	65
	Macedon Ranges	8.2	25
Inner city	Yarra	10.9	78
	Maribyrnong	9.9	68
	Melbourne	5.4	3
Growth area	Melton	9.3	56
	Wyndham	9.0	50
	Hume	8.5	34
Victoria	**Victoria**	**9.3**	
Australia	**AUSTRALIA**	**9.0**	

NOTES: 1 ASR; Age Standardised Rate

Source: Social Health Atlas of Australia; Data by Local Government Area, August 2016.

Table 124: Deaths from lung cancer, 0-74 years, 2010-2014.

Region	LGA	Average annual number of deaths -lung cancer / 100,000 population (ASR[1]) 2010-2014	Percentile
Suburban	Hobsons Bay	26.7	88
	Moreland	20.5	46
	Brimbank	19.2	31
	Darebin	19.0	27
	Moonee Valley	14.5	14
Peri-urban	Moorabool	22.5	64
	Macedon Ranges	14.5	15
Inner city	Yarra	23.7	71
	Maribyrnong	20.1	44
	Melbourne	9.4	0
Growth area	Wyndham	22.2	60
	Hume	22.0	58
	Melton	21.3	53
Victoria	**Victoria**	**1.09**	
Australia	**AUSTRALIA**	**21.1**	

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia; Data by Primary Health Network, August 2016.

Table 125: Deaths from breast cancer, 0-74 years, 2010-2014.

Region	LGA	Average annual deaths - breast cancer / 100,000 population (ASR[1]) 2010-2014	Percentile (Victoria)
Suburban	Moreland	18.2	77
	Hobsons Bay	17.8	73
	Darebin	16.5	50
	Brimbank	12.6	13
	Moonee Valley	12.3	8
Peri-urban	Macedon Ranges	13.1	15
	Moorabool	9.8	3
Inner city	Yarra	16.7	61
	Maribyrnong	12.6	11
	Melbourne	10.5	4
Growth area	Melton	17.0	65
	Hume	16.5	52
	Wyndham	12.6	12
Victoria	**Victoria**	**16.4**	
Australia	**AUSTRALIA**	**16.3**	

Note: 1 Age Standardised Rate

Source: Social Health Atlas of Australia; Data by Primary Health Network, August 2016.

Service needs – workforce

Table 126: GP patient experience, 20013-2014.

Indicator	Percentage of patients NWMPHN	Percentage of patients Australia (average)	Percentile (Australia)	Subjective assessment (Australia)
Adults who had a preferred GP in the preceding 12 months	76.0	78.3	19	Very low
Adults who felt they waited longer than acceptable to get an appointment with a GP	26.0	23.5	74	High

Source: National Health Performance Authority, 2014.

Table 127: GP attendances, 2015-16

SA4 NAME	SA3 NAME	No of attendances per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	5.9	49
	Darebin - South	5.2	14
	Essendon	5.6	28
	Melbourne City	6.5	72
	Yarra	4.9	8
Melbourne - North East	Darebin - North	6.5	72
Melbourne - North West	Keilor	6.2	66
	Macedon Ranges	6.6	77
	Moreland - North	6.7	80
	Sunbury	7.6	97
	Tullamarine - Broadmeadows	8.5	100
Melbourne - West	Brimbank	7.3	91
	Hobsons Bay	5.9	49
	Maribyrnong	5.9	49
	Melton - Bacchus Marsh	7.7	98
	Wyndham	7.3	91
North Western Melbourne		**6.7**	
Australia		**5.9**	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

https://www.myhealthycommunities.gov.au/explore-the-data#download-data-tab-content

Table 128: MBS expenditure on GP attendances, 2015-16

SA4 NAME	SA3 NAME	$ per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	300.0	68
	Darebin - South	264.1	20
	Essendon	276.4	38
	Melbourne City	352.6	92
	Yarra	251.7	9
Melbourne - North East	Darebin - North	316.8	75
Melbourne - North West	Keilor	296.1	65
	Macedon Ranges	329.4	82
	Moreland - North	332.0	83
	Sunbury	353.3	94
	Tullamarine - Broadmeadows	405.1	100
Melbourne - West	Brimbank	344.8	89
	Hobsons Bay	289.7	57
	Maribyrnong	293.0	62
	Melton - Bacchus Marsh	374.7	98
	Wyndham	352.4	91
North Western Melbourne		**325.8**	
Australia		**289.6**	

Note: Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

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Table 129: Proportion of bulk-billed GP attendances, 2015-16.

SA4 NAME	SA3 NAME	% attendances bulk-billed (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	83.7	51
	Darebin - South	73.8	9
	Essendon	80.6	38
	Melbourne City	80.0	31
	Yarra	74.3	12
Melbourne - North East	Darebin - North	91.8	88
Melbourne - North West	Keilor	83.8	52
	Macedon Ranges	79.6	26
	Moreland - North	90.8	85
	Sunbury	92.5	91
	Tullamarine - Broadmeadows	97.2	100
Melbourne - West	Brimbank	95.4	97
	Hobsons Bay	87.0	71
	Maribyrnong	87.1	74
	Melton - Bacchus Marsh	93.4	92
	Wyndham	96.1	98
North Western Melbourne		**90.1**	
Australia		**85.1**	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

https://www.myhealthycommunities.gov.au/explore-the-data#download-data-tab-content

Table 130: Selected GP and medical specialist access indicators, 2015-16

Indicator	NWMPHN	Australia	Significant at 95% CI	Year
% of adults who saw a GP in the last 12 mth	80 (77.1-82.9)	81.9 (81.4-82.5)	-	2015-16
% of adults who saw a GP more than 12 times in the last 12 mth	10.6 (9.2-12)	10.8 (10.3-11.2)	-	2015-16
% of adults who saw a GP for urgent medical care in the last 12 mth	11.1 (9.1-13.1)	10.4 (9.9-10.8)	-	2015-16
% of adults who saw a dentist, hygienist or dental spec. in the last 12 mth	43.3 (40.6-46)	48.2 (47.5-48.9)	* lower	2015-16
% of adults who saw a medical specialist in the last 12 mth	35.1 (32.5-37.7)	36.4 (35.8-36.9)	-	2015-16
% of adults who had a preferred GP in the last 12 mth	76 (71.4-80.6)	79.7 (79.2-80.2)	-	2013-14
% of adults who could not access their preferred GP in the last 12 mth	28 (23.5-32.4)	28.5 (27.8-29.2)	-	2013-14
% of adults who felt they waited longer than acceptable to get an appointment with a GP	25.6 (22.6-28.7)	22.6 (22-23.3)	-	2013-14
% of adults who felt their GP always or often listened carefully in the last 12 mth	88.8 (85.9-91.7)	91.6 (91.2-92.1)	-	2015-16
% of adults who did not see or delayed seeing a GP due to cost in the last 12 mth	4.3 (3.1-5.5)	4.1 (3.8-4.5)	-	2015-16
% of adults who delayed or avoided filling a prescription due to cost in the last 12 mth	10.4 (8-12.7)	7.6 (7.1-8)	* higher	2015-16
% of adults who did not see or delayed seeing a dentist, hygienist or dental specialist due to cost in the last 12 mth	24.5 (21.7-27.3)	19 (18.2-19.7)	* higher	2015-16
% of adults who needed to see a GP but did not in the last 12 mth	17 (14.6-19.4)	14.1 (13.6-14.6)	* higher	2015-16

Source: AIHW, 2017. Patient experiences in Australia 2013-14 to 2015-16 from the Australian Bureau of Statistics, Patient Experience Survey, 2013–14, 2014–15 and 2015–16

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Table 131: After-hours GP attendances, 2015-16.

SA4 NAME	SA3 NAME	No of attendances per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	0.58	63
	Darebin - South	0.40	45
	Essendon	0.59	65
	Melbourne City	0.72	80
	Yarra	0.34	35
Melbourne - North East	Darebin - North	0.81	88
Melbourne - North West	Keilor	0.65	69
	Macedon Ranges	0.35	37
	Moreland - North	0.80	86
	Sunbury	0.83	89
	Tullamarine - Broadmeadows	1.45	100
Melbourne - West	Brimbank	0.85	91
	Hobsons Bay	0.74	82
	Maribyrnong	0.71	78
	Melton - Bacchus Marsh	0.95	92
	Wyndham	1.20	98
North Western Melbourne	North Western Melbourne	0.83	
Australia	Australia	0.48	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

Table 132: MBS expenditure on after-hours GP attendances, 2015-16.

SA4 NAME	SA3 NAME	$ per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	40.14	69
	Darebin - South	30.79	49
	Essendon	38.01	62
	Melbourne City	59.62	94
	Yarra	26.59	43
Melbourne - North East	Darebin - North	49.88	86
Melbourne - North West	Keilor	42.61	74
	Macedon Ranges	21.10	31
	Moreland - North	52.50	88
	Sunbury	47.76	83
	Tullamarine - Broadmeadows	85.02	100
Melbourne - West	Brimbank	53.07	89
	Hobsons Bay	47.25	82
	Maribyrnong	46.77	80
	Melton - Bacchus Marsh	57.50	92
	Wyndham	71.02	98
North Western Melbourne		**52.32**	
Australia		**31.87**	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

https://www.myhealthycommunities.gov.au/explore-the-data#download-data-tab-content

Table 133: Specialist attendances, 2015-16.

SA4 NAME	SA3 NAME	No of attendances per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	1.00	66
	Darebin - South	1.05	80
	Essendon	1.03	77
	Melbourne City	1.06	81
	Yarra	1.06	81
Melbourne - North East	Darebin - North	0.95	47
Melbourne - North West	Keilor	1.10	88
	Macedon Ranges	0.91	39
	Moreland - North	0.95	47
	Sunbury	1.00	66
	Tullamarine - Broadmeadows	1.00	66
Melbourne - West	Brimbank	0.83	19
	Hobsons Bay	0.96	53
	Maribyrnong	0.85	25
	Melton - Bacchus Marsh	0.89	34
	Wyndham	0.90	38
North Western Melbourne		**0.94**	
Australia		**0.88**	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

Table 134: MBS expenditure on specialist attendances, 2015-16.

SA4 NAME	SA3 NAME	$ per person (ASR[1])	Percentile (Victoria)
Melbourne - Inner	Brunswick - Coburg	91.78	83
	Darebin - South	101.71	89
	Essendon	87.69	77
	Melbourne City	96.77	86
	Yarra	102.84	92
Melbourne - North East	Darebin - North	81.73	61
Melbourne - North West	Keilor	90.67	80
	Macedon Ranges	75.45	42
	Moreland - North	80.03	55
	Sunbury	83.78	70
	Tullamarine - Broadmeadows	81.14	56
Melbourne - West	Brimbank	67.97	23
	Hobsons Bay	81.33	58
	Maribyrnong	73.56	39
	Melton - Bacchus Marsh	73.15	34
	Wyndham	73.09	33
North Western Melbourne		**80.41**	
Australia		**73.53**	

Note: 1 Age Standardised Rate

Source: AIHW, 2017. Medicare Benefits Schedule GP and specialist attendances and expenditure from 2010–11 to 2015–16

Table 135: Emergency department primary care type (PCT) presentations, 2015-16.

Region	LGA	PCT presentations per 1000 people (crude rates)- 2015-16	Victorian percentile
Inner city	Maribyrnong (C)	121	78
	Melbourne (C)	98	67
	Yarra (C)	107	75
Suburban	Brimbank (C)	105	72
	Darebin (C)	93	61
	Hobsons Bay (C)	169	85
	Moonee Valley (C)	92	59
	Moreland (C)	107	73
Growth area	Hume (C)	94	65
	Melton (C)	86	54
	Wyndham (C)	104	71
Peri-urban	Macedon Ranges (S)	40	14
	Moorabool (S)	59	30
NWMPHN		**101**	**69%**
Victoria		**98**	**67%**

Source: VEMD, ABS ERP

Note: The measure of PCT presentations has been developed as an estimate of the activity that could be managed in a well-equipped and staffed primary care centre. It is defined as presentations that have all of the following characteristics: ATS 4 or 5; Not referred by a GP or other provider; Arrived by self; Not admitted or transferred to another hospital; Discharge home or to a residential facility.

Table 136: Districts of workforce shortage. % of SA1s within region defined as a District of Workforce Shortage, 2017.

SA4_NAME_2011	SA3_NAME_2011	GP	Diagnostic Radiology	Anaesthetics	Cardiology	Psychiatry	Ophthalmology	Obstetrics and Gynae.	General Surgery	Medical Oncology
Melbourne - Inner	Brunswick - Coburg	0%	0%	0%	0%	0%	100%	0%	100%	100%
	Darebin - South	0%	100%	100%	100%	100%	100%	100%	100%	100%
	Essendon	0%	100%	100%	0%	0%	100%	0%	0%	100%
	Melbourne City	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Yarra	0%	0%	0%	0%	0%	0%	0%	0%	0%
Melbourne - North East	Darebin - North	0%	100%	100%	100%	100%	100%	100%	100%	100%
Melbourne - North West	Keilor	0%	100%	100%	100%	100%	100%	100%	100%	100%
	Macedon Ranges	33%	100%	100%	100%	100%	100%	100%	100%	100%
	Moreland - North	0%	100%	100%	100%	100%	100%	100%	100%	100%
	Sunbury	0%	0%	100%	100%	100%	100%	100%	100%	100%
	Tullamarine - Broadmeadows	0%	100%	100%	100%	100%	100%	100%	100%	100%
Melbourne - West	Brimbank	75%	100%	100%	100%	100%	100%	100%	100%	0%
	Hobsons Bay	46%	100%	100%	100%	100%	100%	100%	100%	100%
	Maribyrnong	0%	100%	100%	0%	100%	100%	0%	0%	0%
	Melton - Bacchus Marsh	48%	100%	100%	100%	100%	100%	100%	100%	100%
	Wyndham	100%	100%	100%	100%	100%	100%	100%	100%	100%
North Western Melbourne	North Western Melbourne	28%	79%	82%	72%	77%	88%	72%	78%	69%
Victoria	Victoria	29%	58%	74%	68%	69%	71%	63%	63%	67%
Australia		39%	63%	75%	69%	78%	75%	65%	66%	73%

Source: Doctor's Connect Districts of Workforce Shortage, October 2017 http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/downloads

Table 137: HPV vaccine coverage, 2016. No Change

Region	LGA	No. of females aged 12-13 years at 30 June 2013 who received Dose 3 of the HPV vaccine by June 2016 / 100 females aged 12-13 years (%) 2016	Percentile (Victorian)	Subjective assessment (Victoria)
Suburban	Brimbank	83.8	63	-
	Darebin	81.2	45	-
	Hobsons Bay	91.5	85	-
	Moonee Valley	81.9	49	-
	Moreland	82.7	53	-
Peri-urban	Macedon Ranges	77.5	28	Low
	Moorabool	85.0	65	-
Inner city	Maribyrnong	85.1	66	-
	Melbourne	73.3	15	Very low
	Yarra	85.2	68	-
Growth area	Hume	78.0	30	Moderately low
	Melton	70.3	10	Very low
	Wyndham	87.9	78	-
Victoria		**81.3**		-
Australia		**79.2**		-

Source: Social Health Atlas of Australia; Data by Local Government Area, August 2016.

Table 138: Hepatitis B and C notifications, 2014-15.

Region	LGA	Hepatitis B – Unspecified Notifications 1,000 population (2014-2015)	Percentile	Hepatitis C – Unspecified Notifications 1,000 population (2014-15)	Percentile
Suburban	Brimbank	80.1	95	48.1	72
	Darebin	34.3	83	32.2	51
	Hobsons Bay	28.6	72	20.6	20
	Moonee Valley	30.3	80	14.3	10
	Moreland	29	76	27.1	41
Peri-urban	Macedon Ranges	2.3	17	23.4	26
	Moorabool	3.5	19	24.5	31
Inner city	Maribyrnong	77	94	53.1	77
	Melbourne	108.3	98	85.5	94
	Yarra	29.1	78	45.6	70
Growth area	Hume	40.6	87	35.4	58
	Wyndham	59.6	91	49.4	74

Comment: for privacy reasons, notification data for LGAs by age and sex was not available for publication.

Source: Victorian Department of Health and Human Services data request: BBVs and STIs by LGA. January 2016.

Table 139: STI notifications (chlamydia, gonorrhoea, and syphilis), 2014-15.

Region	LGA	STI Notifications 1,000 population (2014-2015)	Percentile
Suburban	Brimbank	181.1	88
	Darebin	219.5	91
	Hobsons Bay	143.1	83
	Moonee Valley	181.7	89
	Moreland	250.2	92
Peri-urban	Macedon Ranges	86.5	58
	Moorabool	118.9	78
Inner city	Maribyrnong	277.6	93
	Melbourne	802.1	98
	Yarra	726.4	97
Growth area	Hume	116.0	76
	Melton	N/a	N/a
	Wyndham	146.4	84

Comment: for privacy reasons, notification data for LGAs by age and sex was not available for publication.

Source: Victorian Department of Health and Human Services data request: BBVs and STIs by LGA. January 2016.

Table 140: Estimated rates of homelessness, 2013. No Change

LGA	Estimated homeless people / 1,000 population 2013	Percentile (Victoria	Subjective assessment (Victoria)
Melbourne (C)	10.6	99	Extremely high
Yarra (C)	10.0	96	Extremely high
Maribyrnong (C)	8.9	95	Extremely high
Darebin (C)	6.8	92	Extremely high
Brimbank (C)	5.8	91	Extremely high
Moreland (C)	4.9	86	Very high
Hume (C)	4.7	83	Very high
Victoria	4.0	-	-

Source: Victorian Local Government Area profiles, 2015, from ABS Census 2011.

Table 141: Family incidents, 2015-16.

Region	LGA	Family Incidents 100,000 population 2015-16	Percentile
Suburban	Brimbank	1342.8	53
	Hobsons Bay	1205.7	43
	Moreland	1090.2	38
	Darebin	1071.9	32
	Moonee Valley	899.7	19
Peri-urban	Moorabool	1468.9	61
	Macedon Ranges	938.9	22
Inner city	Maribyrnong	1089.4	37
	Melbourne	1076.0	34
	Yarra	1064.6	30
Growth area	Hume	1538.0	65
	Melton	1521.9	64
	Wyndham	1353.7	54
Victoria		**1285.2**	

Source: Crime Statistics Authority, 2016.

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Appendix C: In-depth study of mental health and drug treatment needs and services for the NW Melbourne PHN

https://nwmphn.org.au/wp-content/uploads/2017/06/NWMPHN-Mental-Health-and-AOD-Needs-Services-ASPECT-June-2016.pdf

Appendix D:
NWMPHN Regional Health Needs Assessment

https://nwmphn.org.au/wp-content/uploads/2017/07/Regional_Health_Needs_Assessment_August2016.pdf

Appendix E:
Market analysis of refugee health and resettlement

https://nwmphn.org.au/wp-content/uploads/2017/06/NWMPHN-Refugee-Humanitarian-Services-Mapping-Final-Report-October-2016.pdf

Appendix F: Regional Area profiles

F.1: Chronic disease

F.2: Children and families

F.3: Mental health

F.4: Alcohol and Other Drugs

F.5: Aboriginal and Torres Strait Islander Health

F.6: Suicide Prevention

CHRONIC DISEASE AREA PROFILE

SUMMARY

- Chronic conditions have complex and multiple causes; are generally long-term and persistent, and often lead to a gradual deterioration of health and loss of independence.
- Many chronic conditions occur across the life cycle, although they become more prevalent with older age. More than 70 per cent of people aged over 60 have two or more chronic conditions. Higher prevalence is experienced by people in the lowest socioeconomic areas.
- There is forecast to be more than a 95% increase in the number of people aged over 70 in the 15 years to 2031.
- These broad patterns of chronic disease are represented in the NWMPHN by:
    - Higher prevalence of key precursors of chronic disease in some of the growth and peri-urban locations (overweight and obesity, tobacco consumption, low dietary fruit and exercise)
    - Higher rates of chronic health conditions, preventable hospitalisation and avoidable deaths have a similar correlation to the socioeconomic determinants.
- General practice is offered incentives for improvements in chronic disease management, through MBS items for case conferencing and health care assessments. The uptake of these items across the region has been variable with low rates in many of the high chronic disease areas.

ANALYSIS NOTES

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

ABOUT CHRONIC DISEASE

The term 'chronic disease' covers a wide group of conditions, illnesses and diseases.

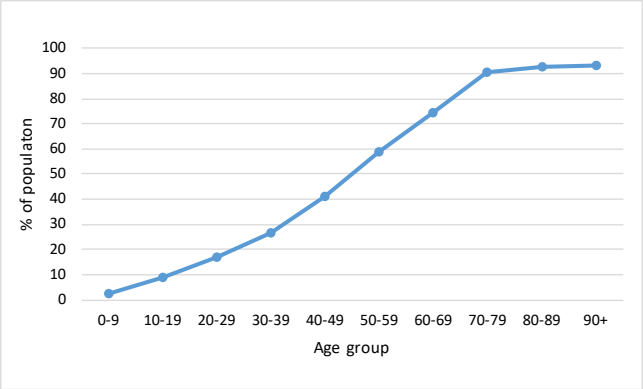
Chronic conditions have complex and multiple causes; are generally long-term and persistent, and often lead to a gradual deterioration of health and loss of independence. While not usually immediately life threatening, chronic conditions are the most common and leading cause of premature mortality.

Many chronic conditions occur across the life cycle, although they become more prevalent with older age. More than 70 per cent of people aged over 60 have two or more chronic conditions (Figure 1, p.2). Higher prevalence of chronic conditions is experienced by people in the lowest socioeconomic areas and those in rural and remote communities.

They can result from the complex interaction of external factors and biological causes, usually over a long period, and can lead to functional limitations and disability. If the biological and metabolic changes that occur during these long latency periods were identified, early intervention strategies, including prevention, treatment and management plans, may be implemented. Once present, chronic diseases often persist throughout a person's life, so there is generally a need for long-term management by individuals and health professionals.[1]

[1] AIHW 2016. Australia's health 2016. Australia's health no. 15. Cat. no. AUS 199. Canberra: AIHW.

Figure 1: Patient age-specific prevalence of 2 or more chronic conditions[2]



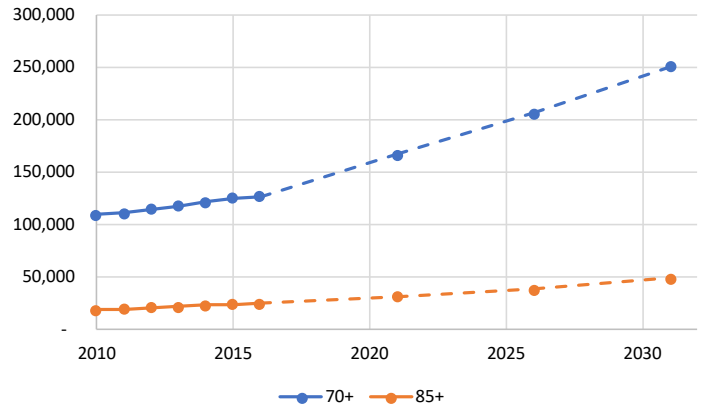
Although chronic diseases cover a diverse group of conditions the following chronic diseases are typically used as markers of prevalence, as they pose significant health problems, have been the focus of ongoing national surveillance efforts, and actions can be taken to prevent them:

- Arthritis
- Asthma
- Back pain and problems
- Cancer (such as lung and colorectal cancer)
- Cardiovascular disease (such as coronary heart disease and stroke)
- Chronic obstructive pulmonary disease (COPD)
- Diabetes

TARGET POPULATIONS

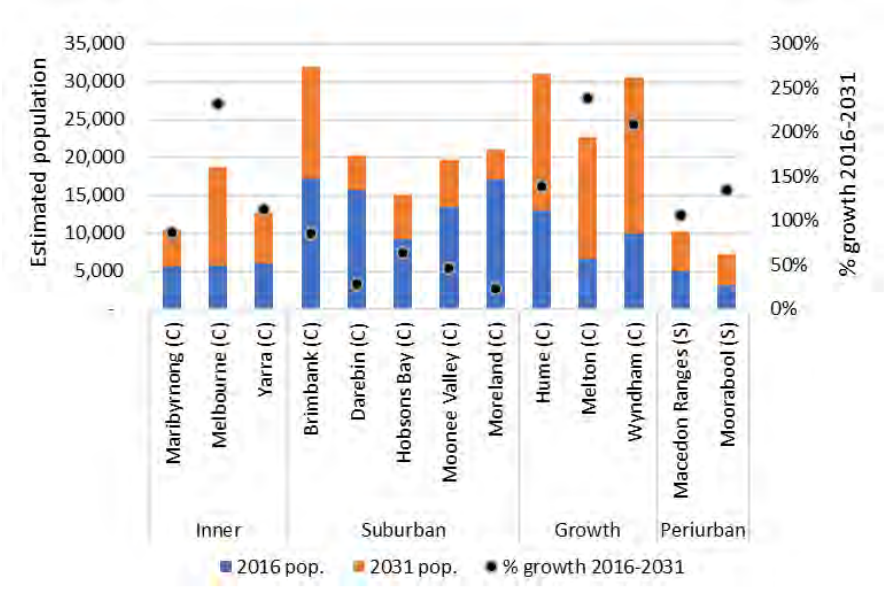
As the prevalence of chronic disease is related to age of the population, an understanding of the age distribution of the current and projected population is important. The current Victorian government population projections estimate that there will be more than a 95% increase in the number of people aged over 70 in the 15 years to 2031 (Figure 2, below). This growth is forecast to be concentrated in the Local Government Areas (LGAs) of Melbourne, Brimbank, Hume, Melton and Wyndham (Figure 3, p.3).

Figure 2: Historical and forecast population of people aged 70 or older and 85 and older in NWMPHN catchment (ABS ERP, ABS Census 2016, VIF2016)



[2] Harrison C, Britt H, Miller G, et al Examining different measures of multimorbidity, using a large prospective cross-sectional study in Australian general practice BMJ Open 2014;4:e004694. doi: 10.1136/bmjopen-2013-004694

Figure 3: 2016 and forecast 2026 population of people aged 70 or older by LGA NWMPHN catchment (ABS Census and VIF2016)



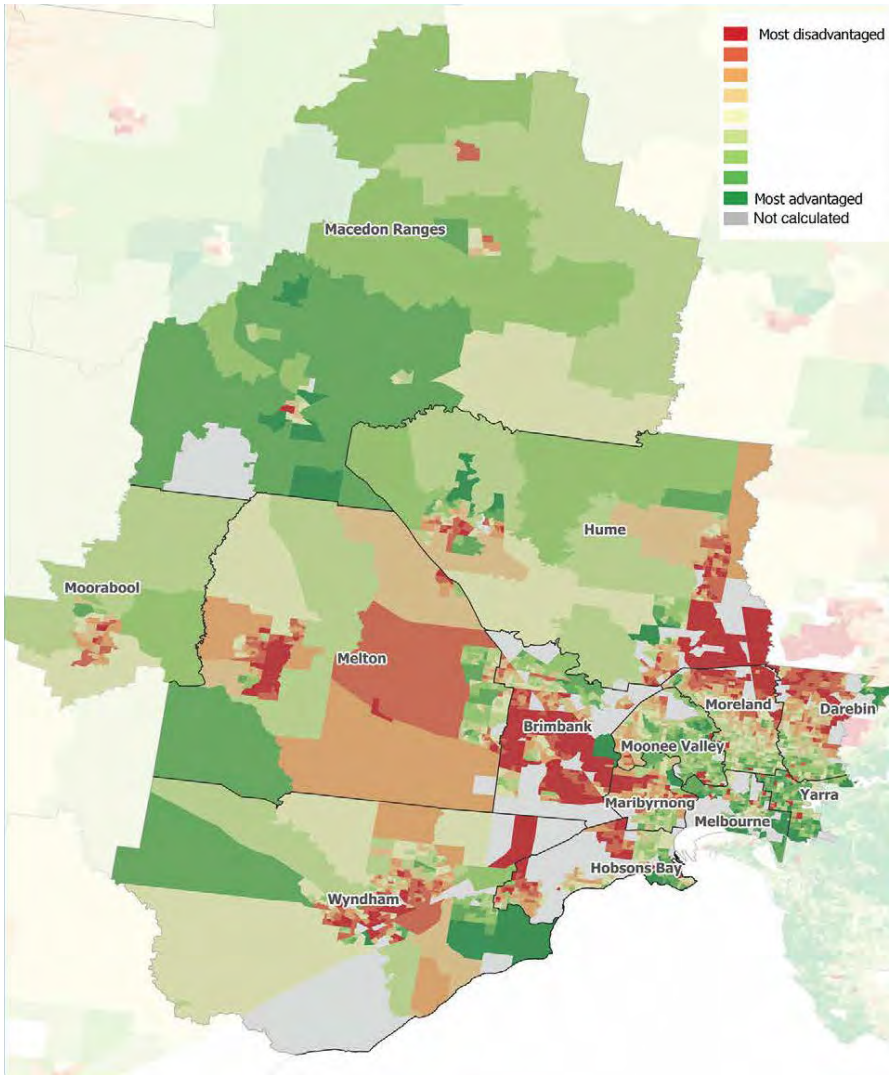
DETERMINANTS OF CHRONIC DISEASE

In addition to the age profile of the community, there are a number of other key determinants related to chronic disease prevalence. These include lifestyle related health behaviours and biomedical factors such as: tobacco use; physical activity and exercise; and body weight.

Additionally, the broad features of society and socioeconomic characteristics (ie. affluence, employment, education) contribute to the achievement of positive lifestyle related health behaviours and the establishment of chronic disease.

The Index of Relative Socioeconomic Disadvantage is a standardized approach developed by the ABS for the measurement of socioeconomic disadvantage. Figure 4 illustrates the variation across the area with some highly-advantaged areas and some very disadvantaged areas.

Figure 4: Deciles of Index of Relative Socioeconomic Disadvantage (IRSD) 2011



Source: ABS Census 2011

Data on the prevalence of protective health behaviours indicates a generally higher overall level of achievement in Victoria when compared to the Australian average, but with significant variation across LGAs in the NWMPHN region (Table 1, p.5). The general impression of the trend in the data is that the populations of the inner city have generally lower rates of the indicator, with higher rates in the growth and peri-urban areas.

Table 1: Standardised ratio of estimated number of people aged 18 years with specified health determinant (2014-15)

Region	LGA Name	Overweight (but not obese)	Obese	High waist measurement	Current smokers	≥2 alcoholic drinks per day [3]	Adequate fruit intake	No or low exercise in previous week
Inner city	Maribyrnong (C)	106.7	78.4	94.8	97.7	72.5	95.5	98.1
	Melbourne (C)	92.8	54.7	76.5	62.8	95.5	96.2	87.8
	Yarra (C)	104.0	58.2	84.5	85.3	127.3	96.8	85.7
Suburban	Brimbank (C)	105.5	98.0	96.5	108.0	51.5	93.7	109.9
	Darebin (C)	106.4	85.7	97.0	95.9	77.4	97.9	99.1
	Hobsons Bay (C)	108.6	89.2	97.9	103.0	87.2	96.9	99.0
	Moonee Valley (C)	108.7	87.3	95.2	86.0	89.0	98.7	93.8
	Moreland (C)	106.8	86.8	99.5	88.8	79.2	97.6	97.1
Growth area	Hume (C)	106.4	119.1	104.0	117.4	58.4	94.2	108.4
	Melton (C)	109.0	127.6	107.5	110.6	66.4	95.8	103.3
	Wyndham (C)	109.3	112.6	106.9	97.8	65.8	98.7	102.7
Peri-urban	Macedon Ranges (S)	107.7	106.0	102.5	89.2	108.9	96.6	94.8
	Moorabool (S)	106.3	125.7	104.8	115.0	103.2	94.6	102.0
Victoria		**105.2**	**95.6**	**98.4**	**97.0**	**89.9**	**96.7**	**98.5**
Australia		**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

Note: The standardised ratio is a measure of the overall experience of a comparison population (LGA) in terms of the standard population (Australia) by calculating the ratio of observed prevalence to expected prevalence in the comparison population.

[3] Estimated number of people aged 15 years and over

PREVALANCE OF CHRONIC DISEASE

The data below illustrates the variation in prevalence and avoidable deaths from selected chronic health conditions. Apart from diabetes and circulatory disease, there are generally lower rates of prevalent illness in the inner locations and higher in growth and peri-urban LGAs (Table 2, below).

Table 2: Standardisied ratio of estimated number of people with chronic health condition 2011–12

Region	LGA Name	Diabetes mellitus	High blood cholesterol	Circulatory system	Asthma	COPD	Musculo skeletal	Arthritis
Inner city	Maribyrnong (C)	127.3	98.0	105.2	87.1	75.2	90.8	84.5
	Melbourne (C)	86.3	107.6	94.9	76.3	71.2	86.6	82.4
	Yarra (C)	104.2	98.1	98.6	93.4	79.7	93.9	83.9
Suburban	Brimbank (C)	163.4	96.7	96.1	82.3	69.4	91.7	92.4
	Darebin (C)	123.9	98.5	100.5	95.3	77.8	96.1	101.4
	Hobsons Bay (C)	104.9	99.1	99.5	100.3	77.7	94.1	95.7
	Moonee Valley (C)	103.8	100.2	94.6	94.0	76.0	95.4	91.0
	Moreland (C)	124.0	98.8	99.6	92.5	77.4	95.4	101.6
Growth area	Hume (C)	134.7	97.8	96.0	98.9	79.0	100.6	102.5
	Melton (C)	111.1	98.1	101.4	105.8	77.5	98.6	95.8
	Wyndham (C)	101.5	99.3	95.4	92.7	74.1	91.6	86.9
Peri-urban	Macedon Ranges (S)	61.6	104.9	90.2	128.3	78.6	96.8	91.4
	Moorabool (S)	69.0	100.4	97.0	128.2	85.0	101.3	96.8
Victoria		**87.7**	**101.7**	**96.1**	**106.7**	**78.0**	**96.1**	**94.9**
Australia		**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

A different pattern is illustrated in examining avoidable deaths (Table 3), in that Maribyrnong has high rates across most conditions, unlike the other inner city LGAs, and Macedon Ranges has low rates unlike the other growth and peri-urban locations.

Table 3: Standardised ratio of avoidable deaths, persons aged 0 to 74 years (2010 to 2014)

Region	LGA Name	Cancer	Diabetes	Circulatory	IHD	Cerebrovasc	Respiratory	COPD
Inner city	Maribyrnong (C)	92.6	151.1*	120.9**	127.2*	105.7	123.6	123.2
	Melbourne (C)	65.5**	40.6*	76.6*	77.8	70.6	70.2*	79.6
	Yarra (C)	90.8	120.0	83.6	79.6	105.0	86.8	79.4
Suburban	Brimbank (C)	82.7*	154.8**	99.9	89.6	122.6	67.6**	65.5**
	Darebin (C)	94.0	73.9	107.8	117.0*	93.4	82.3	84.1
	Hobsons Bay (C)	112.9**	77.4	103.4	104.3	115.6	118.8	114.6
	Moonee Valley (C)	76.6**	108.7	82.6*	88.9	78.8	73.5	75.6
	Moreland (C)	106.7	131.2	100.7	105.5	97.7	68.9*	69.7*
Growth area	Hume (C)	96.0	110.0	109.4	114.0	88.6	113.5*	112.8
	Melton (C)	93.2	133.7	104.7	102.6	112.0	111.7	107.9
	Wyndham (C)	86.7	83.7	86.0	81.8*	99.6	98.2	96.2
Peri-urban	Macedon Ranges (S)	80.2**	58.8	74.2**	69.5*	78.4	61.2*	66.4
	Moorabool (S)	97.2	69.9	97.2	95.9	107.4	114.1	107.7
Victoria		**97.1****	**86.8****	**90.4****	**89.2****	**96.6**	**87.4****	**86.3****
Australia		**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

**statistically significant, at the 95% confidence level, **statistically significant, at the 99% confidence level*

POTENTIALLY PREVENTABLE HOSPITALISATIONS

Analysis of Potentially Preventable Hospitalisations (PPH) provides another lens to examine the impact of chronic disease on the community. It is used as a health system performance indicator of accessibility and effectiveness in the Australian National Healthcare Agreement.

This indicator has been developed to provide an estimation on the level of admissions to hospital for a condition where the hospitalisation could potentially have been prevented through the provision of appropriate individualised preventative health interventions and early disease management. These interventions would usually be delivered in primary care and community-based care settings (including by general practitioners, medical specialists, dentists, nurses and allied health professionals).

A key limitation is that not all the hospitalisations captured by the indicator could have been prevented, at least in the short term. While some of these admissions could have been prevented by more effective management in the period leading up to hospitalisation, other admissions may reflect chronically ill or elderly patients who have received optimum management in primary care. While the chronic conditions leading to hospitalisation may have been prevented through primary prevention initiatives (such as quit smoking interventions or physical activity programs), the long time lag between disease onset and complications leading to hospital admission means that such initiatives may take many years to impact on admission rates.

Despite these limitations, it does provide a geographic analysis of the different levels of burden across the community with higher PPH levels in the outer metropolitan areas of Melton-Bacchus Marsh, Wyndham and Tullamarine-Broadmeadows. The inner areas of Melbourne, Yarra, Essendon and Darebin-South have lower reported PPH levels.

Table 4: Potentially preventable hospitalisations per 100,000 people (age-standardised) in 2015–16 by NWMPHN SA3 area

SA4	SA3 name	Total PPH rate	Headline conditions				
			Cellulitis	Kidney and urinary tract infections	Chronic obstructive pulmonary disease (COPD)	Congestive heart failure	Diabetes complications
Melbourne - Inner	Brunswick - Coburg	2,295	240	215	190	273	155
	Darebin - South	2,043	132	233	157	232	146
	Essendon	2,199	133	154	163	188	155
	Melbourne City	2,479	174	203	190	207	263
	Yarra	2,166	139	212	158	198	111
Melbourne - N East	Darebin - North	2,857	170	249	260	336	272
Melbourne - N West	Keilor	2,170	202	199	161	207	142
	Macedon Ranges	1,992	97	174	204	122	144
	Moreland - North	2,785	201	244	230	313	244
	Sunbury	2,727	208	178	295	202	281
	Tulla – Bmeadows	3,077	204	247	294	339	249
Melbourne - West	Brimbank	2,573	158	200	202	304	276
	Hobsons Bay	2,301	161	200	156	192	212
	Maribyrnong	2,437	152	189	234	284	237
	Melton - B Marsh	2,599	194	207	258	237	256
	Wyndham	2,747	210	276	311	242	265
NWMPHN		**2,515**	**178**	**219**	**221**	**260**	**225**
Other Victorian PHNs							
Eastern Melbourne		2,304	186	220	157	201	164
South Eastern Melb		2,665	224	295	241	213	183
Gippsland		2,913	287	260	285	206	241

SA4	SA3 name	Total PPH rate	Headline conditions				
			Cellulitis	Kidney and urinary tract infections	Chronic obstructive pulmonary disease (COPD)	Congestive heart failure	Diabetes complications
Murray		2,826	262	266	321	214	210
Western Victoria		2,491	191	223	251	175	181
Australia		**2,643**	**253**	**288**	**260**	**211**	**183**

Sources: AIHW analysis of the National Hospital Morbidity Database and Australian Bureau of Statistics, Estimated Resident Population.
http://www.myhealthycommunities.gov.au/our-reports/potentially-preventable-hospitalisations-update/july-2017/web-update

Highlights on a red (poorer performance) to green (better performance) scale

SERVICE RESPONSE

USE OF SERVICES

The assessment of the level of service use can be used as a measure of both the adequacy of the availability of services and the impact of the condition on a population. The data below provides initial analysis on the level of chronic disease management in hospitals and general practice.

HOSPITALISATION

The data in Table 5 (below) illustrates the variation in the hospital admission rates across the NWMPHN area for selected chronic diseases, illustrating generally lower admission rates in the inner locations and higher rates in the growth areas and peri-urban locations. This trend appears to be in line with the data presented earlier.

Table 5: Standardised ratio of hospital admission rates for selected conditions, public and private hospitals (2012-13)

Region	LGA Name	Circulatory	Respiratory	Cancer	Dialysis
Inner city	Maribyrnong (C)	91.6**	73.5**	78.2**	144.2**
	Melbourne (C)	75.8**	69.9**	93.2**	81.6**
	Yarra (C)	77.7**	72.4**	97.6**	108.8**
Suburban	Brimbank (C)	97.6	75.8**	79.9**	155.8**
	Darebin (C)	96.5*	80.4**	105.7**	185.9**
	Hobsons Bay (C)	98.8	73.6**	96.9**	94.0**
	Moonee Valley (C)	93.8**	77.8**	103.2	106.3**
	Moreland (C)	97.4	91.2**	97.9**	107.8**
Growth area	Hume (C)	107.7**	103.3	102.6**	161.2**
	Melton (C)	115.1**	92.7**	95.0**	167.2**
	Wyndham (C)	112.5**	78.9**	90.6**	96.0**
Peri-urban	Macedon Ranges (S)	87.2**	83.7**	99.2**	41.4**
	Moorabool (S)	109.0*	119.9**	103.2**	..
Victoria		**99.0****	**90.5****	**104.7****	**101.8****
Australia		**100.0**	**100.0**	**100.0**	**100.0**

Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale

**statistically significant, at the 95% confidence level, **statistically significant, at the 99% confidence level*

GENERAL PRACTICE CHRONIC DISEASE MANAGEMENT PLAN

There are a range of MBS items to assist general practice and allied health to in the management of patients with chronic disease through specific items for health assessments and undertaking multidisciplinary case conferencing. The release of MBS data by small area provides some insight into the uptake of these items across the NWMPHN area.

Table 6 and 7 (below) provides data on the variation in take-up of GP multidisciplinary case conferencing and GP Health Assessments by SA3 area. These data illustrate a wide variation in utilisation across the catchment. Overall there has been an increase in the per capita uptake in the case conferencing, and a static rate in Health Assessments. Low rates of Health Assessments in Melbourne City and Yarra would be partially explained by the younger age profile in those areas. Data for additional chronic disease items is provided in Table 10 to Table 14.

Table 6: Patients and services per 100,000 people for GP multidisciplinary case conferencing items by provider location (SA3 areas)

		Patients per 100k people				Services per 100k people			
SA4	SA3	2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	32.6	35.3	40.7	43.5	53.0	57.7	65.4	79.3
	Darebin - South	9.3	8.3	6.6	8.4	13.7	12.6	9.1	12.5
	Essendon	28.5	34.1	33.8	33.0	38.2	51.8	46.3	41.2
	Melbourne City	5.9	8.3	15.9	17.4	8.9	11.3	26.4	26.8
	Yarra	10.6	12.7	18.6	17.3	13.5	17.5	25.1	23.5
Melbourne - N East	Darebin - North	5.4	9.6	19.3	22.8	8.3	15.3	29.6	34.9
Melbourne - N West	Keilor	2.2	6.1	5.2	5.5	2.5	8.2	7.3	6.5
	Macedon Ranges	55.5	62.7	68.1	74.9	86.7	98.9	102.5	111.4
	Moreland - North	17.7	14.7	14.2	13.7	27.0	26.1	24.3	22.5
	Sunbury	19.6	35.5	48.7	50.3	24.5	44.1	58.1	67.5
	Tulla - Bmeadow	25.4	34.2	50.2	57.4	33.0	51.2	83.6	96.8
Melbourne - West	Brimbank	10.1	13.4	19.7	24.3	13.7	20.6	29.5	33.6
	Hobsons Bay	7.9	15.5	19.3	28.7	11.1	20.8	30.6	49.6
	Maribyrnong	0.8	1.7	4.4	9.0	1.0	1.9	4.6	10.8
	Melton - B Marsh	27.5	41.6	47.8	56.7	37.8	60.6	68.8	83.8
	Wyndham	17.9	22.4	25.9	29.5	27.5	34.2	42.3	45.1
Victoria	**Victoria**	16.3	21.8	27.3	32.4	25.6	34.5	43.0	50.7
Australia	**Australia**	18.1	24.0	30.8	37.3	31.3	41.2	53.4	65.3

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 735, 739, 743, 747, 750, 758, 10997. Highlights on a red (lower) to green (higher) scale

Table 7: Patients and services per 1000 people for GP Heath Assessment items by provider location (SA3 areas)

		Patients per 1000 people				Services per 1000 people			
SA4	SA3	2013	2014	2015	2016	2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	30.1	31.8	36.5	30.3	30.5	32.3	36.7	30.4
	Darebin - South	38.2	29.1	27.9	29.0	38.6	29.3	28.0	29.2
	Essendon	41.2	40.3	44.7	46.5	41.9	41.1	45.1	46.8
	Melbourne City	8.1	11.4	11.2	12.3	8.2	11.6	11.2	12.4
	Yarra	16.5	15.5	19.4	18.8	16.6	15.7	19.4	18.8
Melbourne - N East	Darebin - North	29.0	29.4	32.8	30.6	29.3	29.9	32.9	30.6
Melbourne - N West	Keilor	21.4	25.3	27.4	32.5	21.5	25.6	27.4	32.7
	Macedon Ranges	29.2	27.2	26.0	25.1	29.5	27.4	26.2	25.3
	Moreland - North	44.9	50.7	45.4	43.7	45.9	51.6	45.6	43.8
	Sunbury	39.0	30.5	26.7	24.9	39.4	30.9	26.8	25.0
	Tulla - Bmeadow	25.5	32.6	36.0	30.7	25.9	33.4	36.4	31.0
Melbourne - West	Brimbank	27.8	30.2	28.6	27.4	28.2	30.6	28.8	27.7
	Hobsons Bay	20.2	27.7	23.4	25.6	20.4	28.4	23.5	25.6
	Maribyrnong	32.5	33.3	35.7	31.7	33.2	33.9	36.0	31.8
	Melton - B Marsh	22.1	30.2	33.0	30.3	22.5	30.7	33.1	30.4
	Wyndham	25.0	29.8	27.7	19.9	26.1	30.7	27.9	20.0
Victoria	**Victoria**	29.0	31.5	32.1	30.6	29.6	32.1	32.4	31.1
Australia	**Australia**	36.7	41.2	43.6	42.9	38.3	43.3	46.4	47.0

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 701, 703, 705, 707, 715, 10987. Highlights on a red (lower) to green (higher) scale

FUTURE OPPORTUNITIES

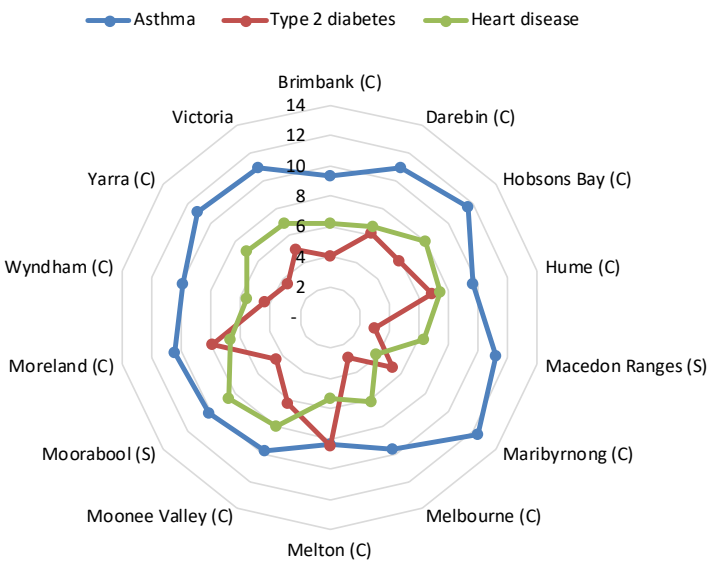
The data presented above illustrates the existing challenges for the NWMPHN and allows the identification of a number of opportunities to improve the level of chronic disease management. These include:

- Increasing work with primary care agencies and local government to increase the impact of primary prevention programs.
- Improve the reach of chronic disease management programs in the high population growth areas and those with high prevalence of disease and risk factors.

OTHER DATA

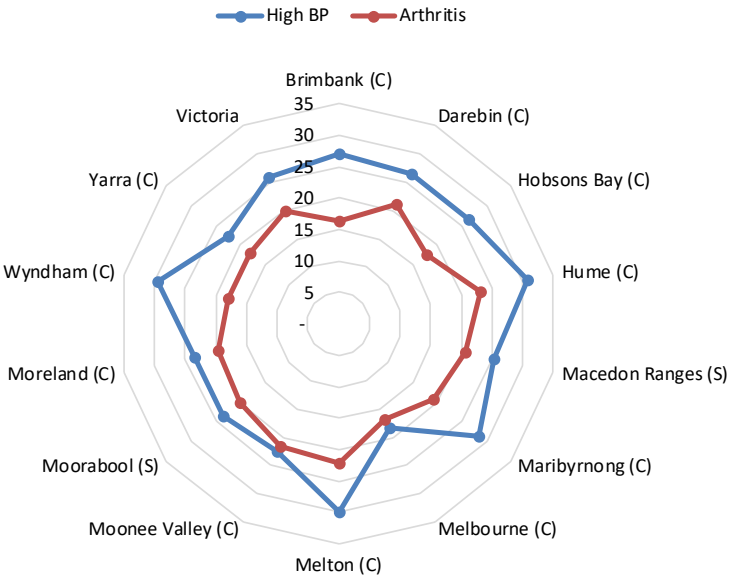
SELF REPORTED PREVALANCE OF CHRONIC DISEASE

Figure 5: Self reported prevalence of asthma, type 2 diabetes, and heart disease



Source: DHHS Victorian Population Health Survey 2011

Figure 6: Self reported prevalence of high blood pressure and arthritis



Source: DHHS Victorian Population Health Survey 2011

Table 8: Population aged 70+ in the NWMPHN municipalities 2016 and projected to 2031

Region	LGA	2016 ABS Census	2031 projection VIF2016	% growth 2016-2031	Pop growth 2016-31
Inner	Maribyrnong (C)	5,570	10,357	86%	4,787
	Melbourne (C)	5,643	18,693	231%	13,050
	Yarra (C)	5,977	12,709	113%	6,732
Suburban	Brimbank (C)	17,191	31,925	86%	14,734
	Darebin (C)	15,701	20,190	29%	4,489
	Hobsons Bay (C)	9,207	15,067	64%	5,860
	Moonee Valley (C)	13,465	19,650	46%	6,185
	Moreland (C)	17,044	21,027	23%	3,983
Growth	Hume (C)	12,976	31,023	139%	18,047
	Melton (C)	6,666	22,593	239%	15,927
	Wyndham (C)	9,912	30,600	209%	20,688
Periurban	Macedon Ranges (S)	4,930	10,179	106%	5,249
	Moorabool (S)	3,080	7,228	135%	4,148
Grand Total		**127,362**	**251,240**	**97%**	**123,878**

Source: ABS Census and VIF2016

Table 9: Population aged 85+ in the NWMPHN municipalities 2016 and projected to 2031

Region	LGA	2016 ABS Census	2031 projection VIF2016	% growth 2016-2031	Pop growth 2016-31
Inner	Maribyrnong (C)	1,371	1,907	39%	536
	Melbourne (C)	1,252	3,918	213%	2,666
	Yarra (C)	1,075	2,352	119%	1,277
Suburban	Brimbank (C)	2,927	5,855	100%	2,928
	Darebin (C)	3,730	4,307	15%	577
	Hobsons Bay (C)	1,966	3,055	55%	1,089
	Moonee Valley (C)	2,963	4,370	47%	1,407
	Moreland (C)	4,321	4,693	9%	372
Growth	Hume (C)	1,883	5,125	172%	3,242
	Melton (C)	897	4,605	413%	3,708
	Wyndham (C)	1,453	5,508	279%	4,055
Periurban	Macedon Ranges (S)	810	1,855	129%	1,045
	Moorabool (S)	483	1,359	181%	876
Grand Total		**25,131**	**48,909**	**95%**	**23,778**

Source: ABS Census and VIF2016

Table 10: Patients and services per 100,000 people for asthma care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people 2013	2014	2015	2016	Services per 1000 people 2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	1.5	1.6	1.6	1.9	1.5	1.6	1.6	1.9
	Darebin - South	6.8	8.3	7.1	6.8	6.8	8.3	7.1	6.8
	Essendon	4.9	4.8	5.5	4.7	4.9	4.9	5.5	4.7
	Melbourne City	0.2	0.5	0.4	0.5	0.2	0.5	0.4	0.5
	Yarra	0.8	0.5	0.8	0.9	0.8	0.5	0.8	0.9
Melbourne - N East	Darebin - North	0.7	0.5	0.9	0.5	0.7	0.5	0.9	0.5
Melbourne - N West	Keilor	0.1	-	-	0.5	0.1	-	-	0.5
	Macedon Ranges	9.3	3.4	8.8	9.3	9.3	3.4	8.8	9.3
	Moreland - North	0.2	0.2	0.4	1.6	0.2	0.2	0.4	1.6
	Sunbury	0.3	0.9	0.8	1.1	0.3	0.9	0.8	1.1
	Tulla - Bmeadow	2.0	2.3	2.0	2.0	2.0	2.3	2.0	2.0
Melbourne - West	Brimbank	1.8	1.9	1.5	1.4	1.8	1.9	1.5	1.4
	Hobsons Bay	0.5	0.6	0.9	0.5	0.5	0.6	0.9	0.5
	Maribyrnong	0.3	0.5	0.9	1.2	0.3	0.5	0.9	1.2
	Melton - B Marsh	1.7	1.3	1.5	1.5	1.7	1.3	1.5	1.5
	Wyndham	0.8	1.2	1.9	2.1	0.8	1.2	1.9	2.1
Victoria	**Victoria**	1.6	1.9	2.1	2.2	1.6	1.9	2.1	2.2
Australia	**Australia**	1.5	1.8	2.2	2.3	1.5	1.8	2.2	2.3

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 2546, 2547, 2552, 2553, 2558, 2559. Highlights on a red (lower) to green (higher) scale

Table 11: Patients and services per 100,000 people for cervical screening items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people 2013	2014	2015	2016	Services per 1000 people 2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	4.9	5.6	4.5	5.0	4.9	5.6	4.5	5.0
	Darebin - South	3.8	3.7	4.3	3.1	3.8	3.7	4.3	3.1
	Essendon	5.5	4.5	4.0	3.0	5.5	4.4	4.0	2.9
	Melbourne City	4.1	4.1	4.8	4.3	4.0	4.1	4.7	4.2
	Yarra	5.1	4.6	3.9	4.1	5.1	4.6	3.8	4.1
Melbourne - N East	Darebin - North	2.0	1.1	2.3	2.2	2.0	1.1	2.3	2.2
Melbourne - N West	Keilor	1.2	1.7	1.8	2.0	1.2	1.7	1.8	2.0
	Macedon Ranges	4.1	2.6	2.9	3.5	4.1	2.5	2.9	3.5
	Moreland - North	1.8	1.8	2.5	1.7	1.8	1.8	2.5	1.7
	Sunbury	3.9	3.5	3.4	3.3	3.9	3.5	3.4	3.3
	Tulla - Bmeadow	6.3	5.4	4.0	3.9	6.3	5.4	4.0	3.9
Melbourne - West	Brimbank	3.7	3.8	3.8	3.9	3.7	3.8	3.8	3.9
	Hobsons Bay	1.5	1.8	2.0	1.9	1.5	1.8	2.0	1.9
	Maribyrnong	2.4	2.6	3.1	2.9	2.4	2.6	3.1	2.9
	Melton - B Marsh	8.3	6.9	4.5	3.5	8.3	6.9	4.5	3.5
	Wyndham	4.7	6.0	5.8	6.4	4.7	6.0	5.8	6.3
Victoria	**Victoria**	3.5	3.5	3.2	3.2	3.5	3.4	3.2	3.2
Australia	**Australia**	4.9	5.6	4.5	5.0	4.9	5.6	4.5	5.0

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 2501, 2503, 2504, 2506, 2507, 2509. Highlights on a red (lower) to green (higher) scale

Table 12: Patients and services per 100,000 people for diabetes care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people 2013	2014	2015	2016	Services per 1000 people 2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	12.2	11.7	13.9	12.5	12.2	11.7	13.9	12.5
	Darebin - South	17.9	20.4	18.8	19.6	17.9	20.5	18.8	19.6
	Essendon	16.7	14.7	13.6	10.9	16.7	14.7	13.6	10.9
	Melbourne City	1.7	2.3	2.2	2.0	1.7	2.3	2.2	2.0
	Yarra	5.6	6.0	6.8	6.2	5.6	6.0	6.8	6.2
Melbourne - N East	Darebin - North	10.5	11.0	11.7	9.5	10.5	11.0	11.7	9.5
Melbourne - N West	Keilor	11.0	13.5	12.4	13.4	11.0	13.5	12.4	13.0
	Macedon Ranges	15.5	17.4	16.6	16.1	15.6	17.4	16.7	16.1
	Moreland - North	11.6	15.6	15.0	13.9	11.7	15.7	15.0	13.9
	Sunbury	12.9	11.9	10.4	10.0	12.8	11.9	10.4	10.0
	Tulla - Bmeadow	9.8	12.1	11.9	12.9	9.9	12.1	11.9	12.9
Melbourne - West	Brimbank	10.6	11.3	10.3	9.6	10.6	11.3	10.3	9.6
	Hobsons Bay	12.0	13.5	13.6	14.6	12.0	13.5	13.6	14.6
	Maribyrnong	12.0	12.0	12.1	10.5	12.0	12.0	12.1	10.5
	Melton - B Marsh	8.9	10.8	12.2	12.1	8.9	10.8	12.2	12.1
	Wyndham	6.7	7.9	7.5	6.5	6.7	7.8	7.5	6.5
Victoria	**Victoria**	9.6	10.7	10.8	10.7	9.6	10.7	10.8	10.7
Australia	**Australia**	9.5	10.6	10.9	11.1	9.5	10.6	10.9	11.1

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 2517, 2518, 2521, 2522, 2525, 2526. Highlights on a red (lower) to green (higher) scale

Table 13: Patients and services per 100,000 people for medication review items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people 2013	2014	2015	2016	Services per 1000 people 2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	13.8	13.2	7.8	8.3	13.8	13.5	7.9	8.3
	Darebin - South	12.4	12.6	9.9	7.5	12.4	12.6	10.3	7.6
	Essendon	9.5	9.1	7.3	8.5	9.5	9.2	7.3	8.5
	Melbourne City	2.2	1.9	2.7	2.5	2.2	1.9	2.7	2.5
	Yarra	2.6	3.0	2.4	3.4	2.7	3.0	2.4	3.4
Melbourne - N East	Darebin - North	7.0	7.3	5.5	4.3	7.0	7.3	5.6	4.4
Melbourne - N West	Keilor	8.4	6.8	5.5	7.3	8.4	6.9	5.7	7.6
	Macedon Ranges	10.3	8.1	3.4	7.6	10.4	8.1	3.4	7.7
	Moreland - North	12.1	9.3	7.0	6.5	12.2	9.3	7.1	6.6
	Sunbury	7.5	9.8	2.9	4.0	7.5	9.8	2.9	4.1
	Tulla - Bmeadow	6.8	6.2	6.6	5.2	6.9	6.2	6.7	5.3
Melbourne - West	Brimbank	5.5	5.6	3.7	6.3	5.5	5.6	3.8	6.4
	Hobsons Bay	5.2	5.9	3.0	3.7	5.3	6.0	3.0	3.7
	Maribyrnong	7.4	7.1	5.1	5.9	7.4	7.1	5.1	5.9
	Melton - B Marsh	5.7	5.7	3.6	4.4	5.7	5.7	3.6	4.4
	Wyndham	3.1	4.4	3.7	3.1	3.1	4.4	3.7	3.1
Victoria	**Victoria**	8.5	7.8	5.5	6.1	8.5	7.8	5.5	6.1
Australia	**Australia**	7.3	6.9	4.9	5.5	7.3	6.9	4.9	5.5

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 900, 903. Highlights on a red (lower) to green (higher) scale

Table 14: Patients and services per 100,000 people for mental health care planning items by provider location (SA3 areas)

SA4	SA3	Patients per 1000 people 2013	2014	2015	2016	Services per 1000 people 2013	2014	2015	2016
Melbourne - Inner	Brunswick - Coburg	137.7	151.5	160.2	171.9	175.2	197.2	204.4	223.0
	Darebin - South	108.2	109.2	120.8	136.0	140.2	145.4	160.4	185.0
	Essendon	118.3	123.6	132.8	141.3	146.0	148.2	163.7	172.2
	Melbourne City	108.5	125.6	135.2	138.8	152.5	187.5	205.2	204.4
	Yarra	147.5	152.2	160.7	167.3	190.5	191.6	202.2	206.2
Melbourne - N East	Darebin - North	59.8	61.5	66.9	72.5	87.6	89.5	92.1	102.8
Melbourne - N West	Keilor	54.7	60.1	64.7	73.0	71.9	76.4	79.5	88.6
	Macedon Ranges	82.8	89.7	99.5	126.2	108.0	121.0	137.3	171.7
	Moreland - North	53.1	56.4	62.2	65.4	65.2	68.6	72.8	77.0
	Sunbury	117.2	126.3	142.3	149.4	157.6	179.2	210.9	214.9
	Tulla - Bmeadow	91.5	101.6	108.3	118.6	119.4	136.1	140.1	155.8
Melbourne - West	Brimbank	69.9	77.3	83.1	86.4	95.5	104.8	116.2	119.6
	Hobsons Bay	60.2	74.3	81.3	91.7	72.0	90.2	98.2	116.5
	Maribyrnong	79.8	80.7	94.9	108.8	99.5	99.1	119.1	135.5
	Melton - B Marsh	99.3	107.3	112.5	127.1	179.9	187.0	195.9	216.5
	Wyndham	74.7	88.0	91.1	104.6	100.0	123.3	120.3	143.3
Victoria	**Victoria**	87.6	95.3	102.6	111.8	117.5	127.9	139.0	151.6
Australia	**Australia**	75.9	83.3	90.5	99.1	100.0	109.7	119.2	131.0

Source: MBS Statistics http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data, ABS ERP. Item numbers: 2700, 2701, 2712, 2713, 2715, 2717. Highlights on a red (lower) to green (higher) scale

Table 15: PBS prescriptions dispensed, decile of age and sex standardised rate, by SA3, 2013–14

SA4	SA3	Asthma medicines people aged 3 to 19 years	Asthma medicines people aged 20 to 44 years	Asthma and COPD medicines people aged 45 years and over.	Asthma and related respiratory admissions to hospital people aged 3 to 19 years#	Asthma admissions to hospital people aged 20 to 44 years, 2010–11 to 2012–13 ##	Asthma and COPD admissions to hospital aged 45 years and over.##	Heart failure admissions to hospital people aged 40 years and over. #	PBS prescriptions dispensed for anticholinesterase medicines people aged 65 years and over, 2013–14 *
Melbourne - Inner	Bwick - Coburg	9	9	6	1	8	7	1	6
	Darebin - South	8	9	8	6	7	9	3	3
	Essendon	9	9	8	5	8	9	6	5
	Melbourne City	8	10	9	1	8	9	7	2
	Yarra	5	9	7	5	6	8	9	2
Melbourne - NE	Darebin - North	7	8	4	7	8	6	2	2
Melbourne - NW	Keilor	7	7	9	1	5	9	4	6
	Macedon Ranges	5	5	7	7	6	10	6	4
	Moreland - North	6	8	5	1	6	7	2	6
	Sunbury	2	3	3	7	1	6	7	4
	Tulla - Bmeadows	6	6	2	3	4	2	1	4
Melbourne - West	Brimbank	4	7	5	1	2	8	2	8
	Hobsons Bay	8	7	6	5	7	9	5	5
	Maribyrnong	6	9	2	1	6	7	3	8
	Melton - B Marsh	5	6	2	4	3	5	3	6
	Wyndham	7	7	4	6	5	5	4	8

Deciles of rates: 1 = lowest 10% of rates; 10 = highest 10% of rates. Highlights on a red (lower) to green (higher) scale

Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 10/04/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427

 # Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Sets from 2010–11 to 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427

Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Set 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427

** Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 19/03/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427*

CHILDREN AND FAMILIES AREA PROFILE

SUMMARY

- The NWMPHN area has a high number of children and young people aged 0-17 years, with an estimated population of over 330,000. This is forecast to grow by more than 50 per cent to more than 520,000 children and young people by 2031.
- NWMPHN is experiencing significant change in the number and location of children and families.
    - High volumes of additional children are forecast to reside in the growth areas of Hume, Melton and Wyndham local government areas (LGAs) – with more than 100,000 additional children forecast to reside in these areas by 2031.
    - The inner-city LGAs of Maribyrnong, Melbourne and Yarra are forecast to have a very high proportional change in children aged 0-17 years (80-190% growth).
- The recent growth in annual births from the early 2000's peaked in 2012. Since then, most areas in the NWMPHN area have had a declining annual volume of births – except for Melbourne and Wyndham LGAs. More than half of the total births in our region are in Brimbank, Hume, Melton, Wyndham.
- Improvements in the health of infants and children is possible as there are reported high levels of some risk factors (overweight and obesity, low fruit intake, low breastfeeding rates). The growth areas generally report a higher rate of these risk factors and the prevalence is largely consistent with socioeconomic factors.
- Population based surveys of child health and wellbeing reflect the above determinants, with higher proportions of children Hume, Wyndham, Yarra and Brimbank identified as being developmentally vulnerable in two or more of the domains of physical, educational and emotional wellbeing.

ANALYSIS NOTES

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

ABOUT CHILD AND FAMILY HEALTH

The first 1000 days of a child's life, from conception to the age of two, provide a unique opportunity to establish protective factors that will enable a healthier future.[1] The brains of infants are 'sculpted' by their external environment in the early years as they mature and develop.

The health system plays a key role in supporting parents to provide the nurturing environment infants need to develop the brain architecture and neural pathways to respond to stresses in life. Conversely, infants raised in an environment where they are subject to major stresses are at higher risk of developing chronic diseases later in life. [2]

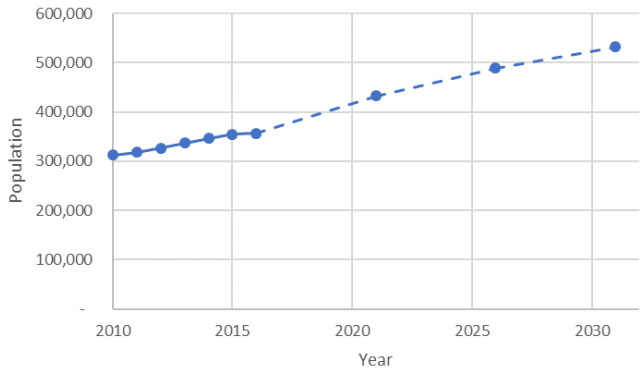
This document provides information on the key population groups and associated health issues.

The growth in children and young people in our region means this population is a key focus for NWMPHN. Figure 1 (below) illustrates the growth of 14 per cent from 2010 to 2015 (44,000 people) and shows the forecast growth of an additional 174,000 people (49 per cent) through to 2031.

[1] Arabena, K. (2015, Kerry Arabena et al, Making the World of Difference: The First 1000 Days Scientific Symposium Report (Melbourne: Indigenous Health Equity Unit, Melbourne School of Population and Global Health, 2015), p 5.). Making the World of Difference: The First 1000 Days Scientific Symposium Report. Melbourne: Indigenous Health Equity Unit, Melbourne School of Population and Global Health.

[2] Oberklaid, F. (2007, December). Brain development and the life course - the importance of the early caretaking environment. Putting Children First, the newsletter of the National Childcare Accreditation Council, pp. 8-11.

Figure 1: NWMPHN area estimated population aged 0-17 2010-2016 and forecast to 2031

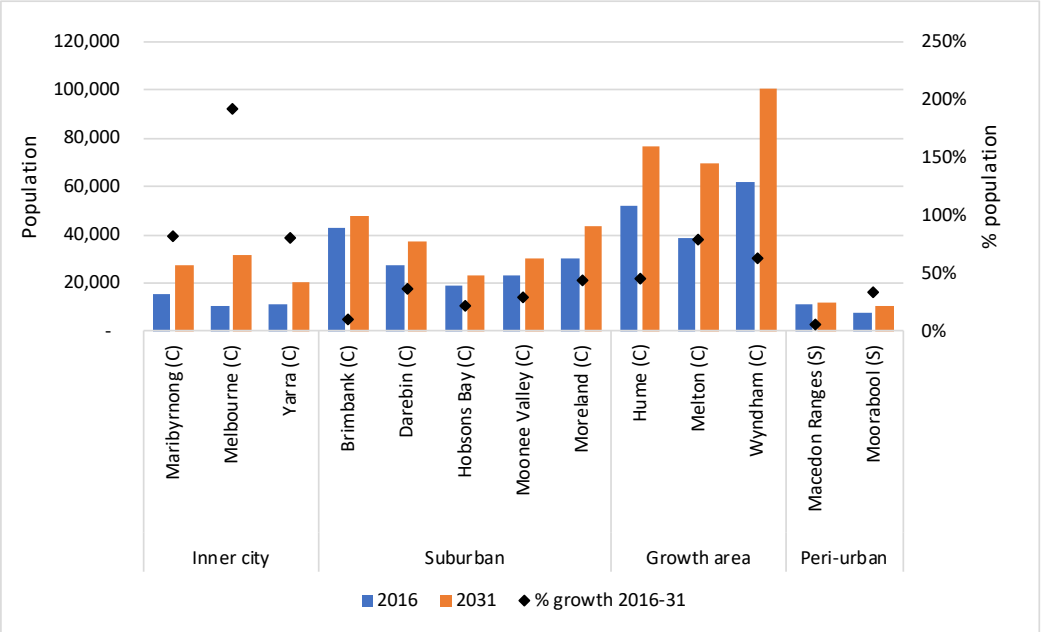


Source: ABS ERP2010-2015, Census 2016 and DELWP VIF2016

POPULATION

This existing population of children and young people and the forecast growth is not evenly distributed across the catchment. As shown in Figure 2 (below) growth is expected to be highest in the outer west and north growth areas as well as the inner city.

Figure 2: Projected population growth aged 0-17 years by LGA in NWMPHN catchment - 2016 to 2031



Source: ABS ERP 2016 and DELWP VIF2016

A number of key issues are apparent from these forecast data, including:

- Large numbers of additional children are forecast to reside in the growth areas of Hume, Melton and Wyndham LGAs – with more than 100,000 children forecast to reside in these areas by 2031. This will require a significant expansion of services to address the growing population demand.
- The inner-city LGAs of Maribyrnong, Melbourne and Yarra are forecast to have a very high proportional change in children aged 0-17 years (80-190% growth). A high proportional change in population challenges areas to provide an adequate range of services in general and specialty areas.

BIRTHS

There has been a growth in overall births across Victoria since the early 2000's. This has been a key component of the overall population change and a driver for the changing demographic profile of our community.

Table 8 (p.16) provides an overview of the total births by LGA since 2015 and indicates that:

- Overall, the recent growth in annual births peaked in 2012. Since then, most areas in the NWMPHN area have had a declining annual volume of births – except for the Melbourne and Wyndham LGAs.
- More than half of the total births are in Brimbank, Hume, Melton and Wyndham.

Table 9 and Table 10 (p.17) provide estimations of the teenage pregnancy volume and per capita rate. These data illustrate that while the overall proportion and number of births to teenagers have decreased in recent years, the higher per capita rate in Brimbank, Melton, Hume and Wyndham has remained.

HOUSEHOLD COMPOSITION

The Australian census provides an estimate of the composition of households across Australia. These data illustrate the variation in composition across the NWMPHN area, with a predominance of persons in marriage relationships in the suburban and growth area locations, in conjunction with dependent children (Figure 3 and Figure 4).

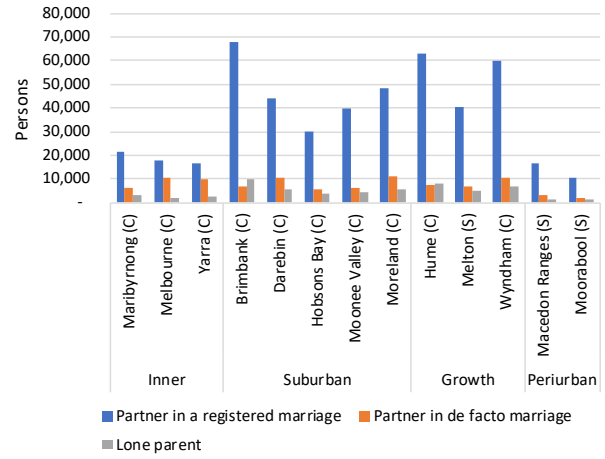


Figure 3: Persons in marriage, or lone parent by LGA (ABS 2011)

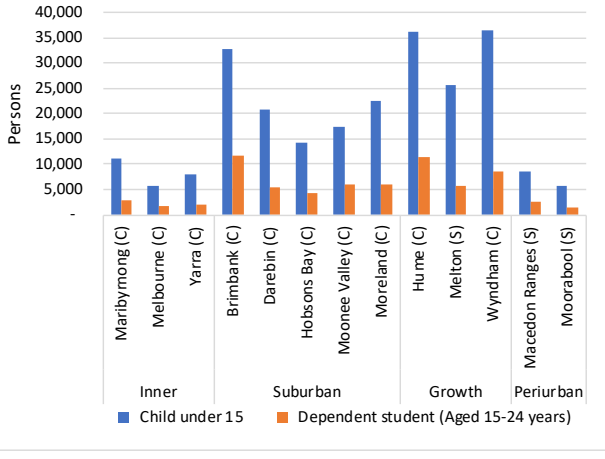


Figure 4: Persons child under age 15 or dependent student age 15-24 years (ABS 2011)

TARGET POPULATIONS

Overall, the NWMPHN area has a younger age profile than the overall Victorian community (see Figure 5, below). Within the overall population of children, there are particular ages and developmental stages of importance for planning the delivery of health care services. These include:

- Birth to 1 year.
- School commencement.
- Adolescence.
- Adult transition.

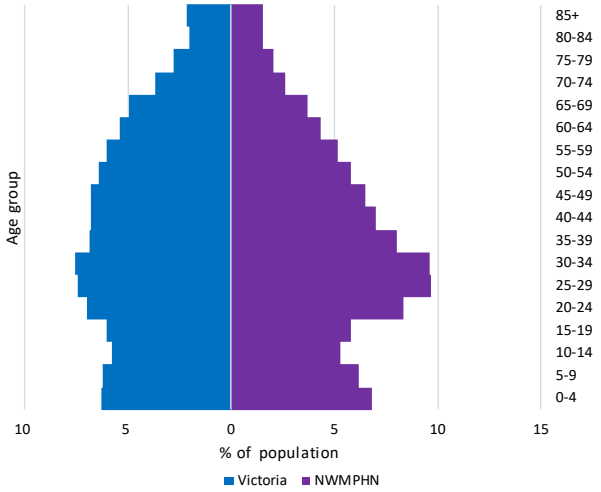


Figure 5: Population pyramid of the 2016 NWMPHN and Victorian population (ABS Census 2016)

See Figure 9 to Figure 12 for the current and forecast age breakdown by LGA.

This data illustrates the variation in age profile across the region with some areas having an age distribution similar to the overall Victorian community and others having substantially different compositions. In particular:

- The LGAs of Melbourne, Maribyrnong, Yarra and Moreland have very high proportions of people in the 20-34 year cohort, reflecting the proximity to tertiary education opportunities and inner Melbourne employment
- Melton and Wyndham have high proportions of the population aged 0-4 and 30-39, consistent with the high numbers of births from those areas
- Macedon Ranges and Moorabool have a higher proportion of older people with 17 and 25 per cent respectively aged over 65 years which may be reflective of their status as peri-urban/rural areas.

DETERMINANTS OF HEALTH

The achievement of good health outcomes is dependent on several factors including behavioural determinants, that can have a beneficial or detrimental effect on health. Table 1 (below) outlines the achievement of some measures LGA and indicates a significant variation across the region with many areas having high rates when compared to Victorian and Australian levels:

- High levels of overweight and obesity, in particular within Brimbank, and the growth area LGAs.
- All areas, excluding Melbourne and Yarra, having low rates of adequate fruit intake, with the worst performing in the growth area LGAs.
- All areas are below the national average for breastfeeding at 3 months and eight of the 13 areas are below the national average at 6 months.
- The prevalence of smoking during pregnancy in the Moorabool community is almost double the national rate and significantly higher than other areas in the NWMPHN area.

Table 1: Selected determinants of health

Region	LGA Name	Children aged 2-17 years (modelled estimates) overweight (but not obese) 2014–15 SR	Children aged 2-17 years (modelled estimates) obese 2014–15 SR	Estimated number of people aged 4-17 years with adequate fruit intake 2014–15 SR	% smoking during pregnancy 2012-14	% Fully breastfed babies at 3 mth (modelled estimates) 2014–15	% Fully breastfed babies at 6 mth 2014–15
Inner city	Maribyrnong (C)	125.9	110.0	92.6	8.4	63.0	20.7
	Melbourne (C)	110.0	101.5	103.8	7.3	61.3	28.8
	Yarra (C)	122.3	79.7	100.8	7.7	61.3	23.7
Suburban	Brimbank (C)	133.4	132.7	91.7	10.5	62.1	24.9
	Darebin (C)	128.9	100.7	94.2	6.4	60.4	21.8
	Hobsons Bay (C)	120.3	97.5	93.5	8.7	62.7	23.1
	Moonee Valley (C)	115.4	96.6	99.4	9.6	64.7	22.9
	Moreland (C)	125.7	104.3	92.8	9.2	62.4	23.8
Growth area	Hume (C)	121.0	140.1	90.8	13.4	61.1	26.0
	Melton (C)	112.6	130.2	93.2	15.5	64.0	20.4
	Wyndham (C)	122.3	126.5	90.9	9.6	65.5	22.8
Peri-urban	Macedon Ranges (S)	110.4	85.4	99.2	12.0	60.8	22.1
	Moorabool (S)	110.0	105.3	99.0	23.7	64.3	23.3
Victoria		**118.1**	**101.4**	**97.3**	**15.0**	**63.4**	**23.0**
Australia		**100.0**	**100.0**	**100.0**	**12.3**	**67.9**	**24.7**

Source: PHIDU 2017 Highlights on a red (poorer performance) to green (better performance) scale. SR=standardised ratio. Note: The standardised ratio is a measure of the overall experience of a comparison population (LGA) in terms of the standard population (Australia) by calculating the ratio of observed prevalence to expected prevalence in the comparison population.

IMMUNISATION

The Australian immunisation program is aimed at achieving a target immunisation rate of 95 per cent, which would allow for herd immunity for even the most infectious diseases such as measles.

This target provides sufficient immunity to prevent transmission of other vaccine preventable diseases and supports Australia's contribution to achieving measles elimination in the Western Pacific Region.

A figure of 92 per cent has been achieved or exceeded in most areas of NWMPHN – the area with the lowest rate is the LGA of Melbourne and some locations in the inner north (see Table 2 below).

There are likely to be several reasons for this small number of children not being fully immunized, including varied knowledge of the importance of the program through language and cultural barriers, and difficultly in access to general practice and other immunisation providers.

Table 2: Proportion of enrolled children that are fully immunised by age group and SA3 area (2015/16)

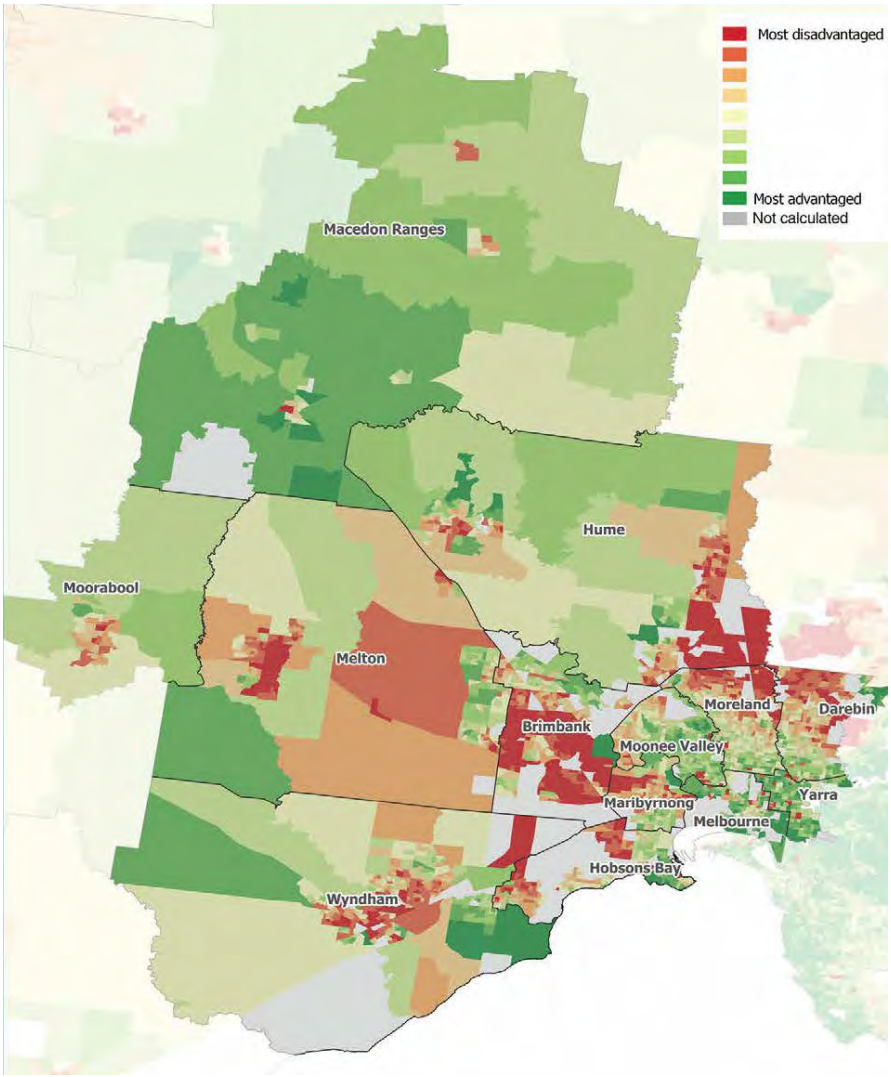
SA4	SA3	1 year	2 year	5 year
Melbourne - Inner	Brunswick - Coburg	92.9	92.1	93.3
	Darebin - South	95.1	91.3	93.6
	Essendon	93.5	89.9	93.3
	Melbourne City	90.2	85.6	86.9
	Yarra	92.9	90.2	91.7
Melbourne - North East	Darebin - North	92.8	89.5	90.8
Melbourne - North West	Keilor	93.8	89.2	95.6
	Macedon Ranges	92.2	90.4	93.4
	Moreland - North	90.6	91.3	92.5
	Sunbury	95.7	92.8	95.2
	Tullamarine - B/meadows	91.7	90.3	93.3
Melbourne - West	Brimbank	91.7	89.5	93.2
	Hobsons Bay	93.8	93.4	94.6
	Maribyrnong	91.8	90.7	92.4
	Melton – Bacchus Marsh	92.9	91.3	95.4
	Wyndham	92.9	90.2	93.1

Source: Medicare Australia, AIR Highlights on a red (poorer performance) to green (better performance) scale

The Index of Relative Socioeconomic Disadvantage is a standardized approach developed by the Australian Bureau of Statistics (ABS) for the measurement of socio-economic disadvantage. Figure 6 illustrates the variation across the region with some highly advantaged areas and some very disadvantaged areas.

Of interest for child and family health is the highly disadvantaged areas within the high population growth areas of Wyndham, Melton and Hume. These data will be updated in early 2018 with data from the 2016 census. This is expected to show some changes, particularly in the inner suburban locations due to the extensive residential growth in these areas since 2011.

Figure 6: Deciles of Index of Relative Socioeconomic Disadvantage (IRSD) 2011 by SA1



Source: ABS Census 2011

EDUCATION AND WELFARE

Participation in and achievement of educational outcomes has been strongly linked to opportunities for employment, development of good social networks, and ultimately better physical and mental health.

Given the geographic and economic variation across the NWMPHN region, there is a similarly wide variation in both educational achievement and rates of families and young people receiving welfare benefits. Lower rates of educational achievement and higher rates of welfare are generally seen in the growth areas (Table 3 and 4, below). The low rates of school leaver participation in the Melbourne LGA requires investigation.

Table 3: Selected educational achievement indicators by LGA

Region	LGA Name	% school leaver participation in higher education 2016	% Learning or Earning at ages 15 to 19 2011	People who left school at Year 10 or below, or did not go to school 2011 Standardised rate
Inner city	Maribyrnong (C)	52.9	82.5	73.4 **
	Melbourne (C)	13.1	85.6	30.6 **
	Yarra (C)	45.0	82.6	48.7 **
Suburban	Brimbank (C)	49.8	82.5	97.7 **
	Darebin (C)	48.8	84.6	79.8 **
	Hobsons Bay (C)	48.1	82.5	87.3 **
	Moonee Valley (C)	59.0	88.4	73.7 **
	Moreland (C)	47.4	82.5	80.5 **
Growth area	Hume (C)	43.9	80.4	106.8 **
	Melton (C)	40.7	79.7	101.0
	Wyndham (C)	41.7	81.1	93.9 **
Peri-urban	Macedon Ranges (S)	33.0	86.6	84.1 **
	Moorabool (S)	25.8	82.5	105.8 **
Victoria		39.3	83.8	85.7 **
Australia		33.6	80.1	**100.0**

*Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale. *statistically significant at the 95% confidence level, **statistically significant at the 99% confidence level*

Table 4: Selected social welfare indicators by LGA

Region	LGA Name	% Young people aged 16 to 24 receiving an unemployment benefit June 2014	% low income, welfare-dependent families (with children) June 2014)	% children in low income, welfare-dependent families June 2014
Inner city	Maribyrnong (C)	3.8**	10.6**	23.2**
	Melbourne (C)	0.6**	6.8**	28.3**
	Yarra (C)	2.3**	9.2**	26.6**
Suburban	Brimbank (C)	4.1**	14.9**	34.4**
	Darebin (C)	2.8**	8.7**	20.6**
	Hobsons Bay (C)	3.6**	8.7**	20.8**
	Moonee Valley (C)	2.1**	5.5**	13.1**
	Moreland (C)	3.0**	8.3**	20.8**
Growth area	Hume (C)	4.6**	17.4**	36.1**
	Melton (C)	5.0	16.0	28.5
	Wyndham (C)	4.5**	14.3**	26.0**
Peri-urban	Macedon Ranges (S)	2.8**	6.7**	14.7**
	Moorabool (S)	5.2**	10.0**	21.4**
Victoria		**3.4****	**9.8****	**22.6****
Australia		**4.0**	**10.3**	**23.3**

*Source: PHIDU 2017. Highlights on a red (poorer performance) to green (better performance) scale. *statistically significant at the 95% confidence level, **statistically significant at the 99% confidence level*

PREVALANCE OF ILL HEALTH

The Australian Early Development Census (AEDC) is a nationwide collection of early childhood development data at the time children commence their first year of full-time school. The AEDC collects data relating to five key areas of early childhood development that have been shown to predict later health, wellbeing and academic success.

These are referred to as 'domains', and include:

- Physical health and well being.
- Social competence.
- Emotional maturity.
- Language and cognitive skills.
- Communication skills and general knowledge.

Figure 7 (below) provides an overview of the proportion of children in the LGAs in our region that are identified as being developmentally vulnerable in two or more of the domains. Several LGAs report levels higher than the overall Victorian and Australian levels.

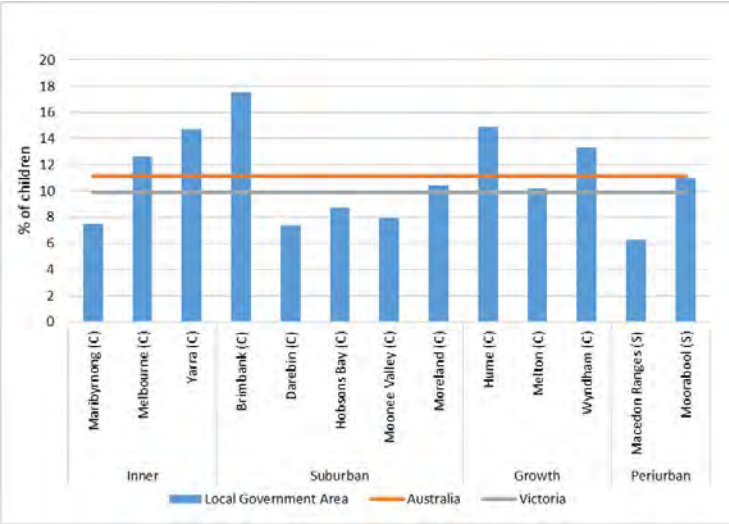


Figure 7: Proportion of children developmentally vulnerable in two or more domains – 2015 (AEDC)

CHILD SAFETY

Maintaining child safety and preventing and effectively intervening in cases of family violence is of growing importance to the Victorian community. Data on the overall levels of reported family violence incidents has illustrated an increasing level of reports in recent years.[3] This is largely considered as a response to a reduction in the stigma associated with reporting and the increased availability of services to support families.

Table 11 (p.18) provides an overview of the overall incident rates by municipality and illustrates a higher per capita rate in the growth and peri-urban areas.

Table 12 (p.18) shows reported prevalence of childhood bullying and child protection cases. As the child protection data is not recent, this should be interpreted with caution as the prevalence may have changed since 2010. Notwithstanding these limitations, there appears to be higher per capita rates of child protection issues in the inner and suburban areas, and higher levels of reported bullying in the growth and peri-urban areas.

[3] *Crime Statistics Agency, 2017*

SERVICE RESPONSE

USE OF SERVICES

The assessment of the level of service use can be used as a measure of both the adequacy of the availability of services and the impact of the condition on a population. The data below provides initial analysis on the level of service availability in hospitals and general practice.

VARIATION IN PRACTICE

The Australian Commission on Safety and Quality in Health Care (ACSQHC) has developed the Australian Atlas of Healthcare Variation. This report is aimed at identifying variation in utilisation of services in a range of medical and surgical services, as well as pharmaceutical prescribing.

Some of this observed variation will be warranted and associated with need-related factors such as underlying differences in the health of specific populations, or personal preferences.

However, the weight of evidence suggests that much of the variation documented in the atlas is likely to be unwarranted and may reflect differences in clinicians' practices, in the organisation of health care, and in people's access to services. It may also reflect poor quality care that is not in accordance with evidence based practice.

While the atlas highlights variation in a range of different procedures and treatments, it does not provide information about what the ideal rates for these interventions should be. The average rates displayed in the atlas are not necessarily the ideal.

There was some limited focus on surgical interventions in children, specifically tonsillectomy and myringotomy. With regard to tonsillectomy, there was no pattern in the admission rates and socioeconomic status. Rates were highest in inner regional areas and lowest in remote areas. Potential reasons for the variation include differences in:

- health insurance status and the accessibility of private hospitals, where most tonsillectomies are undertaken
- the availability of ENT surgeons, which varies across states and territories and is lower in remote areas
- public hospital elective surgery waiting times for tonsillectomy
- the decision-making criteria of individuals and specialists in assessing the need for tonsillectomy.

Across Australia, there was a correlation between higher rates of myringotomies and higher socio-economic status. This was seen in metropolitan, inner regional and remote areas, but was reversed in outer regional areas, which also had lower rates of surgery than other remote categories.

Table 5: Number admissions to hospital per 100,000 people aged 17 years and under, age standardised, by SA3, 2012–13

		Myringotomy		Tonsillectomy	
SA4	SA3	No.	Decile	No.	Decile
Melbourne - Inner	Brunswick - Coburg	371	10	556	8
	Darebin - South	472	8	420	10
	Essendon	372	9	408	10
	Melbourne City	245	10	374	10
	Yarra	414	9	351	10
Melbourne - North East	Darebin - North	313	10	518	9
Melbourne - North West	Keilor	503	8	494	9
	Macedon Ranges	780	3	786	4
	Moreland - North	370	10	582	8
	Sunbury	910	2	801	4
	Tulla - Broadmeadows	287	10	607	7
Melbourne - West	Brimbank	275	10	438	10
	Hobsons Bay	515	7	521	9
	Maribyrnong	324	10	345	10
	Melton - B Marsh	613	5	742	5
	Wyndham	408	9	611	7

Source: ACSQHC 2015 Highlights on a red (lower) to green (higher) scale

Data is provided in deciles of the overall Australian rate. 1= the lowest 10% to 10 =highest 10%

EMERGENCY DEPARTMENT PRESENTATIONS

Children are high users of emergency department services, with more than 26 per cent of the total volumes in the cohorts aged 0-14 years (Figure 8). Children aged 0-4 make up more than half of this use, and are clearly the highest users of emergency departments across all age groups.

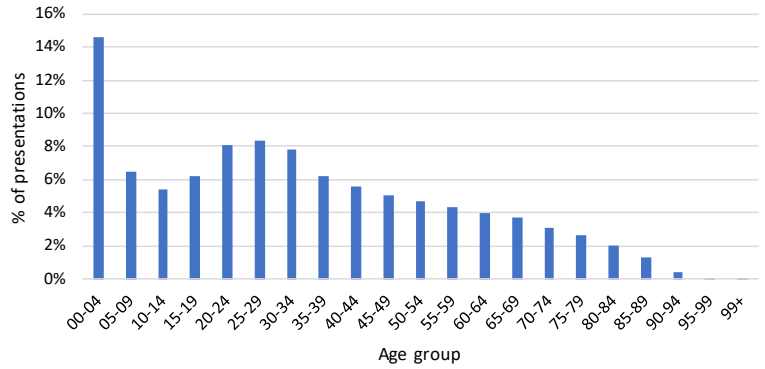


Figure 8: Proportion of Victorian emergency department presentations by age group, 2015-16

Across Victoria, there are varied per capita rates of presentations for children for the total presentation volume and Primary Care Type presentations.[4] Table 6 (below) illustrates the variation in rates across the local government areas in the NWMPHN. This illustrates a possible trend with inner Melbourne locations having higher rates than more distant locations, likely in response to the greater access to emergency departments as well as availability of alternative modes of care.

Table 6: Victorian emergency department total and Primary Care Type presentations people aged 00-14 years by LGA of residence, 2015-16

Region	LGA Name	Presentation rate per 1000 aged 00-14	PCT presentation rate per 1000 aged 00-14
Inner city	Maribyrnong (C)	366	224
	Melbourne (C)	472	304
	Yarra (C)	318	191
Suburban	Brimbank (C)	328	183
	Darebin (C)	290	148
	Hobsons Bay (C)	470	328
	Moonee Valley (C)	297	179
	Moreland (C)	338	196
Growth area	Hume (C)	306	150
	Melton (C)	251	129
	Wyndham (C)	318	175
Peri-urban	Macedon Ranges (S)	145	59
	Moorabool (S)	190	90
Victoria		**297**	**155**

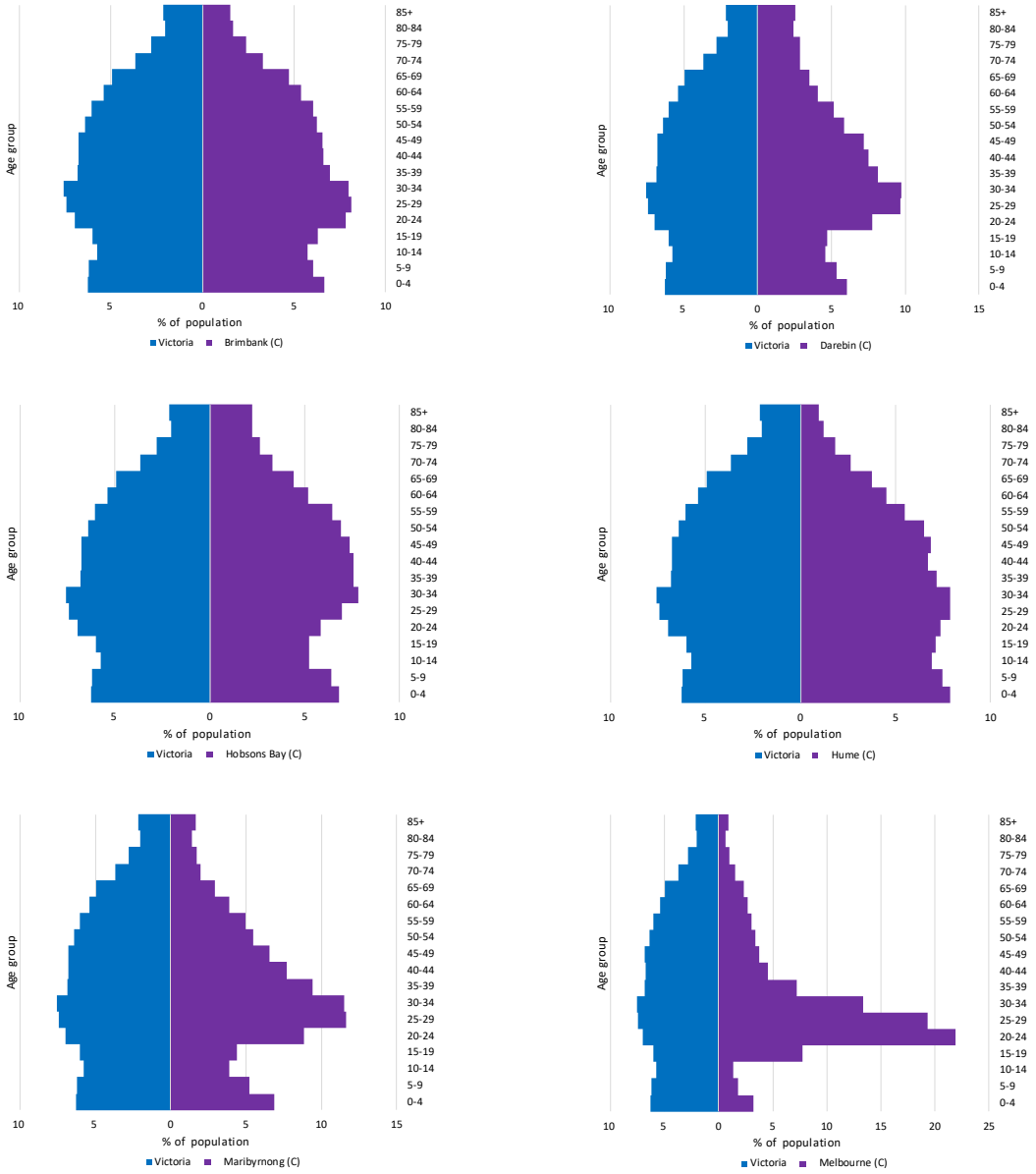
Source: VEMD Highlights on a red (lower) to green (higher) scale

[4] Primary Care Type presentations have been defined as those with all of the following features: ATS 4 or 5, referred by self, arrived by self, discharged home or to residential facility.

ADDITIONAL DATA TABLES

POPULATION PYRAMIDS – 2016 POPULATION BY AGE (ABS CENSUS 2016)

Figure 9: Population pyramids for NWMPHN LGA's compared to Victorian population (ABS 2016)



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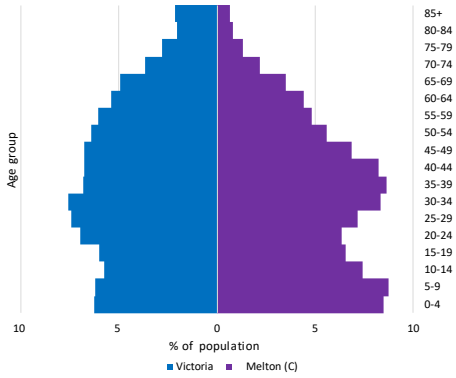
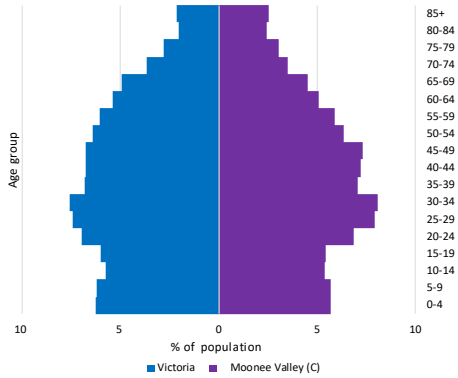
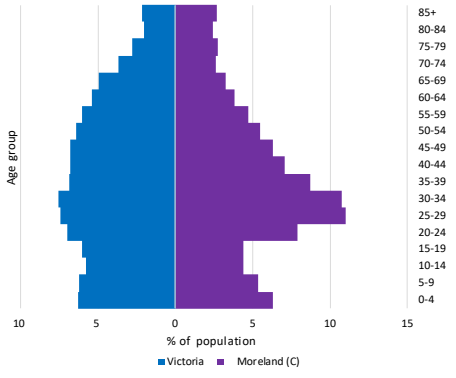
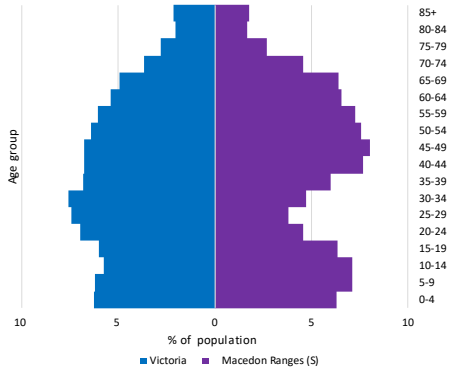
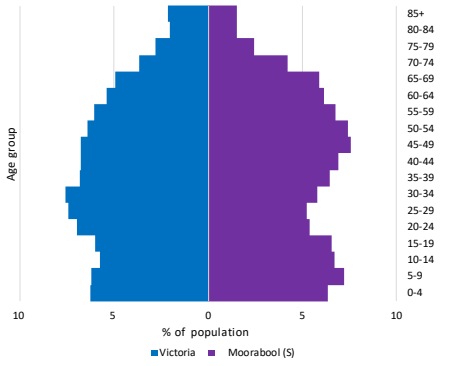
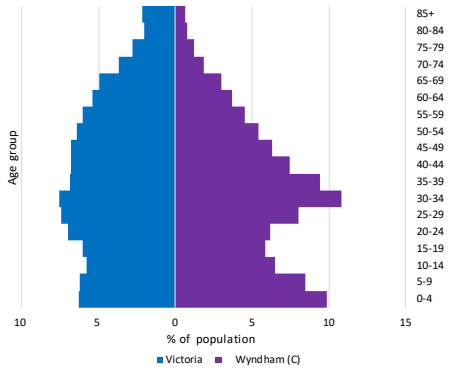


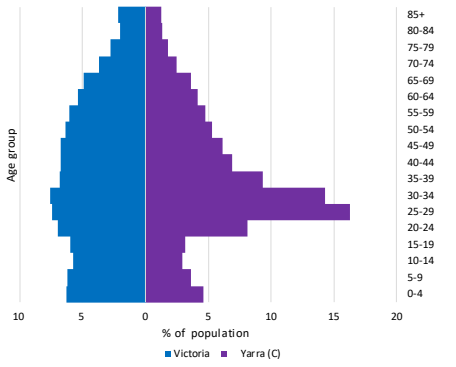












Source: ABS Census 2016

PROJECTED POPULATION GROWTH

Table 7: People aged 0-17 years, 2016 ERP and 2031 projection by LGA and region

Region	LGA	2016	2031	Growth 2016-2031	% growth 2016-2031
Inner	Maribyrnong (C)	15,154	27,749	12,595	83%
	Melbourne (C)	10,884	31,830	20,946	192%
	Yarra (C)	11,079	20,110	9,031	82%
Inner Total		37,117	79,690	42,573	115%
Suburban	Brimbank (C)	43,019	47,953	4,934	11%
	Darebin (C)	27,142	37,212	10,070	37%
	Hobsons Bay (C)	19,111	23,401	4,290	22%
	Moonee Valley (C)	23,302	30,379	7,077	30%
	Moreland (C)	30,031	43,563	13,532	45%
Suburban Total		142,605	182,509	39,904	28%
Growth	Hume (C)	52,228	76,690	24,462	47%
	Melton (C)	38,775	69,814	31,039	80%
	Wyndham (C)	61,590	100,507	38,917	63%
Growth Total		152,593	247,011	94,418	62%
Periurban	Macedon Ranges (S)	11,292	12,043	751	7%
	Moorabool (S)	7,737	10,363	2,626	34%
Periurban Total		19,029	22,406	3,377	18%
Grand Total		**351,344**	**531,615**	**180,271**	**51%**

Source: ABS ERP for 2016 population, VIF2016 for 2031

Note: 0-17 population was estimated using the sum of 0-4, 5-9, 10-14 and 60% of the 15-19 age groups.

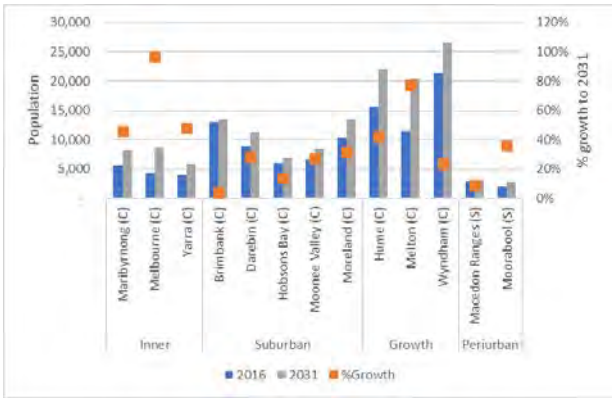


Figure 10 Population aged 0-4 years - 2016 to 2031 by LGA

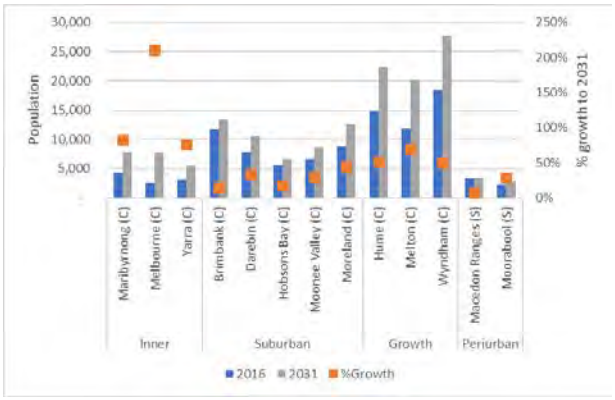


Figure 11 Population aged 5-9 years - 2016 to 2031 by LGA

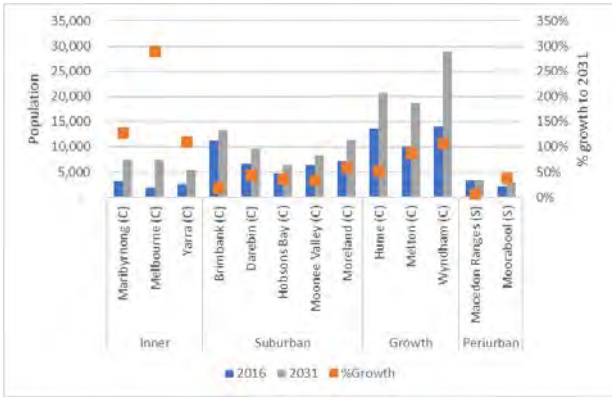


Figure 12 Population aged 10-14 years - 2016 to 2031 by LGA

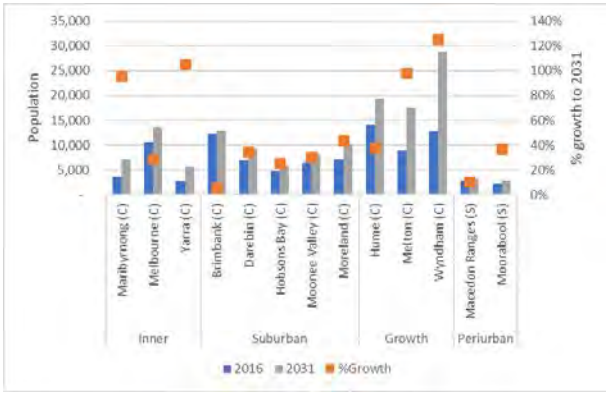


Figure 13 Population aged 15-19 years - 2016 to 2031 by LGA

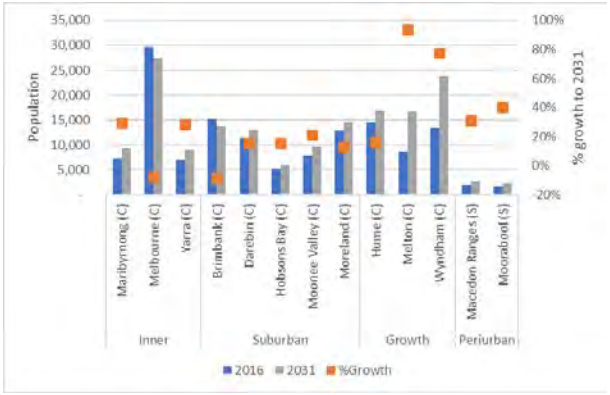


Figure 14: Population aged 20-24 years - 2016 to 2031 by LGA

Source: VIF2016

Table 8: Number of births by LGA in NWMPHN 2010-2015

Region	LGA Name	2010	2011	2012	2013	2014	2015	Growth 2010-15	% growth 2010-15	% of NWMPHN
Inner city	Maribyrnong (C)	1,363	1,257	1,431	1,366	1,342	1,288	- 75	-5.5%	5.6%
	Melbourne (C)	860	968	1,015	1,001	1,111	1,209	349	40.6%	5.2%
	Yarra (C)	1,088	1,030	1,150	1,055	1,077	1,055	- 33	-3.0%	4.5%
Suburban	Brimbank (C)	2,706	2,802	3,033	2,815	2,800	2,810	104	3.8%	12.1%
	Darebin (C)	2,162	2,058	2,189	2,021	2,049	1,932	- 230	-10.6%	8.3%
	Hobsons Bay (C)	1,354	1,327	1,330	1,265	1,250	1,261	- 93	-6.9%	5.4%
	Moonee Valley (C)	1,298	1,366	1,419	1,390	1,310	1,307	9	0.7%	5.6%
	Moreland (C)	2,222	2,311	2,391	2,279	2,353	2,349	127	5.7%	10.1%
Growth area	Hume (C)	2,536	2,692	3,053	2,910	3,070	2,987	451	17.8%	12.9%
	Melton (c)	2,017	2,035	2,246	2,076	2,098	2,137	120	5.9%	9.2%
	Wyndham (C)	2,894	3,173	3,816	3,886	3,975	4,058	1,164	40.2%	17.5%
Peri-urban	Macedon Ranges (S)	441	480	462	446	501	452	11	2.5%	1.9%
	Moorabool (S)	330	311	369	359	389	342	12	3.6%	1.5%
Total NWMPHN		21,271	21,810	23,904	22,869	23,325	23,187	1,916	9.0%	100.0%
Victoria		70,572	71,444	77,405	73,969	74,224	73,568	2,996	4.2%	
Australia		**298,147**	**296,464**	**304,082**	**302,493**	**294,112**	**299,798**	**1,651**	**0.6%**	

Source: ABS 3301.0 Births, Australia 2015 Released at 11.30am (Canberra time) 08 November 2016

Table 9: Teenage fertility rate 2007-2012 - Rate of live births to women aged under 19 years in the calendar year (per 1,000 women in this age group)

Region	LGA Name	2007	2008	2009	2010	2011	2012
Inner city	Maribyrnong (C)	14.7	11.8	7.7	10.4	7.5	4.7
	Melbourne (C)	1.4	0.0	3.2	1.8	2.3	2.7
	Yarra (C)	12.5	9.5	5.1	6.8	9.6	0.0
Suburban	Brimbank (C)	9.6	8.4	12.7	9.3	10.3	10.7
	Darebin (C)	9.0	8.2	5.9	11.4	9.1	9.0
	Hobsons Bay (C)	10.3	10.9	13.8	11.1	9.9	9.7
	Moonee Valley (C)	3.2	5.1	1.9	4.2	3.5	1.6
	Moreland (C)	12.2	10.6	8.3	8.2	8.4	7.6
Growth area	Hume (C)	15.1	12.3	10.6	11.6	10.3	9.9
	Melton (S)	12.4	13.2	15.3	12.9	14.8	12.3
	Wyndham (C)	15.8	13.8	11.7	13.1	10.7	15.7
Peri-urban	Macedon Ranges (S)	8.8	8.1	3.3	4.6	5.9	5.2
	Moorabool (S)	14.1	21.5	9.0	5.0	9.7	11.5
Victoria		**10.7**	**10.9**	**10.4**	**10.4**	**10.6**	**10.4**

Source: VCAMS, Highlights on a red (poorer performance) to green (better performance) scale

Table 10: Teenage fertility 2007-2012 – Absolute number of live births to women aged under 19 years in the calendar year

Region	LGA Name	2007	2008	2009	2010	2011	2012
Inner city	Maribyrnong (C)	25	20	13	17	13	8
	Melbourne (C)	5	-	11	6	8	9
	Yarra (C)	17	13	7	9	13	-
Suburban	Brimbank (C)	60	54	82	60	65	67
	Darebin (C)	32	29	21	39	31	30
	Hobsons Bay (C)	26	28	35	27	24	23
	Moonee Valley (C)	10	16	6	13	11	5
	Moreland (C)	45	39	30	29	30	27
Growth area	Hume (C)	96	81	71	78	68	67
	Melton (S)	37	42	52	45	54	47
	Wyndham (C)	70	65	58	67	58	87
Peri-urban	Macedon Ranges (S)	13	12	5	7	9	8
	Moorabool (S)	13	21	9	5	10	12
Victoria	**Victoria**	**1,808**	**1,885**	**1,807**	**1,811**	**1,835**	**1,798**

Source: VCAMS, Highlights on a red (poorer performance) to green (better performance) scale

Table 11: Family incident rate per 100,000 population by region and local government area - April 2012 to March 2017

Area	LGA	Apr 2013 - Mar 2014	Apr 2014 - Mar 2015	Apr 2015 - Mar 2016	Apr 2016 - Mar 2017
Inner city	Maribyrnong (C)	1,009	1,005	1,062	923
	Melbourne (C)	943	953	1,052	1,005
	Yarra (C)	846	853	1,004	1,063
Suburban	Brimbank (C)	1,062	1,167	1,335	1,162
	Darebin (C)	1,110	1,067	1,102	1,016
	Hobsons Bay (C)	1,023	1,137	1,189	1,112
	Moonee Valley (C)	842	818	880	857
	Moreland (C)	887	962	1,071	1,026
Growth area	Hume (C)	1,525	1,543	1,505	1,498
	Melton (C)	1,234	1,425	1,488	1,494
	Wyndham (C)	1,125	1,116	1,324	1,251
Peri-urban	Macedon Ranges (S)	1,007	818	865	931
	Moorabool (S)	1,038	1,132	1,453	1,421
Victoria		**1,028**	**1,101**	**1,168**	**1,261**

Source: Crime Statistics Agency, 2017 Highlights on a red (poorer performance) to green (better performance) scale

Table 12: Selected child safety indicators

Region	LGA Name	Proportion of children who are bullied (2015)	Rate of substantiated child abuse per 1000 aged 0-17 (2010-11)	Rate of children on child protection orders per 1000 aged 0-17 (2010)
Inner city	Maribyrnong (C)	24.9	5.9	7.2
	Melbourne (C)	27.2	5.8	19.4
	Yarra (C)	24.5	7.7	9.3
Suburban	Brimbank (C)	30.4	6.7	5.3
	Darebin (C)	29.3	6.8	6.8
	Hobsons Bay (C)	27.8	5.1	4.2
	Moonee Valley (C)	25.9	2.5	3.6
	Moreland (C)	31.6	4.6	3.8
Growth area	Hume (C)	36.4	6.0	3.8
	Melton (C)	35.7	5.0	4.5
	Wyndham (C)	36.1	5.7	2.6
Peri-urban	Macedon Ranges (S)	32.0	2.7	2.9
	Moorabool (S)	40.4	6.5	4.3
Victoria		**33.0**	**6.7**	**5.4**

Source: VCAMS Highlights on a red (poorer performance) to green (better performance) scale

Table 13: PBS prescriptions dispensed, age standardised, by SA3, 2013–14 – decile

SA4	SA3	Asthma medicines people aged 3 to 19 years	Asthma and related respiratory admissions to hospital people aged 3 to 19 years#
Melbourne - Inner	Brunswick - Coburg	9	1
	Darebin - South	8	6
	Essendon	9	5
	Melbourne City	8	1
	Yarra	5	5
Melbourne - NE	Darebin - North	7	7
Melbourne - NW	Keilor	7	1
	Macedon Ranges	5	7
	Moreland - North	6	1
	Sunbury	2	7
	Tulla - Bmeadows	6	3
Melbourne - West	Brimbank	4	1
	Hobsons Bay	8	5
	Maribyrnong	6	1
	Melton - B Marsh	5	4
	Wyndham	7	6

Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 10/04/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427. *Highlights on a red (lower) to green (higher) scale*

 # Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Sets from 2010–11 to 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427

Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Set 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427

** Sources: National Health Performance Authority analysis of Pharmaceutical Benefits Scheme (PBS) statistics 2013–14 (data supplied 19/03/2015) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013. Full data specifications at http://meteor.aihw.gov.au/content/index.phtml/itemId/623427*

MENTAL HEALTH AREA PROFILE

SUMMARY

- Mental health disorders are the leading contributor (49%) to the burden of disease and injury among young Australians aged 15–24. One in four young people have a mental disorder
- There is rapid observed and expected growth in mental health disorders in NMWPHN catchment, particularly in the young adult and adolescent age brackets where 75% of mental health conditions initially manifest. This will drive an ongoing need to focus on the provision of effective primary mental health care.
- English language literacy is one of the key factors that contribute to an individual's capacity to seek treatment and acquire sufficient social supports. Approximately two out of five people living in NWMPHN were born overseas (39.5%), with a higher than average number of people with limited or no English proficiency being reported in a number of Local Government Areas (LGAs). There is also a high proportion of humanitarian arrivals, who may have unique mental health needs.
- The prevalence estimates of mental health conditions in the region are difficult to accurately assess. Some contributing factors include:
    - The expected higher prevalence of depression and anxiety in lower median income, lower educated and higher unemployment regions is not reflected in actual prevalence estimates in many parts of the region.
    - For example, Brimbank and Hume are within the highest quintile for unemployment, proportion of people with low English proficiency, proportion of people not completing Year 9 and the lowest decile for median personal income yet are below the Greater Melbourne median for prevalence of depression and anxiety.
    - Help seeking behavior is much lower in lower socio-economic regions, such as Brimbank, Moorabool and Melton.
- Access and usage of mental health services is heterogenous across the NMWPHN area, with low SES regions:
    - More likely to access GP and other allied health professionals than psychiatrists and clinical psychologists
    - Accessing less services per patient compared to higher SES areas.
    - Having less out of pocket fees
- With expected population growth in the 10 to 24 year old age bracket more than double the Victorian average, Wyndham and Melton have grown by almost four times the Victorian average between 2011 and 2016.
- This growth means it is likely that there is an enormous amount of unmet demand for mental health services within the NWMPHN region. There are clear needs to promote and support people to seek help, and to continue to develop strategies to address affordability, cultural and access issues.

ANALYSIS NOTES

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

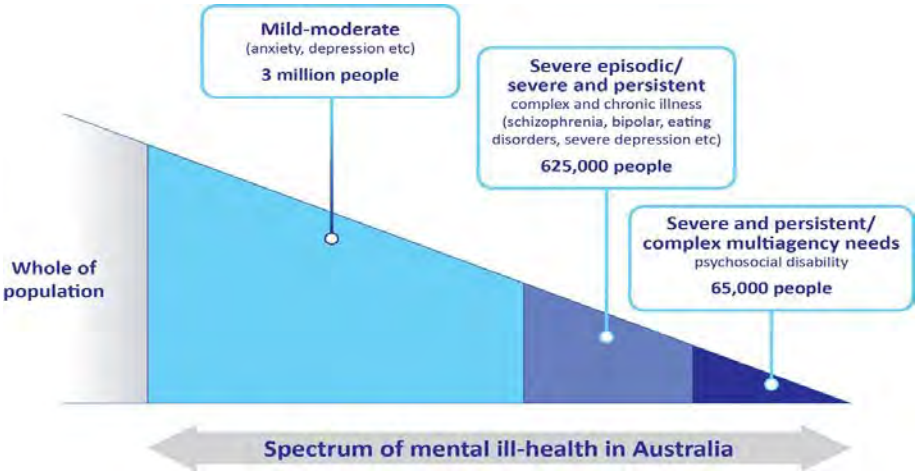
ABOUT MENTAL HEALTH

Mental health is a complex interaction between biological, psychological and social factors and is not necessarily just the absence of illness. The World Health Organisation defines mental health as a state of wellbeing, where an individual realises their potential and can manage every day stress and can work productively and contribute to the community.[1]

Mental health can be viewed on a spectrum, where on one side people are functioning well and feeling good, and on the other side are experiencing severe mental illness; with people at risk of mental health issues or experiencing mild or moderate mental illness in between. The effect a mental health condition can have upon a person varies and can be episodic to life-long and affect a person's ability to function in everyday situations as well as attracting stigma and discrimination.

Figure 1 (below) illustrates the conceptual burden of mental illness in Australia, with a large prevalence in mild to moderate, and lower prevalence om severe mental illness.

Figure 1: Spectrum of mental illness in Australia



Source: From Contributing lives, thriving communities Report of the National Review of Mental Health Programmes and Services, National Mental Health Commission Nov 2014

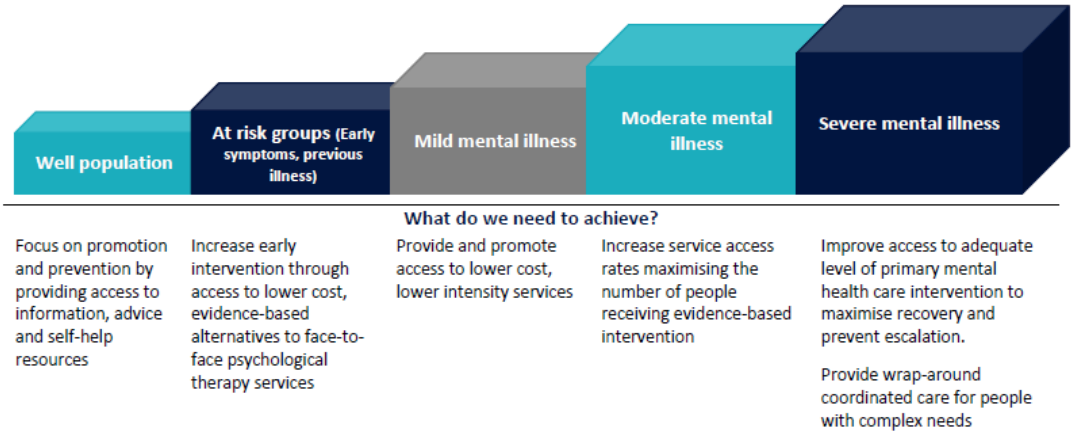
Many people with a mental illness can be successfully treated with a range of interventions and often recover well if not fully. However, it is estimated 2 out of 3 Australians with a mental health condition do not seek help, in particular young people and males.[2]

To better support the mental health needs of the community Primary Health Networks have been funded by the Commonwealth to facilitate implementation of stepped care models in mental health service delivery, and to commission services across the continuum of care as per population needs.

The stepped care model stratifies the spectrum of mental health conditions into 5 categories covering severity of mental illness, impact upon a person's lifestyle and interventional pathways.

[1] Word Health Organisation, 2014 http://www.who.int/features/factfiles/mental_health/en/
[2] Saxena, S., Thornicroft, G., Knapp, M. and Whiteford, H., 2007. Resources for mental health: scarcity, inequity, and inefficiency. The lancet, 370(9590), pp.878-889

Figure 2: Mental Health stepped care model



Source: From PHN Primary Mental Health and Suicide Prevention Implementation Guidance – Stepped Care, Department of Health

Primary health care services play a central role in identifying people showing signs of mental illness. Appropriate intervention at this crucial stage of development can have significant short and long-term benefits

From 2011 to 2016, the overall population in the NWMPHN region increased from 1.38 million to 1.61 million people, an increase of 17% or 234,000 people. Using the population level lifetime prevalence values of mental health conditions by stepped model severity this suggests that from 2011, approximately 93,000 additional people are present within the catchment that will be at risk or will develop a mental health condition.

The population projections from Victoria In Future 2016 (estimated residential population for 2021) indicate that this rate of population growth could continue with an additional 300,000 more residents expected in 2021 and a further 135,000 people could be at risk of or will develop mental health condition (Table 1, below).

Table 1: Estimated number of persons with mental health conditions by severity in NWMPHN catchment 2011, 2016, 2021.

Stepped Model Classification		Population Prevalence	2011 Population Estimate ('000s)	2016 Population Estimate ('000s)	2021 Projected Estimates ('000s)
At Risk		23.1%	318.6	372.8	445.6
Mild		9.0%	124.1	145.2	173.6
Moderate		4.6%	63.4	74.2	88.7
Severe					
	Overall	3.1%	42.8	50.0	59.8
	Episodic/Persistent	2.8%	38.8	45.3	54.0
	Persistent/Complex	0.3%	4.0	4.7	5.8
Total		39.8%	548.9	642.2	767.8

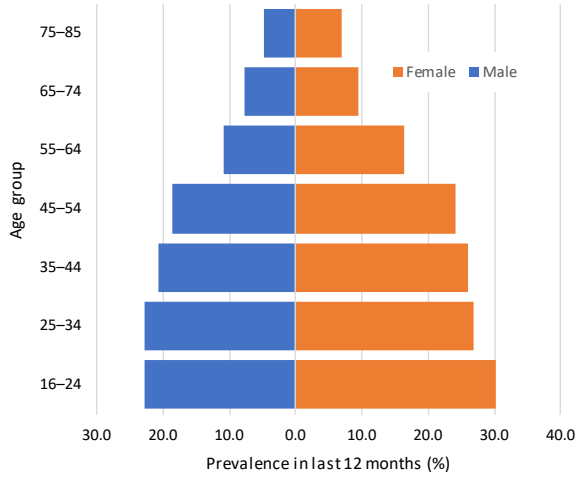
Source: NWMPHN analysis of ABS Census 2011, 2016, VIF2016.

Mental health and mental illnesses are determined by multiple and interacting social, psychological, and biological factors, just as they generally are in health and illness. Mental health may be impacted by individual or societal factors, including economic disadvantage, poor housing, lack of social support and the level of access to, and use of, health services.

A person's socio-economic circumstances (eg employment), may impact on their likelihood of developing a mental disorder. Studies have shown that people of lower socio-economic status have a higher prevalence of mental

disorders, particularly depression, and certain anxiety disorders. Mental illness may also impact on a person's employment, housing, and social supports.[3] Additionally, prevalence is varied by aged group with higher proportions of people experience a mental health issue in younger age groups (Figure 3, below).

Figure 3: Prevalence of any mental health disorder in the previous 12 months, by age group - Australia



Source: ABS (2008) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007

Given the variety of drivers for increased prevalence, some components of the NWMPHN population are likely to have higher than average levels due to the interaction with the social determinants of mental health. However, indicators measuring the prevalence may not reflect the true prevalence due to factors including inability to access services because of financial or cultural reasons, identifying need for help in oneself or others, and then seeking help when required.

A recent national report showed that among priority populations, Aboriginal and Torres Strait Islander populations were at higher risk of serious mental health issues (see the NWMPHN Aboriginal and Torres Strait Islander Population Area Profile in App. F.5 for details).

NWMPHN response

Through research and consultation with the community, NWMPHN has developed the mental health system of care (MHSOC), which incorporates key concepts guiding how NWMPHN will work with consumers, carers and service providers in the commissioning of primary mental health services.

The MHSOC encourages service providers to first look at the person presenting and then respond with a co-ordinated, integrated approach. It details the relationship between the person, their community, the services, a set of agreed principles, shared responsibility and a governance framework.

The model also identifies a number of responsibilities – governance, accountability and commissioning efficiency – that are critical in ensuring the MHSOC is effective and accountable. It recognises that the parties involved in delivering care to a person will need to share accountability for the person's health and wellbeing outcomes, regardless of who those parties are.

[3] ABS (2008) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007

TARGET POPULATIONS

Adolescents and Young Adults

Adolescence and young adulthood is a critical period of development and is characterised by significant neurological and behavioural changes, making this group more vulnerable to particular types of mental illness.[4]

Figure 4 (page 7) illustrates the higher overall prevalence of mental illness in younger age groups, showing the importance of targeting prevention and early intervention efforts at this cohort.

- 75 per cent of mental health disorders having their onset prior to the age of 25 years.
- 23 per cent of males and 30 per cent of females aged 16-24 reported a mental illness in the previous 12 months.
- Mental health disorders are the leading contributor (49%) to the burden of disease and injury among young Australians aged 15–24 and one in four young people have a mental disorder. [5] [6]
- Suicide was the leading cause of death among persons aged 25–44 (20% of deaths) and persons aged 15–24 (31% of deaths) in Australia. [7]

The NWMPHN catchment has seen significant population growth between 2011 and 2016 within the 10-24 years old age group, with more than half of all Victorian growth in this group taking place within the NWMPHN catchment. 7 out of 13 LGAs reported growth rates above the Victorian rate of 6.0%; Wyndham and Melton each displayed a growth rate nearly 4 times greater than Victorian rate (Table 2, below) and inner-city Melbourne nearly 9 times greater.

An estimate of future prevalence can be made using the Victoria in Future 2016 population projections[8]. Extrapolation of age specific rates to these data indicate that almost 30,000 more individuals in the 10-24 years age group could reside in the catchment by 2021.

Table 2: NWMPHN LGAs Population and growth of 10 to 24yr from 2011 to 2016, and estimated additional persons in 2021

LGA Name		Popn 2011	Popn 2016	Growth 2011-16	% Growth 2011-16	Est. Growth 2016-21
Victoria		**1,048,385**	**1,111,195**	**62,810**	**6.0%**	
NWMPHN		**276,209**	**313,766**	**37,557**	**13.6%**	
Inner City	Maribyrnong (C)	12,729	14,104	1,375	10.8%	2,482
	Melbourne (C)	27,601	42,225	14,624	53.0%	5,162
	Yarra (C)	10,951	12,307	1,356	12.4%	1,666
Suburban	Brimbank (C)	38,582	38,563	-19	-0.1%	-1,129
	Darebin (C)	23,326	25,005	1,679	7.2%	1,939
	Hobsons Bay (C)	14,852	14,452	-400	-2.7%	90
	Moonee Valley (C)	19,472	20,635	1,163	6.0%	1,067
	Moreland (C)	25,636	27,129	1,493	5.8%	1,485
Growth Area	Hume (C)	38,718	42,200	3,482	9.0%	1,399
	Melton (C)	22,537	27,548	5,011	22.2%	6,128

[4] Giedd JN, Keshavan M, Paus T. Why do many psychiatric disorders emerge during adolescence? Nature reviews Neuroscience. 2008;9(12):947-957. doi:10.1038/nrn2513.
[5] Institute Mission Australia and Black Dog. Youth Mental Health Report. Youth Survey 2012-1016. 2016.
[6] The mental health of Australians 2: report on the 2007 National Survey of Mental Health and Wellbeing. 2009.
[7] http://www.aihw.gov.au/deaths/leading-causes-of-death/
[8] Victoria in Future 2016, Department of Environment, Land, Water and Planning, Victorian Government

	LGA Name	Popn 2011	Popn 2016	Growth 2011-16	% Growth 2011-16	Est. Growth 2016-21
	Wyndham (C)	32,824	40,140	7,316	22.3%	8,859
Peri-Urban	Macedon Ranges (S)	8,093	8,305	212	2.6%	227
	Moorabool (S)	5,742	5,922	180	3.1%	426

Source: ABS Census 2011, 2016, Victoria In Future 2016 - Victorian DEWLP

Expected high growth areas, using Victorian in Future Small Areas (VIFSA) geography, are illustrated in Figure 4 below. Over a third of the estimated growth is expected to be in the VIFSA regions of Point Cook-Werribee South and Hoppers Crossing-Truganina within Wyndham LGA and Caroline Springs-Hillside within Melton LGA.

The 10-24 years old population of Keilor-Sydenham within Brimbank LGA, Broadmeadows within Hume LGA and Altona-Seabrook within Hobsons Bays LGA are forecast to have a decline of between 5 to 11 per cent by 2021, dropping by over 3,000 compared with 2016 levels.

Figure 4: Projected population growth of people aged 10-24 years 2016-2021 (VIF2016)

Culturally and Linguistically Diverse (CALD) Population

The NWMPHN community has a highly diverse CALD population comprising a significant settlement of refugees and asylum seekers and continued migration from all regions of the globe. Most CALD groups are present in NWMPHN, many in significantly higher proportions than the rest of Greater Melbourne.

CALD Australians may experience difficulty accessing mental health services due to language barriers, varied cultural understanding of mental health, cultural stigma and difficulty navigating the Australian health system. These needs can be addressed through culturally appropriate services to improve their quality of life.[9]

Additionally, humanitarian arrivals may have unique mental health needs as they have often experienced great adversity during their journey to resettle in the NWMPHN region, and are often recovering from the effects of torture, trauma, grief and anger.

Country of Birth

NWMPHN contains a greater proportion of individuals born overseas (39.5%) compared to both the Victorian (30.4%) and Greater Melbourne populations (36.2%).[10]

In seven out of 13 LGA's within NWMPHN catchment, there is a high proportion (decile 7 and above) of overseas born people. More than half the population within Melbourne and Moreland are born overseas (Table 3, p.10).

Figure 5 (p.11) illustrates the variation across the NWMPHN region by country of birth in each SA2 area. Brimbank and Melbourne SA2 regions are largely in the 5th Quintile (decile 9 & 10), and there are pockets within most LGAs that display very high proportion of people born overseas, including:

- Maribyrnong: Braybrook and Footscray
- Darebin: Kingsbury
- Hobsons Bay: Laverton
- Moreland: Fawkner
- Hume: Broadmeadows, Campbellfield-Coolaroo, Meadow Heights, Roxburgh Park-Somerton and Craigieburn West
- Melton: Burnside Heights
- Wyndham: Truganina, Point Cook-South, Point Cook-East, Tarneit

[9] https://nmhccf.org.au/sites/default/files/docs/nmhccf_-_advocacy_brief_-_cald_-_may_2014.pdf
[10] ABS Census 2016

Table 3: Proportion of LGA population with country of origin not Australia (ABS Census 2016) coloured by Greater Melbourne LGA decile

LGA Name		Total population	Proportion not Australian born	Highest Frequency Country of Origin
Victoria		**1,680,256**	**30.4%**	
Greater Melbourne (LGA Median)		**1,520,253**	**36.2% (32.5%)**	
NWMPHN		**601,409**	**39.5%**	
Inner City	Maribyrnong (C)	32,989	43.3%	**Vietnam**
	Melbourne (C)	75,797	63.0%	**China**
	Yarra (C)	25,136	32.1%	**United Kingdom**
Suburban	Brimbank (C)	93,001	51.6%	**Vietnam**
	Darebin (C)	48,845	36.0%	**Italy**
	Hobsons Bay (C)	27,099	32.5%	**United Kingdom**
	Moonee Valley (C)	32,265	29.6%	**Italy**
	Moreland (C)	55,227	36.4%	**Italy**
Growth Area	Hume (C)	70,535	38.3%	**Iraq**
	Melton (S)	40,613	32.1%	**India**
	Wyndham (C)	90,246	44.1%	**India**
Peri-Urban	Macedon Ranges (S)	5,735	12.9%	**United Kingdom**
	Moorabool (S)	3,921	13.6%	**United Kingdom**

Figure 5: Deciles of proportion of population not born in Australia, SA2, LGA 2016 (ABS Census 2016)

English Proficiency

English proficiency is related to a number of factors including country of birth, education level and ethnicity. Low levels of English proficiency in CALD populations places them at greater risk of mental health problem and reduces accessibility of services. People from CALD populations show higher rates of involuntary admissions, emergency department presentations and are exposed to quality and safety risks, often due to misdiagnosis from language barriers. [11]

Data from the Australian census in (Table 4 below and Figure 6, p.12) has identified the following key points:

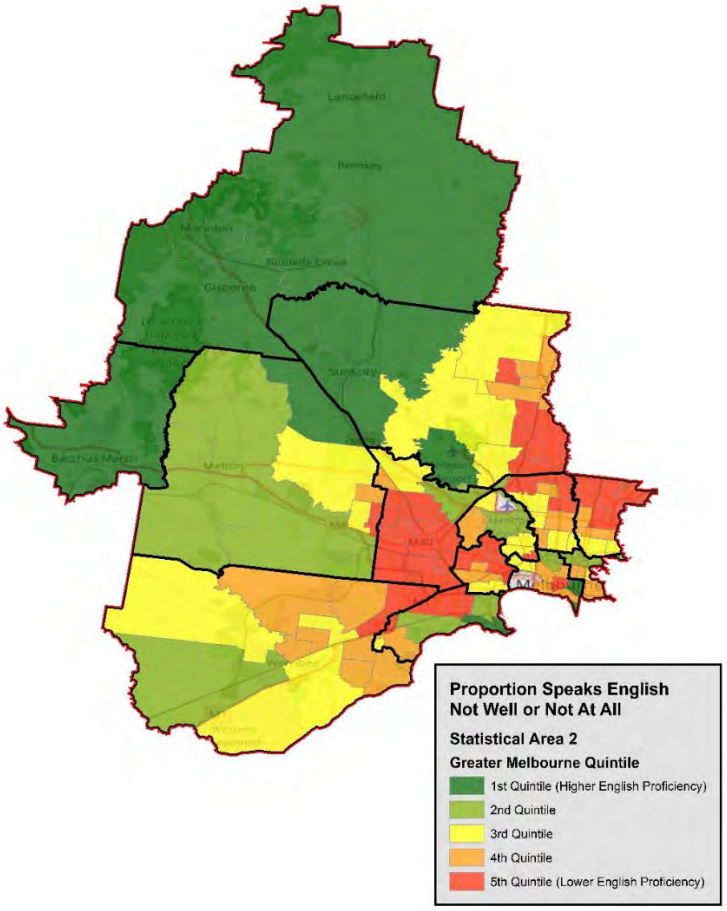
- Ten LGAs within the catchment have higher proportions of people with low English proficiency than both Victoria and Greater Melbourne (4.5% and 5.6% respectively).
- Brimbank (almost 1 in 7 people) and Maribyrnong (1 in 11 people) possess low levels of English proficiency that place them in the highest proportion decile in Greater Melbourne, while Hume also shows very high levels compared the rest of Greater Melbourne.
- The main difference between the country of origin and English proficiency data may be explained by how recently the population arrived in Australia. Migrants in Brimbank, Maribyrnong and Hume have generally originated from countries in newer waves of migration, while Moreland migrants have often resided in Australia for decades longer and Melbourne reflects a younger, more educated intake.
- Most SA2 regions within Brimbank exhibit very high proportions of population with little or no English proficiency, some in excess of 1 in 5 people.
- Sunshine North (22.5%) and St Albans -South (21.3%), have among the highest proportions of the population with low English proficiency in Victoria.

Table 4: Proportion of LGA population who speak English not well or not at all (ABS Census 2016) coloured by Greater Melbourne LGA decile

LGA Name		Total	Proportion
Victoria		**266,080**	**4.5%**
Greater Melbourne (LGA Median)		**251,543**	**5.6% (4.2%)**
NWMPHN		**112,237**	**6.8%**
Inner City	Maribyrnong (C)	7,570	9.2%
	Melbourne (C)	9,320	6.9%
	Yarra (C)	4,450	5.1%
Suburban	Brimbank (C)	25,990	13.4%
	Darebin (C)	10,768	7.3%
	Hobsons Bay (C)	4,332	4.9%
`	Moonee Valley (C)	5,464	4.7%
	Moreland (C)	10,334	6.4%
Growth Area	Hume (C)	15,974	8.1%
	Melton (S)	5,339	3.9%
	Wyndham (C)	12,437	5.7%
Peri-Urban	Macedon Ranges (S)	236	0.5%
	Moorabool (S)	156	0.5%

[11] Johnstone, M., & Kanitsaki, O. (2006). Culture, language, and patient safety: Making the link. International Journal for Quality in Health Care, 18(5), 383-388.

Figure 6: Deciles of proportion of population that speaks English not well or not at all, SA2, LGA 2016 (ABS Census 2016)



OTHER DETERMINANTS OF MENTAL HEALTH

Certain segments of the NWMPHN catchment are at higher risk of mental illness due to greater vulnerability to social, economic and environmental inequality.

This disadvantage accumulates and can impact on mental health status throughout life. Improving mental health inequalities requires an understanding of the social determinants of health, such as where a person is are born, their educational attainment, employment and income.[12]

In addition to the varied distribution of low English proficiency and country of birth presented earlier, there is diversity in personal income, homelessness, employment levels and educational attainment (Table 5, below). Maps that illustrate the geographical distribution and variation across the region are provided in the Appendix (Figure 8, Figure 9, Figure 10, pp.27-29).

Table 5: NWMPHN LGA Median Personal Income, education level and unemployment rate (ABS Census 2016) for persons 15years and over coloured by Greater Melbourne LGA decile

LGA Name		Median Personal Gross Weekly Income ($)	% Completed Year 12 equivalent	% Completed Year 9 or Less	March 2017 Unemployment Rate (%)
Victoria		**644**	**56.6%**	**11.3%**	**4.9**
Greater Melbourne		**673**	**61.5%**	**11.6%**	
NWMPHN			**61.6%**	**11.6%**	
Inner City	Maribyrnong (C)	703	67.9%	10.3%	7.5
	Melbourne (C)	642	77.8%	2.9%	3.8
	Yarra (C)	1,039	74.8%	6.0%	5.4
Suburban	Brimbank (C)	487	54.3%	17.9%	10.7
	Darebin (C)	650	64.4%	13.0%	6.3
	Hobsons Bay (C)	704	58.4%	12.5%	5.9
	Moonee Valley (C)	744	63.3%	11.1%	4.8
	Moreland (C)	680	65.2%	12.7%	6.4
Growth Area	Hume (C)	529	52.2%	16.1%	10.2
	Melton (C)	658	53.1%	11.9%	8.6
	Wyndham (C)	685	60.6%	9.9%	7.3
Peri-Urban	Macedon Ranges (S)	702	52.3%	9.5%	2.5
	Moorabool (S)	635	43.0%	12.9%	6

[12] *World Health Organization and Calouste Gulbenkian Foundation. Social determinants of mental health. Geneva, World Health Organization, 2014.* http://apps.who.int/iris/bitstream/10665/112828/1/9789241506809_eng.pdf

PREVALENCE OF MENTAL HEALTH CONDITIONS

The following section outlines the estimated prevalence of mental health conditions within the diverse NWMPHN population.

Prevalence of mental health conditions, such as depression and anxiety, would be expected to be related to the social determinants, such as employment, income and education, outlined in the previous section. However access to services, an ability to recognise the need for help and willingness to seek assistance also contribute, and potentially complicate prevalence estimates.

Lifetime Prevalence of Depression and Anxiety

The Victorian Population Health Survey (VPHS) published in 2015[13] reported the estimated prevalence of anxiety and depression within LGAs (Table 6, below).

These data illustrate a greater prevalence in female (Figure 12, Figure 13, p.33), which is consistent with the results of the National Health Survey 2014-15[14]. The communities of the inner city (Melbourne, Yarra and Maribyrnong) and inner north LGAs (Moreland and Darebin) are estimated to have a higher prevalence in total and within genders, in most cases. Higher prevalence is also observed in the peri-urban areas.

Notably, these estimates do not match the pattern as expected from socio-economic determinants, providing an example of the difficulty in estimating the latent prevalence of mental health disorders within a diverse population.

Table 6: NWMPHN LGA Prevalence of Depression and Anxiety (Victorian Population Health Survey 2015)

LGA Name		Male Prevalence % of population	Female Prevalence % of population	Persons Prevalence % of population
Victoria		**14.6**	**25.0**	**19.9**
NWMPHN		**14.1**	**24.2**	**19.2**
Inner City	Maribyrnong (C)	18.2	23.3	20.7
	Melbourne (C)	15.0	25.1	19.7
	Yarra (C)	24.1	19.0	21.3
Suburban	Brimbank (C)	11.5	22.8	17.4
	Darebin (C)	16.8	24.4	20.5
	Hobsons Bay (C)	12.4	24.2	18.6
	Moonee Valley (C)	12.1	20.5	16.4
	Moreland (C)	14.7	29.4	21.8
Growth Area	Hume (C)	14.4	24.1	18.9
	Melton (C)	11.4	28.0	19.6
	Wyndham (C)	17.3	20.4	18.9
Peri-Urban	Macedon Ranges (S)	13.9	26.0	20.3
	Moorabool (S)	16.9	28.9	22.8

[13] https://www2.health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/survey-data-and-reports/victorian-population-health-survey/victorian-population-health-survey-2015

[14] National Health Survey: First Results 2014-15, ABS

Psychological Distress, Social Isolation & Help Seeking

The Victorian Population Health Survey reports on self-reported levels of psychological distress, social isolation and help seeking. Table 7 (below) provides a summary of these data by LGA, showing there are high proportions of people experiencing a high or very high level of psychological stress, coupled with high or very high levels of social isolation, in the Growth Areas of Melton and Hume as well as the Suburban Moreland. The proportion of population with high or very high levels of psychological distress is also elevated in Brimbank. Relatively high or very high levels of social isolation are exhibited by Yarra, Maribyrnong and Wyndham.

These higher rates are not correlated with an elevated proportion of people who have sought professional help for mental health issues.

The pattern of high levels of psychological distress and social isolation largely overlap the lower socio-economic status areas where an elevated prevalence of mental health conditions is expected to occur. However, low levels of help seeking behavior is witnessed within these regions, while greater levels of help seeking behaviour is exhibited by higher SES status regions like Melbourne, Darebin and Hobsons Bay.

Within these low SES regions an inability or unwillingness to seek help could potentially be a contributing factor in the discrepancy between expected prevalence as driven by socio-economic factors and the observed prevalence.

Table 7: NWMPHN LGA Proportion of population proportion - high/very high levels of psychological distress, high/very high levels of social isolation and sought professional help for mental health issues (Victorian Population Health Survey 2014)

LGA Name		%High/Very High Level of Psych. Distress	%High/Very High Level of Social Isolation	% Sought Professional Help Last 12 Months
Victoria		**11.1**	**17.3**	**12.4**
NWMPHN		**11.1**	**17.5**	**12.2**
Inner City	Maribyrnong (C)	10.8	21.0	11.2
	Melbourne (C)	8.8	16.2	13.7
	Yarra (C)	7.8	22.0	16.4
Suburban	Brimbank (C)	14.4	18.2	9.7
	Darebin (C)	11.7	18.1	13.7
	Hobsons Bay (C)	12.1	15.1	13.3
	Moonee Valley (C)	10.1	18.4	10.4
	Moreland (C)	14.4	19.6	10.9
Growth Area	Hume (C)	15.9	20.5	11.2
	Melton (S)	20.7	20.2	10.2
	Wyndham (C)	11.2	20.3	12.0
Peri-Urban	Macedon Ranges (S)	6.9	18.0	11.6
	Moorabool (S)	11.9	9.9	9.2

Adolescent Mental Health Condition – 12 Month Prevalence

The Second Australian Child and Adolescent Survey of Mental Health and Wellbeing 2015 (Young Minds Matter survey) was undertaken by the University of Western Australia for the Department of Health in 2013 to provide national estimates of the extent of mental disorders in children and adolescents aged 4-17 years.

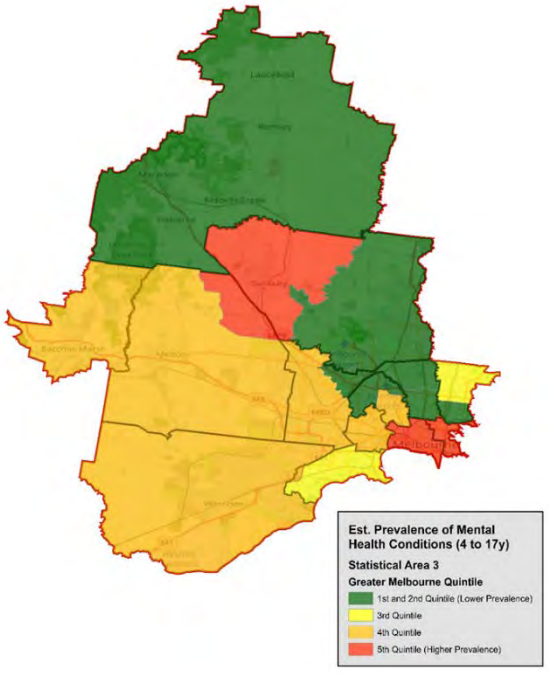
Based on an interview sample size of 6,310 families, the survey generated important information on the prevalence and severity of mental disorders but it did not allow direct, reliable estimates to be made in small geographic areas.

The Young Minds Matter survey data identified several socio-demographic characteristics that were associated with prevalence of mental disorders. These socio-demographic characteristics are known to vary across geographic areas in Australia.

Using this data, synthetic estimates of prevalence and severity of mental disorders were developed by combining statistical modelling of socio-demographic factors associated with mental disorder status from the YMM survey data, with information on the geographic distribution of those factors within each Primary Health Network region, drawing on the 2011 Census data. [15, 16]

These data estimate an elevated 12 month prevalence of mental illness within the inner-city regions of Melbourne and Yarra, and to a lesser extent in Sunbury (Table 8, p.17 and Figure 7 below). In interpreting the data, it is essential to acknowledge their limitations and that the results are indicative only. It is critical that users of the data note that the estimates are not based on actual counts but are statistically modelled and therefore subject to a degree of imprecision.

Figure 7: Synthetic (modelled) estimates of prevalence of mental disorders within children and adolescents by age bracket across the NWMPHN region (The Second Australian Child and Adolescent Survey of Mental Health and Wellbeing 2015)



[15] PHN Secure website

[16] The Second Australian Child and Adolescent Survey of Mental Health and Wellbeing 2015, https://youngmindsmatter.telethonkids.org.au/our-research/

Table 8: Synthetic (modelled) estimates of prevalence of mental disorders within children and adolescents by age bracket across the NWMPHN region (The Second Australian Child and Adolescent Survey of Mental Health and Wellbeing 2015)

SA4	SA3	Est. Number – 4 -11yr	Est. Prevalence – 4 -11yr	Est. Number – 12 - 17yr	Est. Prevalence – 12 - 17yr	Est. Number – 4-17yr	Est. Prevalence – 4-17yr
Melbourne - Inner	Brunswick - Coburg	640	10.5	410	11.1	1,060	10.7
	Darebin - South	450	10.3	280	11.7	740	10.8
	Essendon	770	13.7	510	12.5	1,280	13.2
	Melbourne City	610	18.8	480	16	1,090	17.5
	Yarra	860	18.2	520	19.3	1,380	18.6
Melbourne - N East	Darebin - North	840	11	680	13.9	1,520	12.2
Melbourne - N West	Keilor	500	9.7	460	11.7	960	10.6
	Macedon Ranges	360	10.9	250	10	610	10.5
	Moreland - North	710	10.7	600	12.6	1,310	11.5
	Sunbury	550	13.3	470	14.4	1,020	13.8
	Tulla - Bmeadow	1,790	10.5	1,640	12.2	3,430	11.2
Melbourne - West	Brimbank	2,040	11.3	1,970	14.1	4,010	12.5
	Hobsons Bay	840	11.3	700	12.4	1,540	11.8
	Maribyrnong	720	11.7	570	15	1,290	13
	Melton - B Marsh	2,130	12.2`	1,650	13.9	3,770	12.9
	Wyndham	2,880	12.8	2,020	13.2	4,910	13
Greater Capital City Statistical Area			**12.1 (10.6,13.6)**		**13.2 (11.3,15.1)**		**12.6 (11.4,13.8)**
NWMPHN		**16,700**	**12**	**13,230**	**13.3**	**29,930**	**12.5**

Homelessness

The ABS General Social Survey estimated that people who reported having a mental health condition were more than twice as likely to have experienced homelessness in their lifetime, compared with people who did not (25% compared with 10%). People who reported a mental health condition were also more than twice as likely to have experienced homelessness in the last 10 years compared with people who did not (15% compared with 6.1%).[17, 18]

Given these prevalence data and that more than one third of Victorian homeless persons are estimated to be within the NWMPHN catchment, this is a key target group for health service planning.

[17] ABS (2016) 4329.0.00.005 Mental Health and Experiences of Homelessness, Australia, 2014

[18] http://www.aihw.gov.au/homelessness/specialist-homelessness-services-2015-16/mental-health/

SERVICE RESPONSE

USE OF SERVICES

Primary health services such as general practitioners (GPs) are often the first point of contact for people experiencing mental illness, and are critical in providing continuity of care and connection with specialist providers. GPs provided mental health-related services to approximately 465,000 Victorians in 2014–15 [19]

The number of Victorians accessing Medicare subsidised GP mental health services has increased at a rate of about 5.5 per cent every year between 2010–11 and 2014–15. Table 9 (below) and Table 10 (p.19) provide an estimation of the per capita rates of the usage of the specialist mental health items for GPs and clinical psychologists.

These data illustrate growth in usage of the items in all areas since 2011, but also a variation in usage across the catchment. In particular, there is much lower usage of clinical psychology services in the West and North West. This is unlikely to be related to lower prevalence, but more linked to a reduced availability of service because of affordability or workforce supply.

Table 9: Patients and services per 1,000 people for GP Mental Health items by provider location by SA3 area (PHN MBS data)[20] Department of Health)

SA4	SA3	Patients per 1,000 people				Services per 1,000 people			
		2011	2012	2013	2014	2011	2012	2013	2014
Melbourne - Inner	Brunswick - Coburg	74.3	79.5	85.9	91.4	136.4	144.9	156.1	164.3
	Darebin - South	79.7	87.2	89.7	98.5	150.2	154.5	159.2	175.5
	Essendon	59.6	64.2	70	75.5	107.8	116.8	120.2	132.8
	Melbourne City	56.9	59.2	62.6	63.5	109	110.8	116.5	122.7
	Yarra	75.7	78.1	82.5	89.1	141.9	142.5	147.6	157.2
Melbourne - N East	Darebin - North	60.6	66.3	70.9	75.4	115.9	126	131.6	138.9
Melbourne - N West	Keilor	53.9	58.3	62.9	70.7	93.1	100.4	106.5	119.9
	Macedon Ranges	72.4	76.4	81.7	89.1	133.1	140.6	156.5	172.4
	Moreland - North	62.2	66.3	71.2	75.4	116.7	122.1	124.8	133.6
	Sunbury	88.7	90.8	96.3	105.7	165.9	164.8	179	213.3
	Tulla - Bmeadow	71.7	81.2	87.2	90.5	122.5	143.6	158.4	164.6
Melbourne - West	Brimbank	52.5	59.1	65.5	69.2	97.7	111.1	120.9	128.4
	Hobsons Bay	60.2	64.2	73.5	78.7	103.4	109.4	129.6	137.9
	Maribyrnong	59.9	65	70.5	76.5	106.8	115.1	123.7	138.4
	Melton - B Marsh	74	82.1	88.4	93.6	161.8	186.5	192.2	206.7
	Wyndham	57.1	62.2	69.9	73.7	99.2	107.7	126.9	127.5

[19] http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Mental_Health_Data#MBSDATA Medicare Benefits Schedule – mental health specific items

[20] Item numbers: 170, 171, 172, 2574, 2575, 2577, 2578, 2700, 2701,2702, 2704, 2705, 2707, 2708, 2710, 2712, 2713, 2715, 2717, 2719, 2721, 2723, 2725, 2727, 20104

Table 10: Patients and services per 1,000 people for Clinical Psychologists Mental Health items by provider location by SA3 area (PHN MBS data Department of Health)[21]

SA4	SA3	Patients per 1,000 people				Services per 1,000 people			
		2011	2012	2013	2014	2011	2012	2013	2014
Melbourne - Inner	Brunswick - Coburg	22.4	27.4	30.1	31.7	123.2	153.4	153.7	163.9
	Darebin - South	23.6	29.5	32.3	34.6	140.8	174.6	171.9	186.4
	Essendon	16.6	19.3	23	23.9	90.2	100.6	115.7	114.5
	Melbourne City	13.9	15.9	17.5	18.3	80.4	88.5	87.8	90.2
	Yarra	23.7	27.5	30.7	31.8	137.1	156.1	161.7	166
Melbourne - N East	Darebin - North	12.7	15.2	17.1	19.4	69.6	83.8	81.9	95.3
Melbourne - N West	Keilor	14.3	17.3	21.1	22	78.1	86.2	97.6	104.8
	Macedon Ranges	8.5	10.2	12.2	14.4	40.1	50.6	57.4	64.3
	Moreland - North	13.3	15	16.5	18.4	69.1	76.8	77.8	87.1
	Sunbury	13.9	14.6	15.8	18	68.8	72.6	71.7	83.8
	Tulla - Bmeadow	13.1	14.4	16.1	16.5	61.4	68.4	68.4	74.1
Melbourne - West	Brimbank	7.7	9.8	12	13.2	38.6	45.1	54.3	60.3
	Hobsons Bay	11.3	12.5	16.2	19.5	57.3	62.6	80	89.3
	Maribyrnong	13.8	17.5	20.7	22.2	74.8	91.5	102.5	110.2
	Melton - B Marsh	11.9	13.4	16.4	16.3	61.9	66.7	74.9	74.7
	Wyndham	8.9	9.4	11.9	12.8	41.5	44.7	54.4	56.6

Hospitalisations for Mental Health Conditions and Intentional Self-Harm

An understanding of the level of hospitalisation for a mental health condition can provide some insight into the prevalence of severe mental illness within communities and the communities' ability and capacity to provide supports for the person outside of a hospital admission.

The Australian Institute of Health and Welfare reports on hospitalisation by SA3, type of mental health condition and hospital type. These data identify that:

- The NWMPHN hospitalisation rate is largely at or below the Australian Metropolitan average for all conditions except for dementia[22].
- At SA3 level, compared to the median Greater Melbourne hospitalisation rate:
    - Melbourne Inner: High overall rates throughout inner Melbourne SA3s. Values in the top 2 deciles for Greater Melbourne SA3s are observed for schizophrenia within Yarra, Melbourne City and Darebin-South; anxiety within Brunswick-Coburg; bipolar disorder within Darebin- South and Essendon; depression within Brunswick- Coburg; alcohol and other drugs within Yarra and Melbourne City; and dementia for Brunswick- Coburg and Melbourne City
    - In other parts of the catchment, very high rates are observed for:
        - Schizophrenia in Darebin-North) and Maribyrnong
        - Anxiety within Sunbury and Melton- Bacchus Marsh
        - Bipolar disorder in Keilor
        - Dementia within Moreland-North, Maribyrnong and Wyndham.
    - Sunbury has very high rates for anxiety and intentional self-harm in conjunction with elevated rate for depression.

[21] Item numbers 80000, 80005, 80010, 80015, 80020

[22] https://www.myhealthycommunities.gov.au/our-reports/mental-health-and-intentional-self-harm

Table 11: Hospitalisation for Mental Health Condition by SA3 - Age Standardised Rate per 100,000 (AIHW Admitted Patient Mental Healath Related Care 2014-15)

SA3 Name		Total	Schizoph.	Anxiety	Bipolar	Depression	Alcohol/ Oth Drugs	Dementia	Intentional Self-Harm
Metropolitan (Greater Melbourne SA3 Median)		888 (847)	159 (145)	127 (103)	99 (115)	110 (104)	161 (102)	51 (53)	136 (100)
NWMPHN		788	166	95	100	90	95	66	84
Melb. - Inner	Brunswick - Coburg	983	167	124	133	134	128	82	118
	Darebin - South	928	220	104	150	80	124	43	86
	Essendon	929	166	99	172	126	125	61	66
	Melbourne City	973	247	113	76	83	170	88	107
	Yarra	1113	293	108	120	109	183	61	115
Melb. - N East	Darebin - North	908	259	98	114	87	71	60	101
Melb. - N West	Keilor	757	85	114	169	89	96	48	96
	Macedon Ranges	700	144	92	102	77	89	N/A	N/A
	Moreland - North	917	219	108	120	102	91	85	76
	Sunbury	843	61	139	110	127	91	64	147
	Tulla - Bmeadow	668	136	94	97	72	67	52	64
Melb. - West	Brimbank	739	190	87	68	71	85	67	68
	Hobsons Bay	734	149	72	89	99	99	52	66
	Maribyrnong	910	246	90	74	98	87	79	93
	Melton - B Marsh	747	100	118	85	108	86	70	102
	Wyndham	593	107	69	77	74	57	74	68

MBS Service Usage

Medicare Benefits Schedule (MBS) usage data provides important information on the affordability and distribution of non-hospital services.

Table 12 (below) provides a summary of the average number of mental health services and the average fee excess for mental health services provided in 2014-15 – this is the amount payable by the patient above the MBS scheduled fee.

These data illustrate a pattern consistent with income distribution data (Figure 9, p.26), in that there are a higher number of services per patient and a higher excess fee per service in areas with higher income levels. Brimbank, Tullamarine-Broadmeadows and Wyndham are in the lowest 20% for out-of-pocket expenses and lowest 20% for services per patient, indicating service affordability and specialist access is a major contributing factor.

Table 12: MBS Mental health services 2014-15 – Excess Fees and Services provided per patient [23]

SA4	SA3	Mean Excess Fees per Service ($)	Mean Services per Patient
Melbourne - Inner	Brunswick - Coburg	27.59	6.02
	Darebin - South	31.97	6.77
	Essendon	29.64	5.65
	Melbourne City	29.14	5.71
	Yarra	34.87	6.63
Melbourne - N East	Darebin - North	19.53	5.36
Melbourne - N West	Keilor	25.73	5.38
	Macedon Ranges	21.71	5.22
	Moreland - North	18.14	5.08
	Sunbury	15.05	5.24
	Tulla - Bmeadow	9.57	4.34
Melbourne - West	Brimbank	12.42	4.56
	Hobsons Bay	23.24	5.19
	Maribyrnong	24.14	5.26
	Melton - B Marsh	10.68	4.62
	Wyndham	15.97	4.46
Victoria		**23.92**	**5.32**
Australia		**21.10**	**5.18**

The proportion of services provided by each provider type also illustrates this gradient across the region (Table 13, p.22). It is also significantly different between inner and outer areas with psychiatrists and clinical psychologists providing the bulk of mental health services within the inner areas, compared to outer SA3s, where it is generally less than 42%.

These data are consistent with the classification of much of the area as a District of Workforce Shortage for specialist psychiatry services, which provides incentives for psychiatrists to establish practice in these areas. [24]

[23] http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Mental_Health_Data#MBSDATA
[24] http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/dwsFactsheet

Table 13: Proportion of MBS mental health services by provider type 2014-15

SA4	SA3	% Total MH Service Decile			
		Psychiatrists	Clinical Psychologists	GP	Other Allied Health
Melbourne - Inner	Brunswick - Coburg	27.1%	23.6%	23.7%	25.7%
	Darebin - South	31.3%	22.0%	20.8%	25.9%
	Essendon	28.4%	21.0%	24.4%	26.2%
	Melbourne City	33.4%	18.7%	25.4%	22.6%
	Yarra	34.9%	21.8%	20.6%	22.7%
Melbourne - N East	Darebin - North	26.7%	18.8%	27.3%	27.2%
Melbourne - N West	Keilor	27.0%	21.3%	24.3%	27.4%
	Macedon Ranges	22.2%	11.4%	30.6%	35.8%
	Moreland - North	23.9%	18.2%	27.9%	30.0%
	Sunbury	22.2%	12.7%	32.3%	32.8%
	Tulla - Bmeadow	16.7%	16.0%	35.6%	31.7%
Melbourne - West	Brimbank	19.3%	15.8%	33.6%	31.3%
	Hobsons Bay	22.6%	17.8%	27.4%	32.2%
	Maribyrnong	21.4%	22.5%	28.2%	27.9%
	Melton - B Marsh	13.8%	14.9%	41.2%	30.2%
	Wyndham	18.3%	14.6%	32.9%	34.2%
NWMPHN		**23.9%**	**18.2%**	**29.1%**	**28.8%**
Greater Melbourne		**25.5%**	**18.3%**	**27.9%**	**28.2%**

PBS Service Usage

The Pharmaceutical Benefits Scheme (PBS) provides funding for subsidised medicines to all Australians and other eligible people. Similarly to the analysis of the MBS data, analysis of the PBS data can be used to develop a better understanding of the distribution of services delivered.

The data presented below were developed by the National Health Performance Authority to provide a better understanding of the variation in practice across Australia in some prescribing patterns and other medical treatments.[25] These studies have been undertaken to understand quality, equity and efficiency in health care service delivery, as much of the variation is accounted for by the willingness and ability of doctors to offer treatment, rather than differences in illness or patient preference.

Anti-depressant prescriptions

Anti-depressant prescription rates within the catchment are predominantly at, or below, the Greater Melbourne median rates across the age spectrum.

Very low rates are observed in Melbourne City for all age groups, while very low rates are also seen for people aged under 17 years in Tullamarine-Broadmeadows and Brimbank.

High rates were observed for all age groups in Sunbury, particularly the 18 to 64 years and 65 plus groups. Melton-Bacchus Marsh also possesses high or very high rates within the two older age groups.

Table 14: PBS prescriptions dispensed for antidepressant medicines per 100,000 people, age standardised, by SA3, 2013–14

SA4	SA3	Age Standardised Rate per 100,000 people		
		Under 17 years	18 to 64 years	Greater than 65 years
Melbourne - Inner	Brunswick - Coburg	5,389	85,855	199,186
	Darebin - South	7,816	89,115	183,475
	Essendon	5,345	83,522	176,533
	Melbourne City	2,679	64,188	150,572
	Yarra	6,191	88,414	174,144
Melbourne - N East	Darebin - North	4,400	83,782	192,085
Melbourne - N West	Keilor	4,706	87,144	175,017
	Macedon Ranges	8,097	96,307	178,070
	Moreland - North	4,425	84,961	183,787
	Sunbury	8,930	120,866	232,836
	Tulla - Bmeadow	3,807	84,455	194,029
Melbourne - West	Brimbank	3,609	73,896	162,730
	Hobsons Bay	5,311	94,601	185,406
	Maribyrnong	5,294	79,564	171,740
	Melton - B Marsh	5,983	101,895	227,323
	Wyndham	6,714	83,950	192,342
Greater Melbourne SA3 median		**7,122**	**86,250**	**182,997**
Victoria		**7,789**	**99,774**	**194,225**

[25] https://www.safetyandquality.gov.au/wp-content/uploads/2014/05/Exploring-Healthcare-Variation-in-Australia-Analyses-Resulting-from-an-OECD-Study.pdf

Anti-anxiolytic prescriptions

NWMPHN catchment displays mostly elevated anti-anxiolytic prescription rates across age groups and SA3 regions compared to the Greater Melbourne SA3 rate:

- Very low rates are seen in Macedon Ranges.
- Very high rates are seen in Darebin – North within the 18 to 64-year age group, as well as the over 65 year group in Melton – Bacchus Marsh. Yarra possesses high rates within both age groups.

Table 15: PBS prescriptions dispensed for anti-anxiolytic medicines per 100,000 people, age standardised, by SA3, 2013–14

SA4	SA3	Age Standardised Rate per 100,000	
		18 to 64 years	Greater than 65 years
Melbourne - Inner	Brunswick - Coburg	18,353	47,923
	Darebin - South	18,578	44,866
	Essendon	18,242	47,625
	Melbourne City	19,312	40,196
	Yarra	23,247	49,069
Melbourne - N East	Darebin - North	27,666	46,746
Melbourne - N West	Keilor	19,008	41,825
	Macedon Ranges	15,393	31,833
	Moreland - North	23,231	46,095
	Sunbury	21,555	48,885
	Tulla - Bmeadow	21,797	47,806
Melbourne - West	Brimbank	19,384	45,981
	Hobsons Bay	22,437	45,591
	Maribyrnong	21,895	52,362
	Melton - B Marsh	20,031	56,031
	Wyndham	16,014	47,671
Greater Melbourne SA3 median		**19,348**	**45,574**
Victoria		**20,689**	**42,664**

Anti-psychotic prescriptions

A similar, but more distributed, pattern is observed with anti-psychotic prescription rates when compared to anti-anxiolytic prescription rates with elevated rates compared to the Greater Melbourne median SA3 value:

- Yarra has very high rates across the older two age groups, with very high rates also seen in Darebin-North for the 18 to 64 year age group and Brunswick-Coburg, Melbourne city and Maribyrnong.
- Very low rates are observed in the older two age groups within Macedon Ranges, and within the 18 to 64 year age group for Wyndham and the under 17 year age group in Keilor. The under 17 year age group has very high rates of prescriptions within Wyndham.

Table 16: PBS prescriptions dispensed for antipsychotic medicines per 100,000 people, age standardised, by SA3, 2013–14

SA4	SA3	Age Standardised Rate per 100,000 people		
		Under 17 years	18 to 64 years	Greater than 65 years
Melbourne - Inner	Brunswick - Coburg	1,316	20,585	45,117
	Darebin - South	2,071	18,308	38,887
	Essendon	876	17,642	34,991
	Melbourne City	1,358	19,234	44,030
	Yarra	1,278	26,440	57,130
Melbourne - N East	Darebin - North	1,786	24,942	37,986
Melbourne - N West	Keilor	799	16,790	29,983
	Macedon Ranges	1,327	12,038	25,158
	Moreland - North	1,270	20,070	33,907
	Sunbury	1,949	14,168	33,800
	Tulla - Bmeadow	1,060	17,734	34,700
Melbourne - West	Brimbank	1,403	19,267	33,403
	Hobsons Bay	1,428	19,909	33,809
	Maribyrnong	1,632	22,357	43,047
	Melton - B Marsh	1,771	16,072	37,216
	Wyndham	2,077	13,328	30,663
Greater Melbourne SA3 median		**1,356**	**16,779**	**30,771**
Victoria		**1,774**	**19,663**	**31,763**

In summarising prescription rates across the three main mental health pharmaceutical groups:

- Sunbury and Melton-Bacchus Marsh have elevated prescription rates across all drug types and age groups except for 18 to 64 year age group for anti-psychotics and the under 17 year age group for anti-depressants for Melton-Bacchus Marsh.
- Opportunities exist to develop programs that target areas of very low prescription rates as these are unlikely to be related to low population prevalence and more likely to relate to availability of specialist psychiatric service availability and GP practice quality.

ADDITIONAL FIGURES, TABLES AND MAPS

Figure 8: Median household income by SA2 and LGA. Deciles of the Victorian level, 2016 (ABS Census 2016)

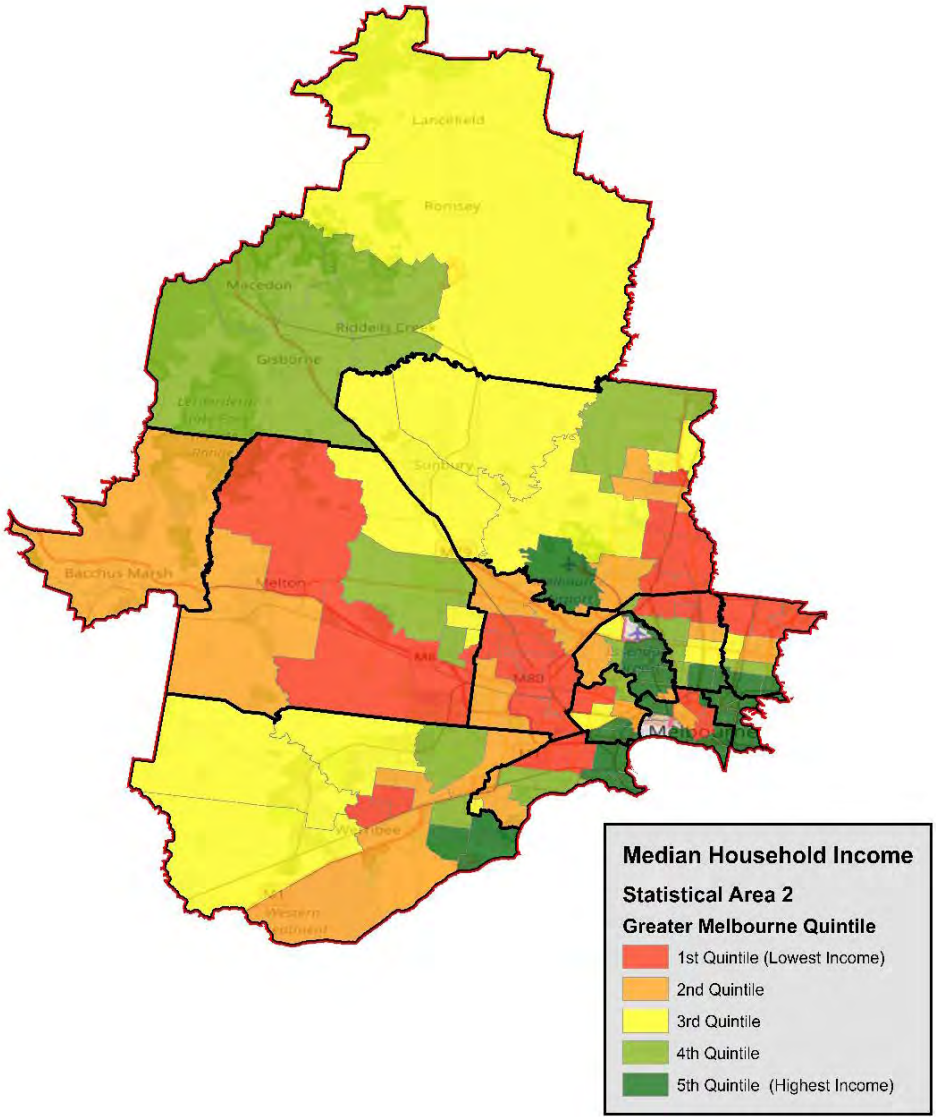


Figure 9: Proportion of the population that has completed year 9 or less by SA2 and LGA. Deciles of the Victorian level, 2016 (ABS Census 2016)

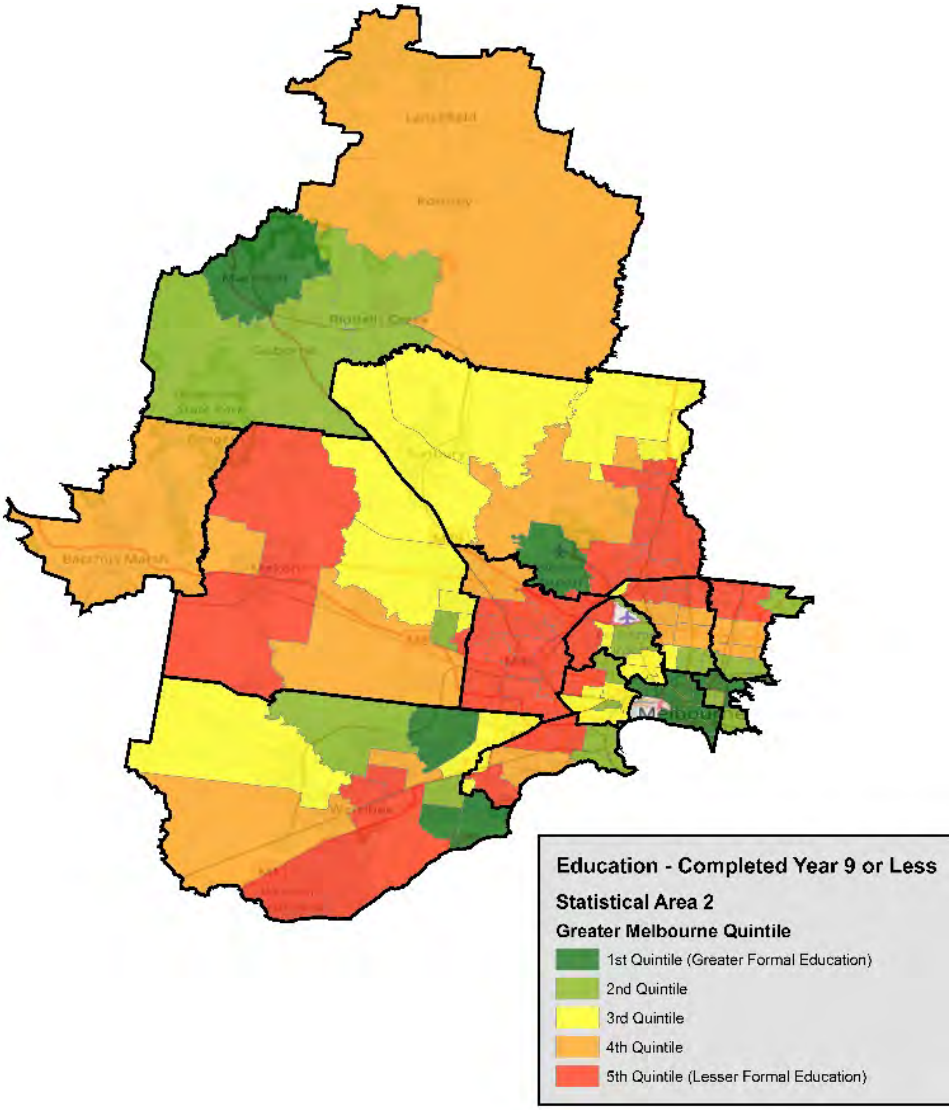


Figure 10: Proportion of the population that has completed year 12 or equivalent by SA2 and LGA. Deciles of the Victorian level, 2016 (ABS Census 2016)

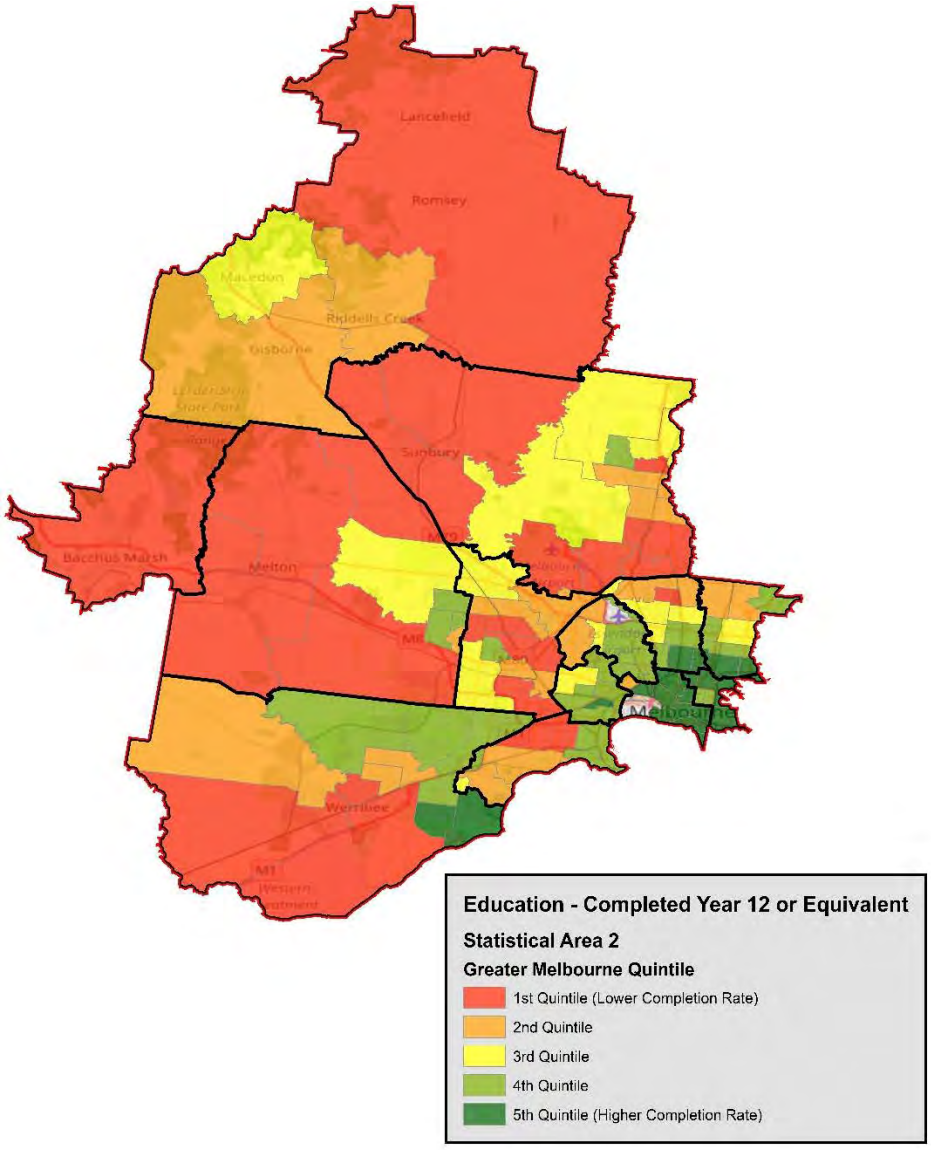


Figure 11: Estimated population aged 4-17 years that has a mental health condition. SA3 Quartiles of the Victorian level, 2016 (PHIDU, 2017)

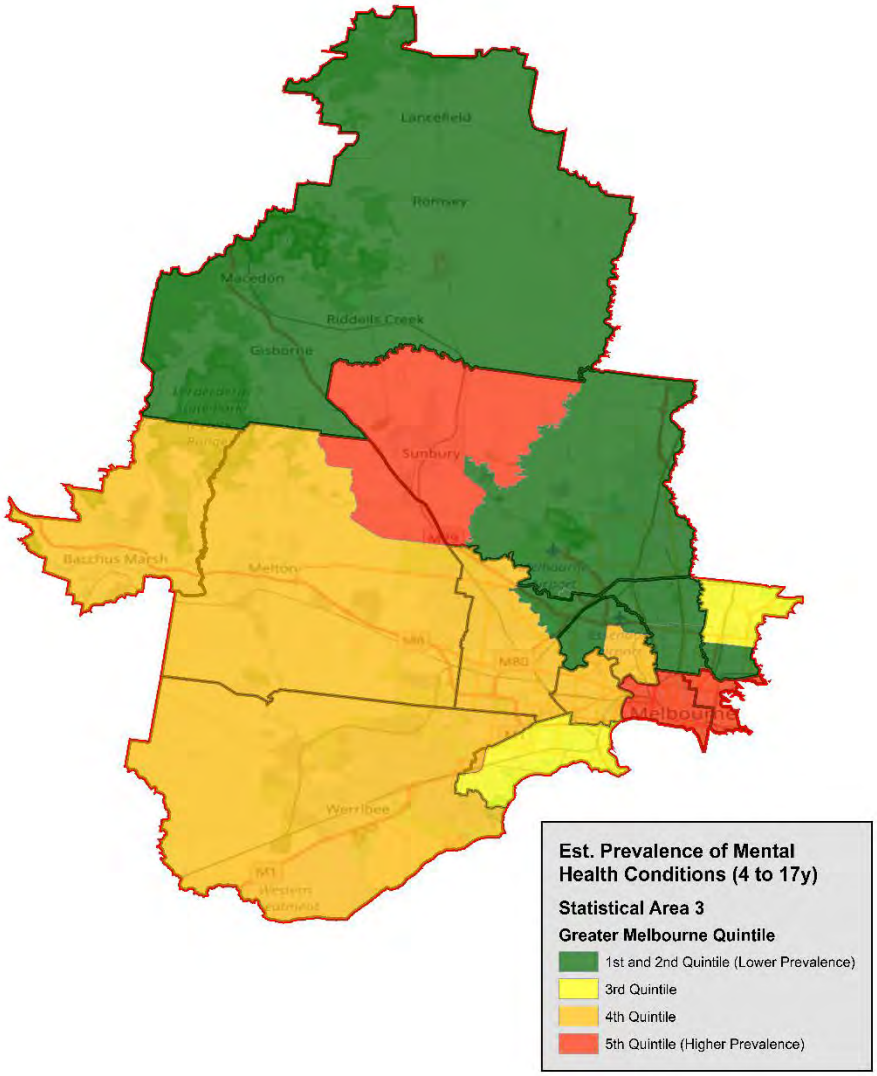


Table 17: Psychiatrist MBS Services 2014, Greater Melbourne Deciles by PHN (MBS)

SA4	SA3	Mean Fees Per Service ($)	Mean Services Per Patient	% Total MH Services	Fees Per Service Decile	Services Per Patient Decile	% Total MH Service Decile
Melbourne - Inner	Brunswick - Coburg	37.42	8.31	27.1%	5	7	6
	Darebin - South	39.67	10.18	31.3%	6	10	8
	Essendon	40.84	8.38	28.4%	6	8	7
	Melbourne City	38.36	7.43	33.4%	6	6	9
	Yarra	44.78	10.59	34.9%	9	10	9
Melbourne - N East	Darebin - North	26.89	7.26	26.7%	2	5	6
Melbourne - N West	Keilor	36.29	7.37	27.0%	4	5	6
	Macedon Ranges	33.89	7.25	22.2%	3	4	4
	Moreland - North	29.13	6.90	23.9%	3	4	5
	Sunbury	26.54	7.26	22.2%	2	5	4
	Tulla - Bmeadow	22.66	4.83	16.7%	1	1	1
Melbourne - West	Brimbank	23.42	5.35	19.3%	1	1	3
	Hobsons Bay	37.49	7.37	22.6%	5	5	4
	Maribyrnong	36.61	6.97	21.4%	4	4	3
	Melton - B Marsh	24.24	5.04	13.8%	1	1	1
	Wyndham	25.60	5.70	18.3%	2	2	2
Greater Melbourne		**38.70**	**7.46**	**25.5%**			
NWMPHN		**33.68**	**7.09**	**23.9%**			

Table 18: Clinical Psychologist MBS Services 2014, Greater Melbourne Deciles by PHN (MBS)

SA4	SA3	Mean Fees Per Service ($)	Mean Services Per Patient	% Total MH Services	Fees Per Service Decile	Services Per Patient Decile	% Total MH Service Decile
Melbourne - Inner	Brunswick - Coburg	29.95	5.18	23.6%	7	10	10
	Darebin - South	33.49	5.39	22.0%	9	10	10
	Essendon	29.85	4.79	21.0%	7	6	9
	Melbourne City	33.80	4.94	18.7%	9	8	5
	Yarra	33.30	5.21	21.8%	9	10	9
Melbourne - N East	Darebin - North	22.75	4.91	18.8%	5	7	5
Melbourne - N West	Keilor	26.70	4.77	21.3%	5	6	9
	Macedon Ranges	24.14	4.48	11.4%	5	2	1
	Moreland - North	20.12	4.74	18.2%	3	5	4
	Sunbury	20.94	4.65	12.7%	3	4	1
	Tulla - Bmeadow	10.31	4.50	16.0%	1	3	3
Melbourne - West	Brimbank	13.92	4.56	15.8%	1	3	2
	Hobsons Bay	25.92	4.58	17.8%	5	4	3
	Maribyrnong	28.07	4.97	22.5%	6	9	10
	Melton - B Marsh	9.23	4.57	14.9%	1	3	2
	Wyndham	16.81	4.41	14.6%	2	1	1
Greater Melbourne		**25.54**	**4.76**	**18.3%**			
NWMPHN		**23.84**	**4.81**	**18.2%**			

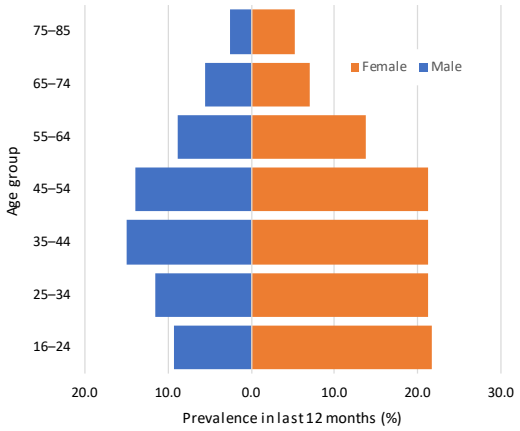
Table 19: GP MH MBS Services 2014, Greater Melbourne Deciles by PHN (MBS)

SA4	SA3	Mean Fees Per Service ($)	Mean Services Per Patient	% Total MH Services	Fees Per Service Decile	Services Per Patient Decile	% Total MH Service Decile
Melbourne - Inner	Brunswick - Coburg	6.29	1.80	23.7%	7	6	3
	Darebin - South	8.25	1.78	20.8%	8	6	1
	Essendon	6.15	1.76	24.4%	6	4	4
	Melbourne City	6.49	1.93	25.4%	7	9	5
	Yarra	10.40	1.76	20.6%	9	4	1
Melbourne - N East	Darebin - North	3.35	1.84	27.3%	3	7	6
Melbourne - N West	Keilor	5.21	1.70	24.3%	5	1	4
	Macedon Ranges	6.36	1.94	30.6%	7	9	8
	Moreland - North	2.99	1.77	27.9%	3	5	7
	Sunbury	2.22	2.02	32.3%	2	10	8
	Tulla - Bmeadow	1.01	1.82	35.6%	1	7	10
Melbourne - West	Brimbank	1.76	1.86	33.6%	2	8	9
	Hobsons Bay	4.60	1.75	27.4%	4	3	6
	Maribyrnong	5.69	1.81	28.2%	5	7	7
	Melton - B Marsh	0.86	2.21	41.2%	1	10	10
	Wyndham	1.47	1.73	32.9%	1	2	9
Greater Melbourne		**5.26**	**1.84**	**27.9%**			
NWMPHN		**3.74**	**1.85**	**29.1%**			

Table 20: Other Allied Health MH MBS Services 2014, Greater Melbourne Deciles by PHN (MBS)

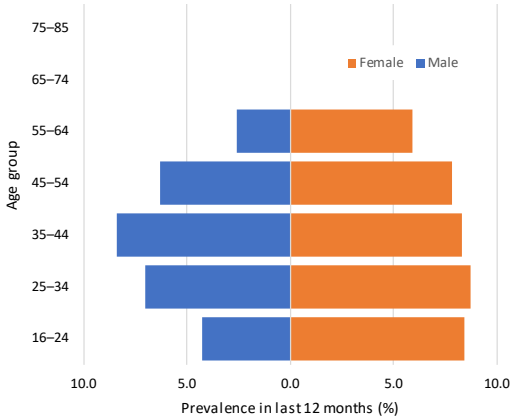
SA4	SA3	Mean Fees Per Service ($)	Mean Services Per Patient	% Total MH Services	Fees Per Service Decile	Services Per Patient Decile	% Total MH Service Decile
Melbourne - Inner	Brunswick - Coburg	34.69	4.85	25.7%	7	9	3
	Darebin - South	40.36	5.16	25.9%	9	10	4
	Essendon	39.12	4.70	26.2%	8	7	4
	Melbourne City	37.15	4.82	22.6%	8	8	1
	Yarra	43.37	4.97	22.7%	10	10	2
Melbourne - N East	Darebin - North	26.33	4.67	27.2%	4	6	5
Melbourne - N West	Keilor	32.77	4.52	27.4%	6	4	5
	Macedon Ranges	26.50	4.52	35.8%	4	4	10
	Moreland - North	22.30	4.50	30.0%	3	3	6
	Sunbury	17.61	4.83	32.8%	2	9	9
	Tulla - Bmeadow	11.91	4.24	31.7%	1	1	8
Melbourne - West	Brimbank	16.33	4.37	31.3%	1	2	8
	Hobsons Bay	27.64	4.54	32.2%	5	5	9
	Maribyrnong	30.05	4.65	27.9%	5	6	5
	Melton - B Marsh	18.60	4.20	30.2%	2	1	7
	Wyndham	24.36	4.37	34.2%	4	2	10
Greater Melbourne		**27.97**	**4.56**	**28.2%**			
NWMPHN		**26.52**	**4.55**	**28.8%**			

Figure 12: Prevalence of Anxiety mental health disorder in the previous 12 months, by age group - Australia



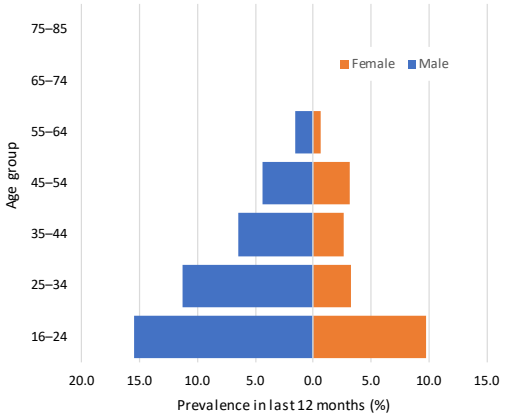
Source: ABS (2008) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007

Figure 13: Prevalence of Affective disorders in the previous 12 months, by age group - Australia



Source: ABS (2008) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007

Figure 14: Prevalence of Substance Use disorders in the previous 12 months, by age group - Australia



Source: ABS (2008) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007

ALCOHOL AND OTHER DRUGS AREA PROFILE

SUMMARY

- Lower socio-economic areas, such as Brimbank, Hume and Melton exhibit relatively high rates of people who abstain from drinking and relatively low per capita rates of high risk drinking, when compared to other greater Melbourne Local Government Areas. However, these regions have proportionally higher rates of alcohol related societal harms than less disadvantaged municipalities.
- The Melbourne and Yarra municipalities have elevated levels of assault and violence related to alcohol use, partly driven by the high concentration of night time entertainment venues in these areas.
- Domestic violence, either definitely or potentially attributable to alcohol, is also present in relatively high rates within the NWMPHN catchment, in particular Hobsons Bay, Moorabool, Melbourne and Melton.
- Broad patterns of alcohol and other drug therapeutic service usage are:
    - Alcohol – very high rates in Melbourne and Yarra, with mildly elevated rates throughout suburban LGAs. Lower rates are present in the growth areas
    - Illicit - very high rates in Melbourne and Yarra, elevated throughout catchment except for peri-urban localities
    - Amphetamines – Yarra, Melton, Moreland and Hume exhibit very high rates of referrals extracted from Victorian Government Alcohol and Drug Information System (ADIS)
    - Heroin – Inner city LGAs of Melbourne, Yarra and Maribyrnong as well as Brimbank, Darebin and Hobsons Bay display very high rates of referrals
    - Cannabis – Melton, Hobsons Bay, Brimbank and Yarra possess the highest rates of referral
- Newly announced initiatives of the Victorian and Australian governments are aimed at reducing the prevalence of alcohol and drug misuse as well as the health harm associated with misuse. These include:
    - implementing the real-time prescription monitoring program in Victoria
    - making medicines containing codeine only be available by prescription from February 2018
    - a two-year trial of a medically supervised injecting room at the North Richmond Community Health Centre

ANALYSIS NOTES

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

ABOUT ALCOHOL AND OTHER DRUGS

The problematic use of alcohol and other drugs is a continued challenge for the Australian health care system. The harms to individuals, families, and communities from alcohol, tobacco and other drugs is well known:

- The cost to Australian society of alcohol, tobacco and other drug misuse in 2004–05 was estimated at $56.1 billion, including costs to the health and hospitals system, lost workplace productivity, road accidents and crime. Of this, tobacco accounted for more than half of the total cost.
- Excessive consumption of alcohol is a major cause of health and social harms. Short episodes of heavy alcohol consumption are a major cause of road and other accidents, domestic and public violence, and crime. Long-term heavy drinking is a major risk factor for chronic disease, including liver disease and brain damage, and contributes to family breakdown and broader social dysfunction.
- Tobacco smoking is one of the top risk factors for chronic disease including many types of cancer, respiratory disease and heart disease.
- Illegal drugs not only have dangerous health impacts but they are a significant contributor to crime. They are a major activity and income source for organized crime groups. Like alcohol, illegal drugs can contribute to road accidents and violent incidents, and to family breakdown and social dysfunction. Unsafe injecting drug use is also a major driver of blood-borne virus infections like hepatitis C and HIV/AIDS.
- Alcohol, tobacco and other drug use can contribute to and reinforce social disadvantage experienced by individuals, families and communities. Children living in households where parents misuse drugs are more likely to develop behavioural and emotional problems, tend to perform more poorly in school and are more likely to be the victims of child maltreatment. [1]

The National Drug Strategy Household Survey (NDSHS) provides data on the overall level of alcohol and drug consumption. In 2016:

- Fewer people drank alcohol in quantities that exceeded the lifetime risk guidelines compared with 2013 (17.1%, down from 18.2% in 2013). But there was no change in the proportion exceeding the single occasion risk guideline.
- Young adults were drinking less—a significantly lower proportion of people aged 18-24 years consumed five or more standard drinks monthly (from 47% in 2013 to 42% in 2016).
- Although the proportion using any illicit drug did not significantly increase from 2013 to 2016, there has been a gradual increase in use since 2007 (from 13.4% to 15.6% of the total population) and the number of people illicitly using drugs has increased from about 2.3 million to 3.1 million.

Table 1: Summary of drug use, by age, for Australian population 2016 (per cent)

	14–19 yr	20–29 yr	30–39 yr	40–49 yr	50–59 yr
Daily smoker	3.0#	14.8	14.0	16.9	14.3
Monthly risk of single occasion harm from alcohol	18#	39.9	31.1	29.7	24.6
Any illicit use in previous 12 months	15.9	28.2	18.1	16.2#	11.7
Marijuana/cannabis in previous 12 months	12.2	22.1	12.7	10.7	7.2
Ecstasy in previous 12 months	3.2	7	2.6	1.0	0.4*
Cocaine in previous 12 months	1.0*	6.9	4.6#	2.2	0.5
Meth/amphetamine in previous 12 months	0.8*	2.8#	2.4	2.0	0.6

*Note: * Estimate has a relative standard error of 25% to 50% and should be used with caution. # statistically significant change between 2013 and 2016*

[1] MCDS (Ministerial Council on Drug Strategy) 2011. The National Drug Strategy 2010–2015. Canberra: Commonwealth of Australia

TARGET POPULATIONS

Table 1 (p.2) provided data on the age distribution of the overall population with problematic alcohol and other drug use. The National Drug Survey also identified that some population subgroups are at greater risk of problematic drug use including:

- Use of illicit drugs in the last 12 months was far more common among people who identified as being homosexual or bisexual; ecstasy and meth/amphetamines use in this group was 5.8 times as high as heterosexual people.
- People who live in remote and very remote areas, unemployed people and Indigenous Australians continue to be more likely to smoke daily and use illicit drugs than other population groups.
- The proportion of people experiencing high or very high levels of psychological distress increased among recent illicit drug users between 2013 and 2016—from 17.5% to 22% but also increased from 8.6% to 9.7% over the same period for the non-illicit drug using population (those who had not used an illicit drug in the past 12 months).

An understanding of the population profile for some of these target groups is an important element in planning for the delivery of health care services.

Population growth

The NWMPHN area contains several of the fastest growing Local Government Areas (LGAs) in Australia, such as Hume, Wyndham and Melton (See Mental Health and other Area Profiles for more information). These areas are also earmarked for future expansion as part of Melbourne's Western Growth Corridor. Continued rapid growth in population, particularly in the younger age brackets, indicates that alcohol and other drug use and misuse could be an ongoing and growing issue.

Figure 1: NWMPHN LGAs Population and growth of 20 to 49yr from 2011 to 2016, and estimated additional persons in 2021

LGA Name		Popn 2011	Popn 2016	Growth 2011-16	% Growth 2011-16	Est. Growth 2016-21	% Growth 2016-21
Victoria		**2,403,959**	**2,659,128**	**255,169**	**10.6**	**102,635**	**3.9**
NWMPHN		**729,794**	**861,190**	**131,396**	**18.0**	**51,305**	**6.0**
Inner City	Maribyrnong (C)	41,599	48,687	7,088	17.0	5,053	10.4
	Melbourne (C)	69,238	102,541	33,303	48.1	7,502	7.3
	Yarra (C)	48,489	56,968	8,479	17.5	- 34	-0.1
Suburban	Brimbank (C)	87,033	91,861	4,828	5.5	-168	-0.2
	Darebin (C)	72,094	78,109	6,015	8.3	4,347	5.6
	Hobsons Bay (C)	39,651	40,785	1,134	2.9	1,241	3.0
	Moonee Valley (C)	51,098	55,424	4,326	8.5	950	1.7
	Moreland (C)	78,906	89,855	10,949	13.9	5,930	6.6
Growth Area	Hume (C)	78,440	92,125	13,685	17.4	5,962	6.5
	Melton (C)	53,834	65,097	11,263	20.9	9,534	14.6
	Wyndham (C)	82,435	110,524	28,089	34.1	9,962	9.0
Peri-Urban	Macedon Ranges (S)	15,835	16,874	1,039	6.6	336	2.0
	Moorabool (S)	11,142	12,340	1,198	10.8	690	5.6

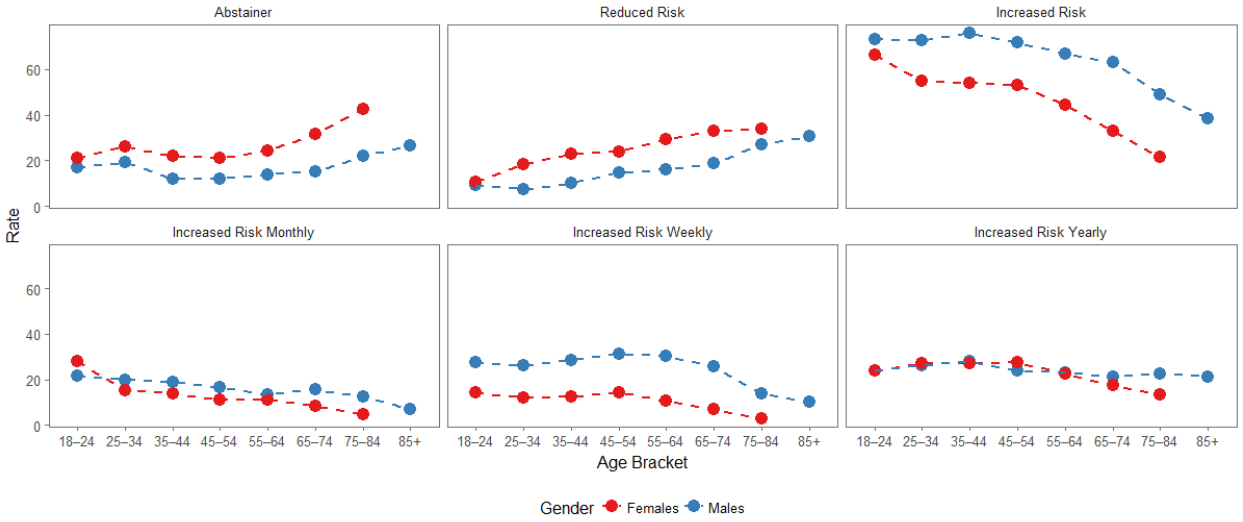
Source: ABS Census 2011, 2016, Victoria In Future 2016 - Victorian DEWLP

Alcohol

Alcohol consumption is common across all age groups, however drinking at risky levels is more common in males and peaks in the 18 to 55 year old segment before declining. Approximately 70 per cent of males and 50 per cent of females in these age groups are drinking at risky levels (Figure 2, below).

The decline in risky drinking is largely related to the decline in the cohort that drinks at risky levels on a weekly basis.

Figure 2: Risk associated with single occasion alcohol consumption by age and gender from the Victorian Population Health Survey 2014.



Adolescents and Young Adults

Adolescence and the transition to adulthood remain important periods of development. During this period, young people undergo major brain development, seek out new experiences with increased risk-taking behavior and encounter stresses such as peer pressure and poor mental health.

Manifestly, these factors make this group susceptible to developing risky alcohol and drug consumption behaviours and the related chronic health conditions.

DETERMINANTS OF ALCOHOL AND OTHER DRUGS USE

Many individual, societal and community factors are key determinants which can influence alcohol and illicit drug use and misuse. Age, gender, employment, social disadvantage and social norms towards alcohol and other drugs are some of the potential influencers.

The relationship between alcohol and other drug use and socio-economic status (SES) is complex and bi-directional.[2.] SES can influence levels of drug use and drug use can in turn affect the status of an individual, reinforcing the adverse effects. For example, drug use can lead to relationship breakdown which could lead to further drug use and then to loss of employment.

Vulnerable populations, such as Aboriginal and Torres Strait Islanders, culturally and linguistically diverse (CALD) and LGBTQI communities may also be additionally exposed to marginalisation, stigma, discrimination and face inequity in their ability to access programs that are culturally sensitive and appropriate.[3]

Individuals from low SES locales are typically more likely to be drinkers and to drink more frequently than higher SES. European research has consistently found that acute and chronic alcohol related harms (including mortality) are more common among disadvantaged individuals[4]. Australian research similarly indicates a disproportionate burden of alcohol-related harms among disadvantaged populations.[5] Lower SES groups may have less access to, or lack awareness of services that provide benefit to alcohol and other drug misuse problems.

Further research has identified Victorians living in regional areas having higher consumption levels for both single occasion and lifetime risk consumption measures[6]

[2] Spooner C, Hetherington K. Social Determinants of Drug Use (Technical Report 228). National Drug And Alcohol Research Centre. UNSW. 2004

[3] Roche A, Kostadinov K, Fischer J, Nicholas R. Evidence Review: The social determinants and inequities of alcohol consumption and alcohol related health outcomes. VicHealth 2015

[4] Alcohol-related mortality as a function of socio-economic status. Addiction. 1999;94(6):867–86.

[5] Increasing socioeconomic inequalities in male cirrhosis of the liver mortality: Australia 1981–2002. Drug and Alcohol Review. 2007;26(3):273–78

[6] Heilbronn C, Matthews S, Lloyd B. Social Determinants, Drinking and Chronic Disease. Turning Point. September 2014

Alcohol

Alcohol has a complex role in Australian society. Most Australians drink alcohol for enjoyment, relaxation and sociability and at levels that cause few adverse effects. However, a substantial proportion of people drink at levels that increase their risk of alcohol-related harm.

In many countries, including Australia, alcohol is responsible for a considerable burden of death, disease and injury. In addition to health risks, the harmful consumption of alcohol inflicts a significant social and economic burden on individuals, families, bystanders and the broader community.

Single Occasion Risky Consumption

High risk single occasion drinking is classified as five or more drinks within one sitting, and is considered an indicator of likelihood for shorter term harm – assault, injuries and acute hospitalisation.

Data from the Victorian Population Health Survey has identified the variation in prevalence across municipalities with:

- High risk single occasion drinking, compared to the rest of Greater Melbourne, is most prominent in Yarra, with elevated levels also observed in Melbourne and Moorabool.[7]
- Yarra and Melbourne, in particular, have thriving night-time economies so there may be a connection between entertainment precincts and higher prevalence.
- Hume and Melton have the lowest levels of risky single occasion drinking within NWMPHN catchment, with Melton and Brimbank displaying proportions of abstainers or ex-drinkers in the highest decile for Greater Melbourne.

Table 2 Proportion of population by LGA with single occasion alcohol consumption (VPHS, 2014)

	LGA Name	Abstainer Rate	Reduced Risk Rate	Increased Risk Rate
Inner City	Maribyrnong (C)	21.3	34.5	42.5
	Melbourne (C)	19.5	32.2	47.7
	Yarra (C)	18.3	25.6	55.1
Suburban	Brimbank (C)	33.0	32.0	33.8
	Darebin (C)	28.1	33.4	37.1
	Hobsons Bay (C)	17.7	35.0	46.2
	Moonee Valley (C)	19.6	38.8	40.4
	Moreland (C)	29.2	26.8	43.8
Growth Area	Hume (C)	31.2	40.0	27.6
	Melton (C)	35.2	35.8	27.5
	Wyndham (C)	25.0	39.3	34.7
Peri-Urban	Moorabool (S)	13.1	32.9	53.7
	Macedon Ranges (S)	22.7	32.1	44.3
Greater Melbourne Metropolitan (LGA Median)		**21.4 (19.5)**	**36.8 (36.2)**	**40.9 (43.6)**
Victoria		**20.8**	**35.8**	**42.5**

[7] http://aodstats.org.au Turning Point supplied from various sources

Lifetime Risky Consumption

High risk lifetime drinking is classified as three or more drinks in one sitting and is considered an indicator associated with longer term alcohol related damage – such as cardiovascular disease, cancer, liver disease and mental health conditions.

The lifetime risk of death from alcohol-related disease more than triples when consumption increases from two to three standard drinks a day. At higher levels of drinking, large differences by gender are seen, with the risk for women being significantly higher than that for men.[8]

Data from the Victorian Population Health Survey has identified the variation in prevalence of lifetime risky drinking across municipalities with higher rates in Melbourne, Yarra and Moorabool (Table 3, below). [9]

Table 3: Proportion of population by LGA with lifetime risk alcohol consumption (VPHS, 2014)

	LGA Name	Abstainer Rate	Reduced Risk Rate	Increased Risk Rate
Inner City	Maribyrnong (C)	21.3	15.6	60.9
	Melbourne (C)	19.5	10.3	69.1
	Yarra (C)	18.3	13.5	64.9
Suburban	Brimbank (C)	33.0	20.7	43.2
	Darebin (C)	28.1	18.1	53.0
	Hobsons Bay (C)	17.7	20.2	60.1
	Moonee Valley (C)	19.6	21.0	57.9
	Moreland (C)	29.2	13.2	57.3
Growth Area	Hume (C)	31.2	19.6	47.0
	Melton (C)	35.2	24.3	38.6
	Wyndham (C)	25.0	22.2	51.7
Peri-Urban	Moorabool (S)	13.1	17.2	68.6
	Macedon Ranges (S)	22.7	16.2	59.3
Greater Melbourne Metropolitan		**21.4**	**19.0**	**58.0**
Victoria		**20.8**	**18.3**	**59.2**

[8] NHMRC. (2009) Australian Guidelines to Reduce Health Risks from Drinking Alcohol

[9] http://aodstats.org.au Turning Point supplied from various sources

Alcohol Societal Harms

Turning Point provides analysis of alcohol related societal harm through examining the consequential assault, road injury and domestic violence. Table 4 provides a summary of the per capita rates by local government area. These data illustrate that overall, the Greater Melbourne Metropolitan area has lower rates than the overall Victorian community.

While the Greater Melbourne area has lower overall rates, some areas have consistently higher rates of assault, road injury and family violence:

- The LGAs with high rates of single occasion drinking, Yarra and Melbourne, possess across the board high levels of alcohol societal harms related to assaults, across high, medium and low alcohol hours (HAH – Friday or Saturday between 8pm and 6am; MAH – Sunday through Thursday between 8pm and 6am; and LAH – On all days between 6am and 8pm) and family violence.
- Raised rates of alcohol related assaults are also prevalent in Hume and Melton.
- Definite and potential alcohol related family violence is elevated in inner western LGA of Hobsons Bay and the growth corridor LGAs of Hume and Melton, as well as the peri-urban municipality of Moorabool.
- Serious road injuries (SRI) during HAH occur at an elevated rate in Melbourne, Yarra and Brimbank as well as the peri-urban municipalities of Macedon Ranges and Moorabool.
- The LGAs with high rates of single occasion drinking, Yarra and Melbourne, have high levels of alcohol societal harms related to assaults and family violence.

Table 4: Rates per 10,000 persons for alcohol related societal harm measures by LGA, 2014-15 (Turning Point)

	LGA Name	Assault HAH	Assault LAH	Assault MAH	SRI HAH	Definite alcohol related Family Violence	Possible alcohol related Family Violence
Inner City	Maribyrnong	6.0	29.2	10.5	2.0	7.6	11.6
	Melbourne	49.3	73.4	34.0	7.1	12.7	14.0
	Yarra	17.7	36.4	16.4	3.9	10.5	13.8
Suburban	Brimbank	9.3	38.6	13.5	4.5	6.0	10.1
	Darebin	6.7	30.8	11.1	2.8	7.9	10.1
	Hobsons Bay	7.1	35.2	12.1	2.7	14.2	12.3
	Moonee Valley	8.0	27.2	9.3	1.9	7.3	7.6
	Moreland	7.5	32.5	11.3	2.6	6.5	7.3
Growth Area	Hume	11.2	41.7	16.5	2.7	7.6	12.3
	Melton	8.8	40.2	12.5	2.9	6.8	15.0
	Wyndham	6.2	28.6	9.5	2.4	6.5	10.1
Peri-Urban	Macedon Ranges	5.4	26.8	6.5	5.6	6.3	6.5
	Moorabool	8.1	23.6	9.1	5.5	14.2	10.7
Greater Melbourne Metropolitan		**7.5**	**27.1**	**9.4**	**2.7**	**7.8**	**10.1**
NWMPHN (Derived Estimate)		**9.1**	**27.5**	**10.5**	**3.3**	**8.2**	**11.0**
Victoria		**9.3**	**32.8**	**12.1**	**3.3**	**11.3**	**12.2**

Note: HAH= High Alcohol Hours; LAH= Low Alcohol Hours; SRI=serious road injury

SERVICE RESPONSE

Information on the usage of services for alcohol and drug issues is available from three key sources:

- Ambulance service data: provides information on the frequency and location of ambulance attendances, by location of the incident.
- Hospitalisation: provides information on the frequency and location of hospital admissions for specific alcohol and drug reasons, by residential location of the patient.
- Alcohol and Drug Information System (ADIS): this is the primary source of data for a number of State funded alcohol and drug treatment service programs including Alcohol and other Drug Treatment Services, Alcohol and other Drug Primary Health Services, and the Drink Driver Education Program.

Alcohol

Ambulance attendance rates are very high within inner city LGA's, and mildly elevated in the suburban LGAs. This is considered to be related to the large number of nightclubs, hotels and other licensed venues in these areas.

ADIS episodes from Maribyrnong and Yarra are in the second highest decile for Greater Melbourne LGAs with Moreland also elevated. Alcohol related hospitalisations are low to very low across the catchment except for Yarra.

With consideration of the geographical distribution of existing alcohol counselling and harm reduction services and the high societal harm event rates, Melbourne and Yarra are in greatest need with the inner suburban LGAs of Darebin, Moreland and Maribyrnong also likely to require a greater level of service.

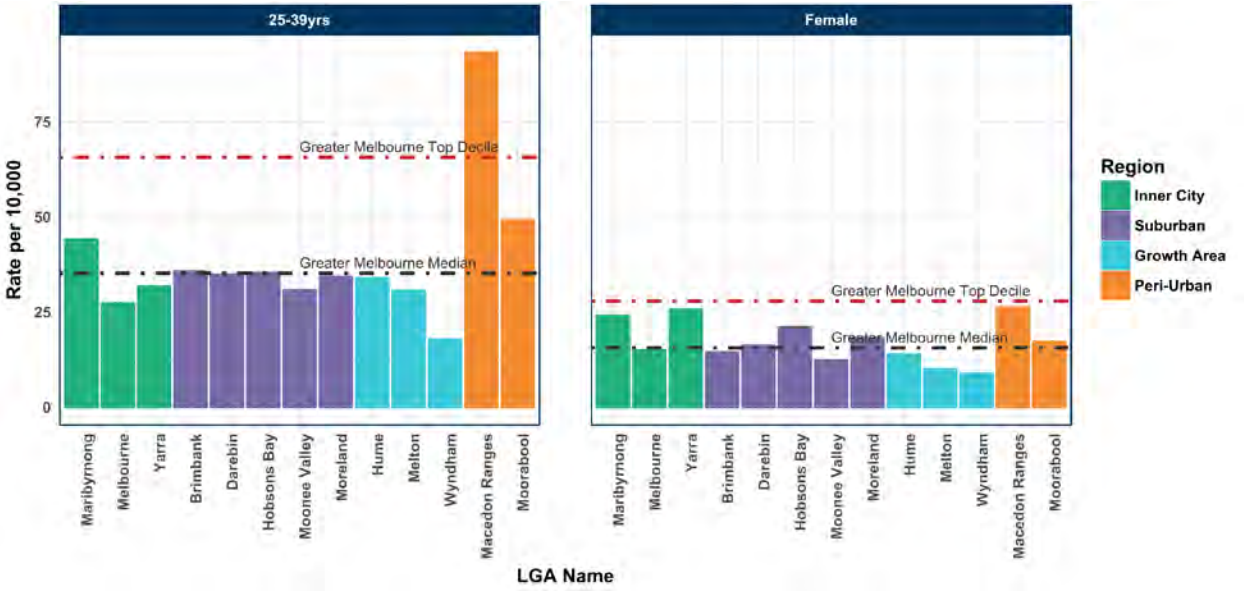
Interestingly, Brimbank, Darebin and Moreland have elevated ADIS episode rates but relatively low risk profile of lifetime and single occasion risk drinking behaviour. An explanation for this observation could be increased community willingness to seek or direct person to help coupled with presence and community awareness of therapeutic services.

Table 5: Rates per 10,000 persons for alcohol related ADIS episodes, hospitalisations and ambulance attendances, 2014-15 (Turning Point)

	LGA Name	ADIS	Hospital Admission	Intoxication-Ambulance	Alcohol Only - Ambulance
Inner City	Maribyrnong	34.8	51.1	49.7	42.3
	Melbourne	25.2	51.9	177.2	158.0
	Yarra	40.9	74.3	79.2	64.5
Suburban	Brimbank	26.3	38.3	28.7	23.9
	Darebin	26.2	41.0	30.4	24.5
	Hobsons Bay	23.5	48.6	32.4	27.4
	Moonee Valley	20.6	44.4	35.6	29.7
	Moreland	29.8	39.8	32.2	25.9
Growth Area	Hume	23.1	29.2	26.5	21.6
	Melton	20.9	28.1	25.7	20.7
	Wyndham	17.7	24.5	21.0	17.0
Peri-Urban	Macedon Ranges	27.1	30.9	18.3	14.3
	Moorabool	18.6	36.2	25.2	17.5
Greater Melbourne Metropolitan		**23.3**	**56.4**	**36.9**	**30.7**
Victoria			**55.0**	**37.0**	**30.7**

Further analysis of the ADIS referral rates uncovers an extremely high referral rate in the 25-39 yrs category within Macedon Ranges, more than double most other LGAs. (Figure 3) Additionally, a major contributor to this appears to originate from female referrals within the region, with the rate for female ADIS referral within Macedon Ranges close to the top decile for Greater Melbourne LGAs, while the male rate is just above median. (see Figure 4 in Appendix)

Figure 3: ADIS episodes of care rates per 10,000 population for alcohol, aged 25-39 years (2014-15)



Illicit drugs

Per capita rates of illicit drug ADIS referrals and ambulance attendances are high across the urban LGAs, with Maribyrnong and Yarra in the highest decile for ADIS referrals, while ambulance attendances due to illicit drugs is the highest in Melbourne and Yarra.

In contrast to the alcohol geographic distribution, the growth area municipalities of Melton, Hume and Wyndham display above median rates of ADIS referral. Taking the forecast population growth into consideration, these areas would be expected to provide a continued high demand for drug therapy services.

Table 6: Rates per 10,000 persons for any illicit drug related ADIS referrals, hospitalisations and ambulance attendances, 2014-15 (Turning Point)

	LGA Name	Illicit (any) ADIS	Illicits (any) Ambulance	Illicits (any) Hospital
Inner City	Maribyrnong	55.7	33.7	27.4
	Melbourne	35.5	74.1	29.6
	Yarra	74.8	71.3	27.4
Suburban	Brimbank	50.9	20.4	28.8
	Darebin	40.9	21.9	22.0
	Hobsons Bay	41.2	15.9	22.1
	Moonee Valley	33.9	16.7	22.1
	Moreland	42.9	15.2	23.1
Growth Area	Hume	41.6	12.8	18.8
	Melton	48.3	12.9	20.4
	Wyndham	36.2	10.0	14.3
Peri-Urban	Macedon Ranges	17.6	4.9	13.6
	Moorabool	18.0	9.7	18.4
Greater Melbourne Metropolitan		33.0	16.7	26.1
Victoria		-	15.5	25.3

Amphetamines and Crystal Methamphetamine

There is growing public awareness and alarm regarding the use of amphetamines and crystal methamphetamine ('ice'). Meth/amphetamine has overtaken excessive drinking of alcohol as the drug of most concern to Australians.[10] The areas of Melbourne and Yarra have very high ambulance attendance rates related to meth/amphetamines, possibly due to the presence of night time recreation and entertainment venues in these areas.

Hume and Melton pose current and future challenges with elevated ADIS referral and ambulance attendance rates, coupled with a large existing population and rapid projected growth. Meth/amphetamine is responsible for almost half the illicit drug referrals from these regions.[11]

Brimbank, Maribyrnong and Moreland also have ADIS referral rates in the third highest decile of Greater Melbourne LGAs.

Table 7: Rates per 10,000 persons for meth/amphetamine related ADIS referrals and ambulance attendances, 2014-15 (Turning Point)

	LGA Name	Amphetamines ADIS	Amphetamines Ambulance	Crystal Methamphetamine Ambulance
Inner City	Maribyrnong	17.5	7.9	6.6
	Melbourne	11.2	17.8	12.4
	Yarra	25.6	11.4	8.7
Suburban	Brimbank	17.8	7.2	5.9
	Darebin	14.1	7.0	5.2
	Hobsons Bay	12.8	4.6	3.8
	Moonee Valley	15.0	6.8	4.9
	Moreland	20.1	5.7	4.5
Growth Area	Hume	20.0	6.0	5.0
	Melton	21.2	5.6	4.2
	Wyndham	16.2	4.2	3.5
Peri-Urban	Macedon Ranges	6.9	2.0	1.8
	Moorabool	8.9	4.2	3.2
Greater Melbourne Metropolitan (LGA Median)		12.9 (13.1)	5.3 (4.2)	4.1 (3.4)
Victoria		-	4.9	3.9

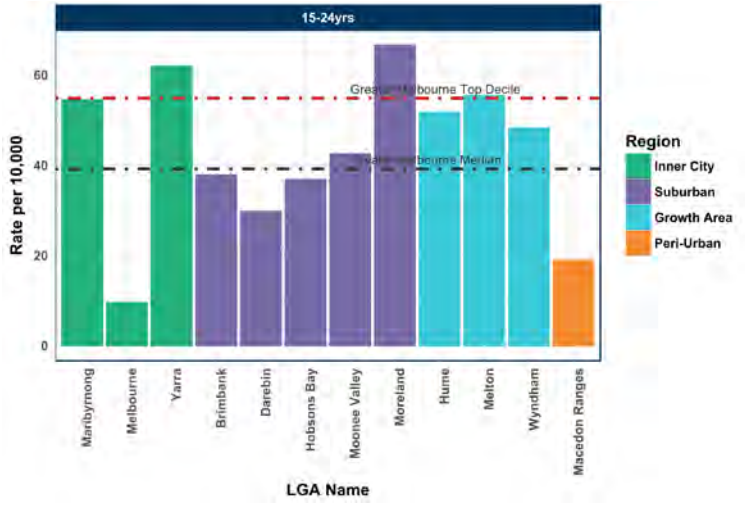
Analysing the segments that contribute to amphetamine ADIS referrals shows the main source to be in the 15-24 yr age category (see Figure 9 in Appendix for other segments). The 15-24 yr age group findings largely reflect the overall distribution as displayed in Figure 4 (p.14), although Moreland has extremely high rates within the 15-24 yr age bracket, well above Yarra, Maribyrnong and Melton which are also within the top decile for Greater Melbourne LGAs.

The age distribution in Melbourne is heavily skewed towards a younger population, in particular the 25-39 yr age group, so the referral rates within the 14-24 yr age bracket for Melbourne need to be interpreted with caution.

[10] https://www.aihw.gov.au/reports/illicit-use-of-drugs/ndshs-2016-key-findings/contents/illicit-use-of-drugs

[11] http://aodstats.org.au Turning Point supplied from various sources

Figure 4: ADIS episodes of care rates per 10,000 population for amphetamines, aged 14-24 years (2014-15)



Heroin

Heroin service usage is predominantly centred on known hotspots of Yarra and Maribyrnong, with Yarra displaying ADIS episode of care rates almost five times the Victorian rate and over 10 times for the ambulance attendance rate. Maribyrnong has more than triple the Victorian ADIS referral rate and four times the Victorian ambulance attendance rate.[12]

Brimbank, Darebin and Hobsons Bay also reported well above the Greater Melbourne median with rates in the third highest decile for ADIS referrals and overdose related ambulance attendance. Brimbank is more than double the Victorian rates.

The announcement of the initial two-year trial of a medically supervised injecting room at the North Richmond Community Health Centre is a key initiative aimed at reducing the large number of overdoses and ambulance attendances in the North Richmond (Yarra LGA) area.[13]

The ADIS heroin episode of care rate for 40-64 year old's display a somewhat discordant pattern to the 25-39 year picture specifically, Maribyrnong and Brimbank. While Yarra has extremely high rates across both age brackets, Maribyrnong and Brimbank show substantial drop offs in the older age bracket. Maribyrnong remains very high at half the rate of Yarra, whereas Brimbank declines from the highest rate in the younger age bracket to almost median in the older age group. (Figure 5, p.15)

The age distribution in Melbourne is heavily skewed towards a younger population, in particular the 25-39 year age bracket, so the referral rates within this age bracket for Melbourne need to be interpreted with caution.

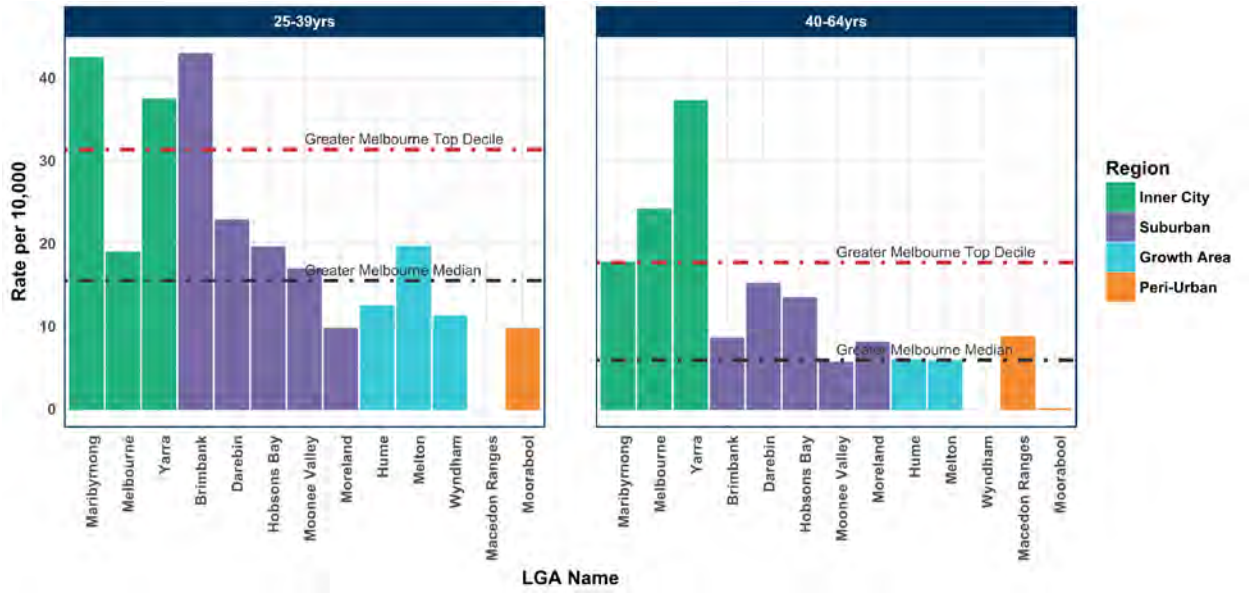
[12] http://aodstats.org.au Turning Point supplied from various sources

[13] https://www.premier.vic.gov.au/more-rehab-beds-better-treatment-and-safer-streets/

Table 8: Rates per 10,000 persons for heroin related ADIS referrals, hospitalisations and ambulance attendances, 2014-15 (Turning Point)

	LGA Name	Heroin ADIS	Heroin Overdose Ambulance	Other Heroin Ambulance	Heroin Hospital
Inner City	Maribyrnong	21.9	10.4	7.3	21.9
	Melbourne	12.8	6.0	10.0	12.8
	Yarra	29.7	26.5	22.8	29.7
Suburban	Brimbank	14.6	5.5	4.6	14.6
	Darebin	11.5	4.0	3.6	11.5
	Hobsons Bay	9.6	2.2	2.2	9.6
	Moonee Valley	6.3	2.3	3.0	6.3
	Moreland	6.0	0.7	1.8	6.0
Growth Area	Hume	5.1	0.7	0.8	5.1
	Melton	8.4	0.7	1.7	8.4
	Wyndham	4.2	0.9	0.9	4.2
Peri-Urban	Macedon Ranges	4.3	NA	0.0	4.3
	Moorabool	1.7	NA	NA	1.7
Greater Melbourne Metropolitan		5.6	2.4	2.5	0.4
Victoria			1.9	3.9	0.4

Figure 5: ADIS episodes of care rates per 10,000 population for heroin, aged 25-39 and 40-64 years (2014-15)



Cannabis

Cannabis continues to be the most widely used illicit drug, with approximately 10 per cent of the Australian population using the drug in the previous 12 months.[14] While it is often thought of as relatively harmless, there are many serious mental health problems that can be exacerbated or caused by cannabis usage.[15]

The population of the NWMPHN catchment has higher than average cannabis usage across most LGAs for ADIS episodes of care except for the peri-urban regions of Macedon Ranges and Moorabool.[16]

Table 9: Rates per 10,000 persons for cannabis related ADIS referrals, hospitalisations and ambulance attendances (2014-15)

	LGA Name	Cannabis ADIS	Cannabis Ambulance	Cannabis Hospital
Inner City	Maribyrnong	15.4	6.5	8.6
	Melbourne	10.7	11.2	6.1
	Yarra	18.7	7.1	7.9
Suburban	Brimbank	17.6	4.2	9.6
	Darebin	14.0	5.6	7.3
	Hobsons Bay	18.0	5.1	7.4
	Moonee Valley	11.8	4.6	7.7
	Moreland	16.1	4.2	7.0
Growth Area	Hume	14.8	4.3	6.8
	Melton	18.0	3.7	6.2
	Wyndham	15.2	3.6	5.5
Peri-Urban	Macedon Ranges	6.2	2.0	7.2
	Moorabool	7.1	2.6	7.4
Greater Melbourne Metropolitan		**12.3**	**4.3**	**8.0**
Victoria			**4.5**	**8.2**

Cannabis referrals are concentrated in the 15-24 years age bracket and in males (see Figure 11 in Appendix). The referral rates from Melton, Hobsons Bay and Wyndham are high, while Yarra is relatively under-represented within this age group compared to others.

[14] https://www.aihw.gov.au/reports/illicit-use-of-drugs/ndshs-2016-key-findings/contents/illicit-use-of-drugs
[15] https://www.healthdirect.gov.au/marijuana-and-mental-health
[16] http://aodstats.org.au Turning Point supplied from various sources

Pharmaceuticals

In the context of illicit drug use, a pharmaceutical is *'a drug that is available from a pharmacy, over-the-counter or by prescription, which may be subject to misuse'*.[17]

Misuse includes use for non-medical purposes or in doses or frequencies other than those prescribed. In terms of recent use (last 12 months), pain-killers/opiates were the second most commonly used drug after cannabis at 3.6 per cent of the population.[18]

Interestingly, the pattern of pharmaceutical misuse differs from other illegal illicit drugs. The inner city LGAs of Melbourne, Yarra and Maribyrnong continue to display ADIS episode rates and ambulance attendance rates in the highest two deciles for Greater Melbourne LGAs. This is not reflected in Brimbank which has elevated illicit demand for therapeutic services but low demand for pharmaceutical therapeutic services.[19]

Additionally, Moonee Valley, Moreland and Darebin exhibit high service usage for pharmaceutical misuse.

Table 10: Rates per 10,000 persons for pharmaceutical related ADIS episodes, hospitalisations and ambulance attendances (2014-15)

	LGA Name	Pharmaceuticals (any) ADIS	Pharmaceuticals (any) Ambulance	Pharmaceuticals (any) Hospital
Inner City	Maribyrnong	6.1	19.4	12.3
	Melbourne	3.1	26.2	20.1
	Yarra	4.0	26.1	17.0
Suburban	Brimbank	2.8	15.2	10.7
	Darebin	3.2	18.0	16.1
	Hobsons Bay	2.1	14.7	12.4
	Moonee Valley	3.7	14.2	16.5
	Moreland	3.2	15.5	15.5
Growth Area	Hume	2.8	16.6	11.1
	Melton	2.7	18.7	13.0
	Wyndham	1.8	12.7	10.1
Peri-Urban	Macedon Ranges	2.2	11.9	7.6
	Moorabool	NA	19.7	10.4
Greater Melbourne Metropolitan		**2.8**	**16.4**	**16.2**
Victoria			**17.0**	**16.1**

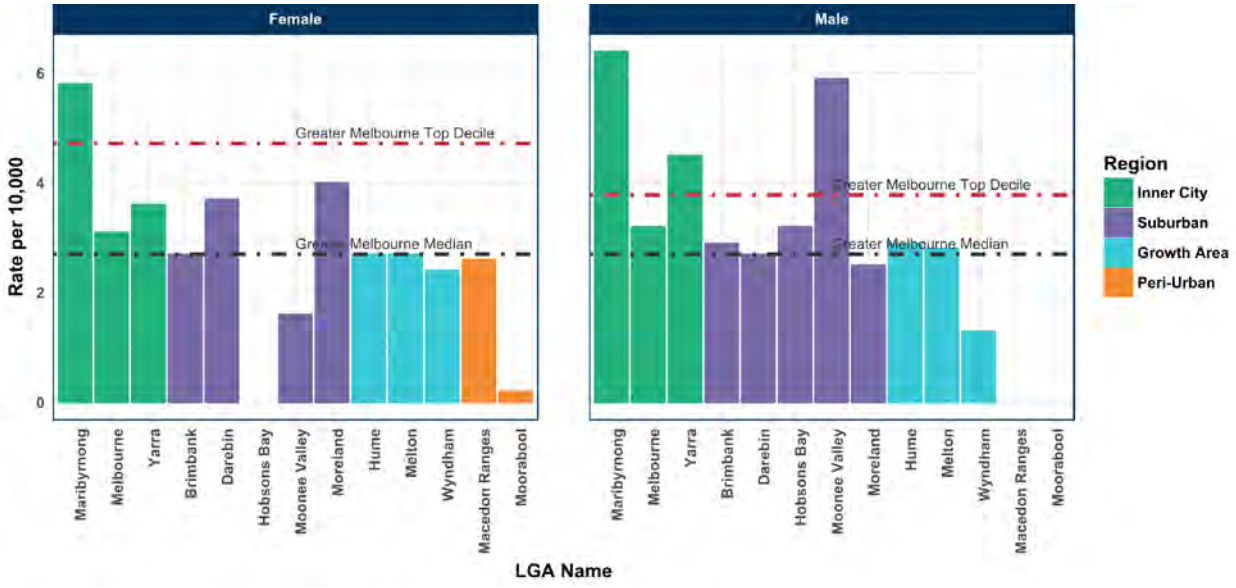
Segmenting the referrals by gender displays a variation that is most noticeable within Yarra and Moonee Valley. Maribyrnong exhibits extremely high rates across both genders, while Yarra and Moonee Valley display relatively higher rates (top decile) for males and only mildly elevated rates for females (Figure 6, p.18).

[17] http://www.nationaldrugstrategy.gov.au

[18] https://www.aihw.gov.au/reports/illicit-use-of-drugs/ndshs-2016-key-findings/contents/illicit-use-of-drugs

[19] http://aodstats.org.au Turning Point supplied from various sources

Figure 6: ADIS episodes of care rates per 10,000 population for pharmaceuticals, sex and LGA (2014-15)



Opioids

Opioid dependence is a chronic, relapsing condition that requires long-term treatment. Treatment is tailored to a person's individual circumstances, and treatment types may be combined (for example, opioid pharmacotherapy combined with counselling) or varied over time.[20.]

Analysis of PBS and other data[21] suggests that prescriptions for oxycodone are increasing in Australia, predominantly for low-dose formulations, and for older patients. However, increased availability is linked to increased misuse, medical emergencies and poisoning death.

Elevated ADIS referral rates compared to Greater Melbourne LGAs are widespread throughout the NWMPHN region (Table 11, below). With the exceptions of Hume and notably Melbourne, all other LGAs are above the median rates for Greater Melbourne LGAs. Maribyrnong displays an ADIS referral rate and hospitalisation in the highest 2 deciles.

Table 11: Rates per 10,000 persons for opioid related ADIS episodes of care, hospitalisations and amb. attendances (2014-15)

	LGA Name	Opioids ADIS	Opioids Ambulance	Opioids Hospital
Inner City	Maribyrnong	4.4	1.3	11.9
	Melbourne	1.2	2.4	11.4
	Yarra	3.1	2.1	11.2
Suburban	Brimbank	1.8	1.7	10.2
	Darebin	1.7	1.9	6.6
	Hobsons Bay	1.6	1.3	5.8
	Moonee Valley	1.7	1.6	7.7
	Moreland	2.3	1.2	8.1
Growth Area	Hume	1.1	1.9	4
	Melton	1.9	2.1	5.5
	Wyndham	1.5	1.4	3.6
Peri-Urban	Macedon Ranges	1.3	NA	3.1
	Moorabool	NA	1.6	3.2
Greater Melbourne Metro (Median LGA)		**1.0 (1.4)**	**1.7 (1.6)**	**8.0 (7.6)**
Victoria			**1.9**	**7.3**

While the overall per capita rates are low in comparison to alcohol and other illicit drugs, there are growing concerns regarding the impact of opioid misuse in that:

- Roughly 25 per cent of patients prescribed opioids for chronic pain misuse them.
- Approximately 10 per cent develop an opioid use disorder.
- About 80 per cent of people who use heroin first misused prescription opioids.[22]

Recent initiatives from the Victorian and Australian governments are aimed at reducing the scale and impact of pharmaceutical opioid misuse. These include implementing a real-time prescription monitoring program in Victoria[23] and changes announced by the Therapeutic Goods Administration that will result in medicines containing codeine only being available by prescription only from February 2018.[24]

[20] NDARC (National Drug and Alcohol Research) 2004. Treatment options for heroin and other opioid dependence: a guide for frontline workers. Canberra: DoHA for the National Drug Strategy

[21] Roxburgh A, Bruno R, Larance B et al. 2011. Prescription of opioid analgesics and related harms in Aust. MJA 195(5):280-84

[22] https://www.drugabuse.gov/drugs-abuse/opioids/opioid-crisis

[23] https://www2.health.vic.gov.au/public-health/drugs-and-poisons/real-time-prescription-monitoring

[24] https://www.tga.gov.au/final-decision-re-scheduling-codeine-frequently-asked-questions

Figure 7: ADIS episodes of care rates per 10,000 population for alcohol, aged 15-64 years, sex (2014-15)

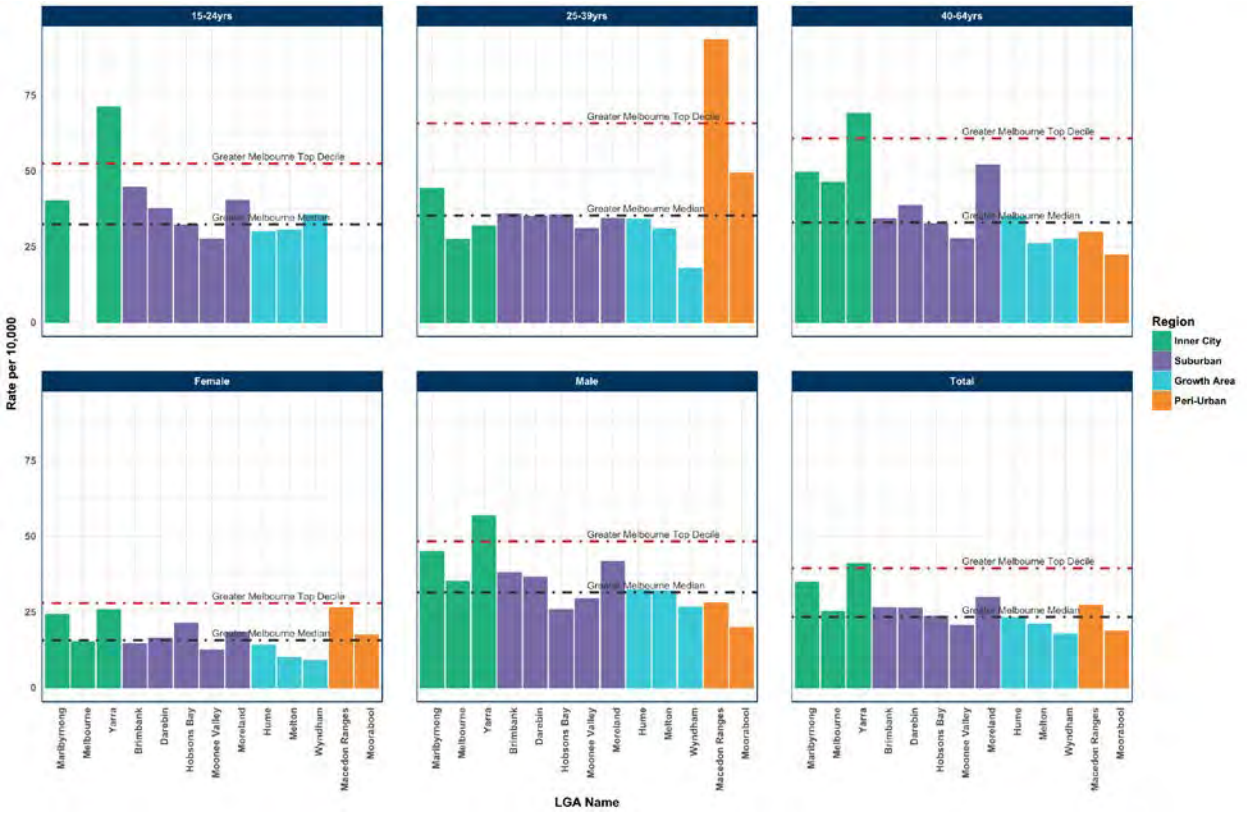


Figure 8: ADIS episodes of care rates per 10,000 population for illicit drugs, aged 15-64 years, sex (2014-15)

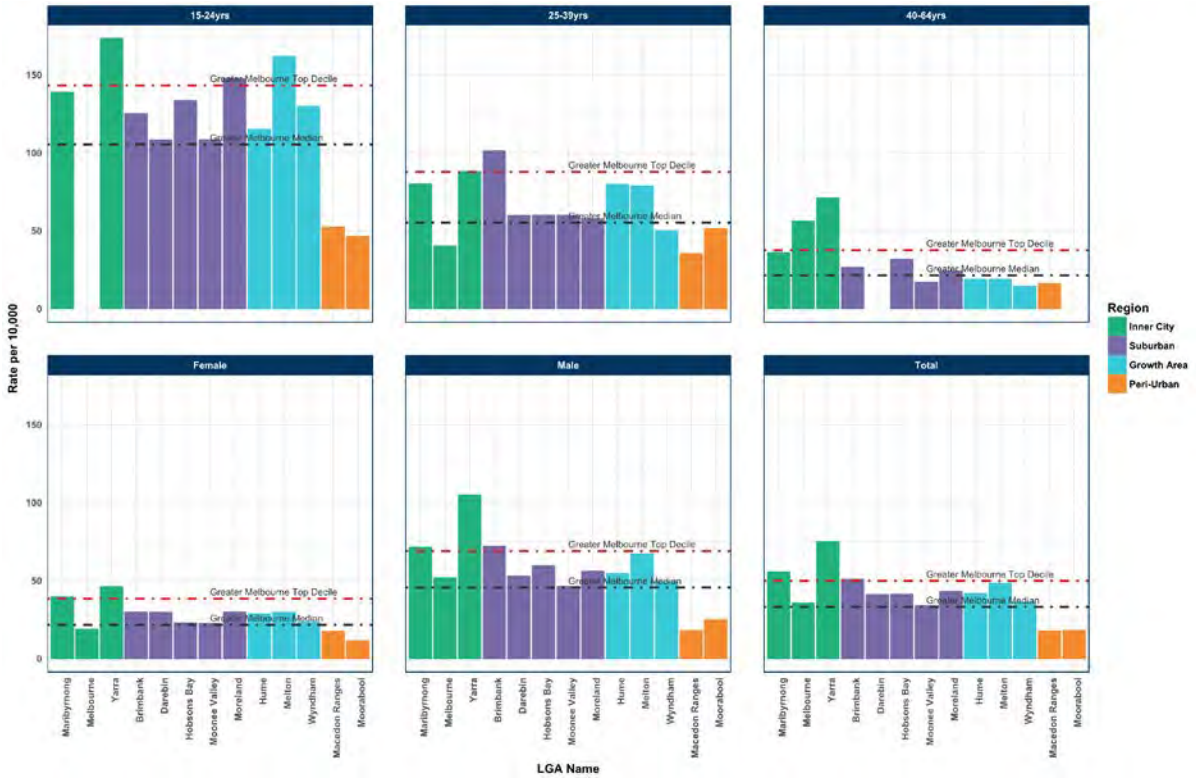


Figure 9: ADIS episodes of care rates per 10,000 population for amphetamines, aged 15-64 years, sex (2014-15)

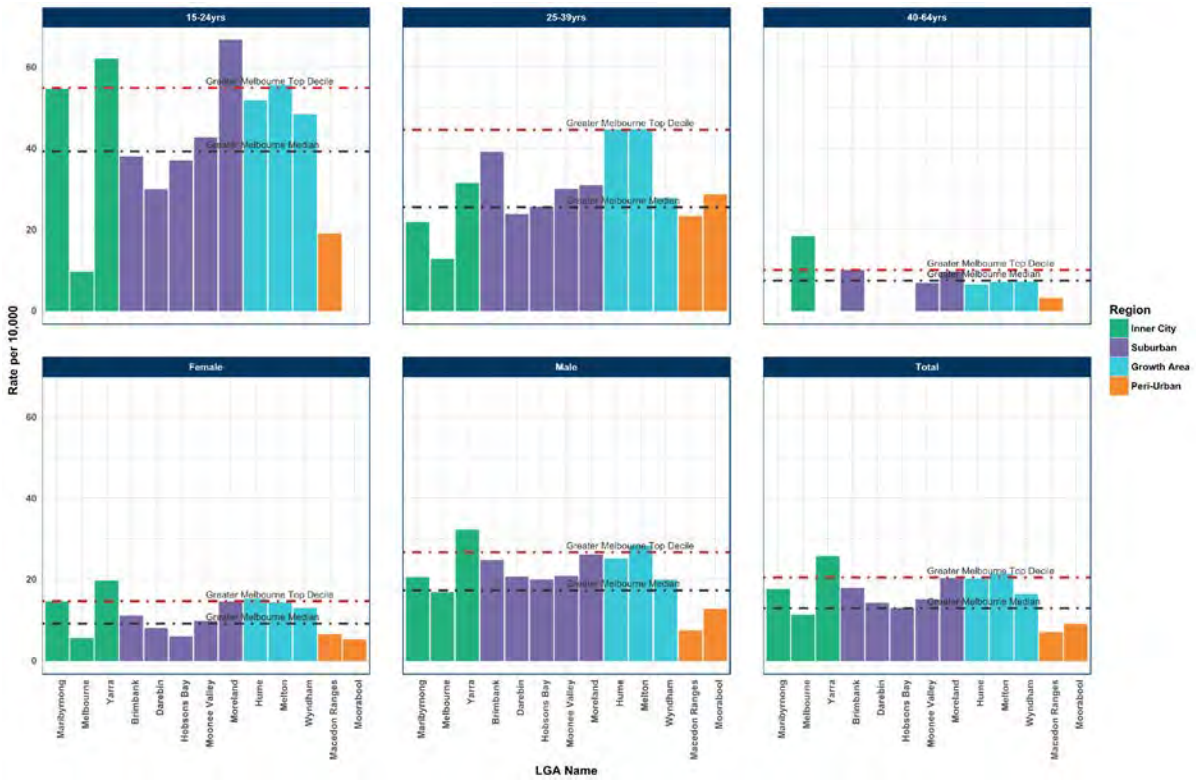


Figure 10: ADIS episodes of care rates per 10,000 population for heroin, aged 15-64 years, sex (2014-15)

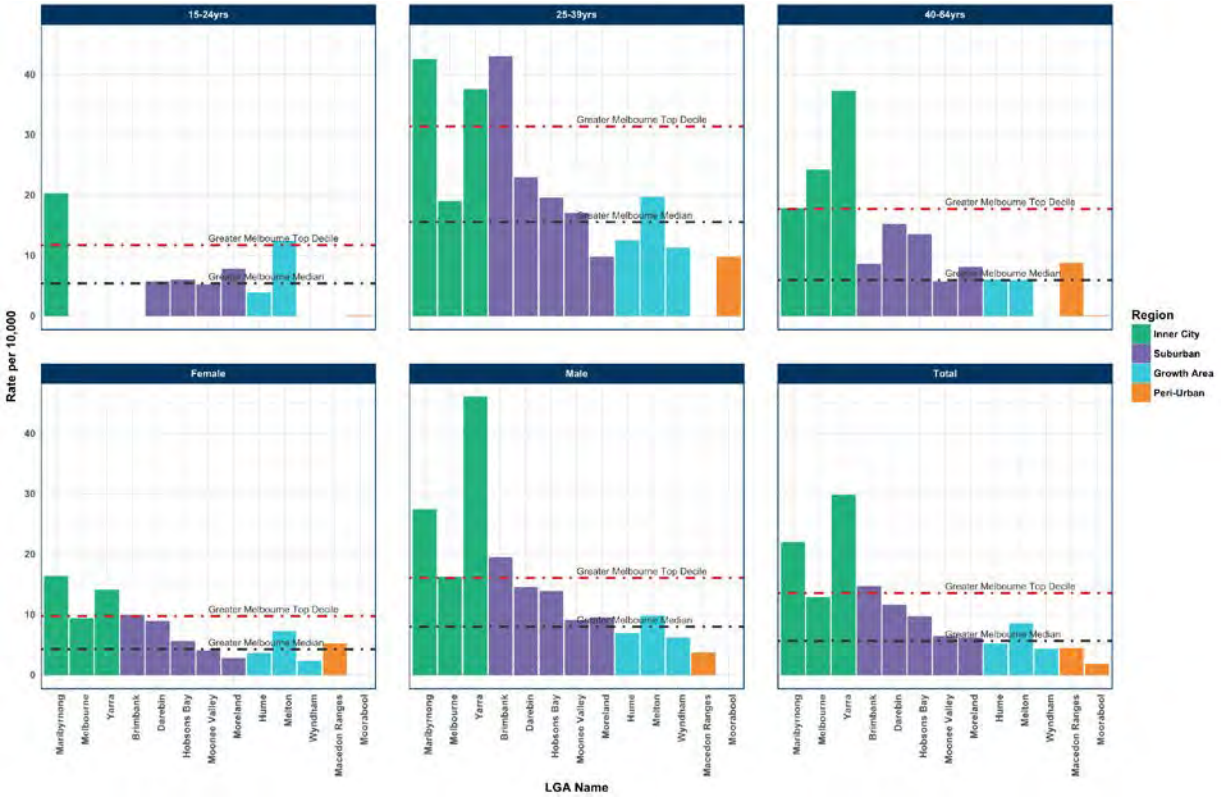


Figure 11: ADIS episodes of care rates per 10,000 population for cannabis, aged 15-64 years, sex (2014-15)

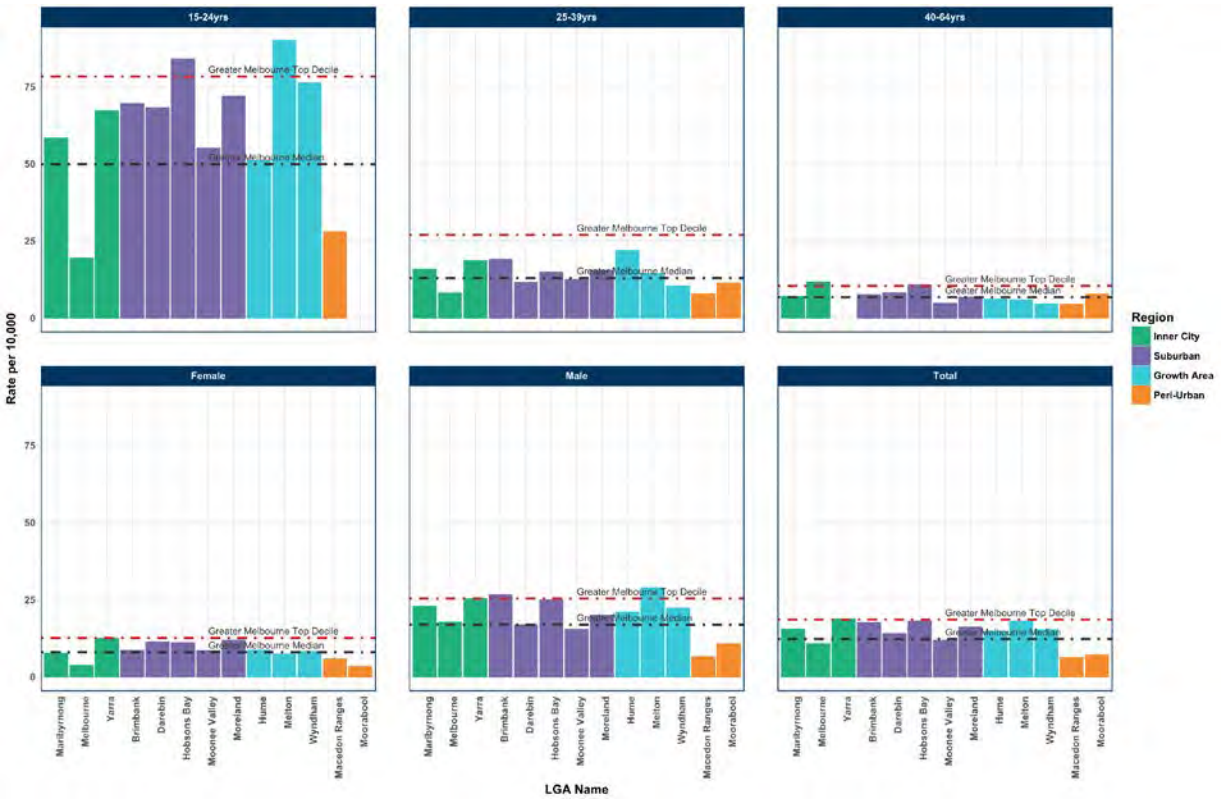


Figure 12: ADIS episodes of care rates per 10,000 population for pharmaceuticals, aged 15-64 years, sex (2014-15)

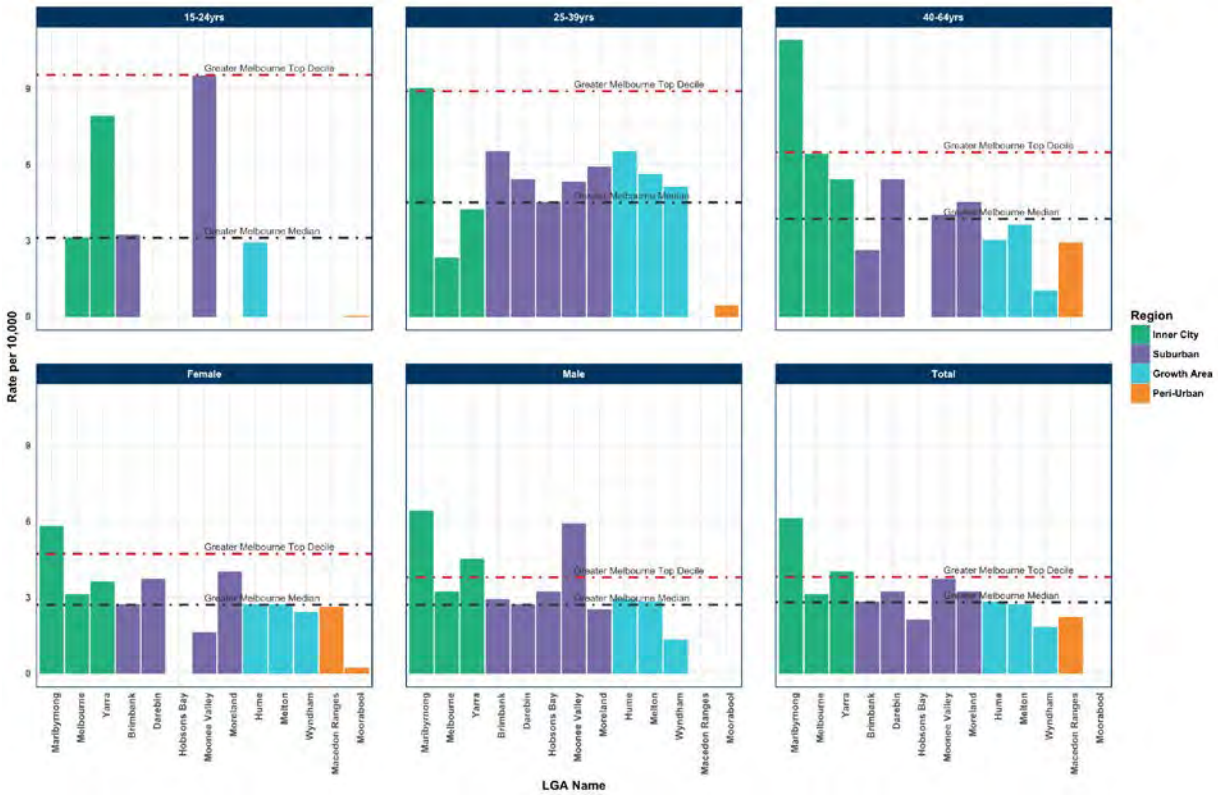
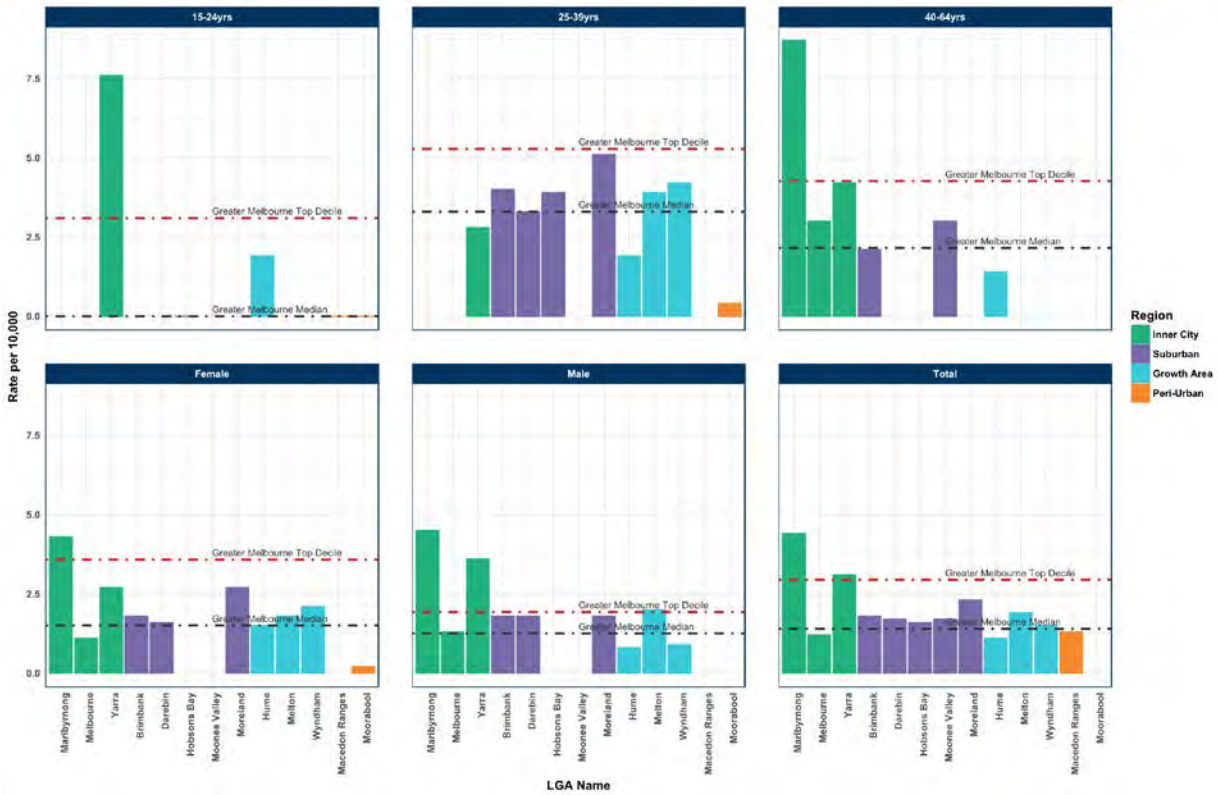


Figure 13: ADIS episodes of care rates per 10,000 population for opioids, aged 15-64 years, sex (2014-15)



ABORIGINAL AND TORRES STRAIT ISLANDER AREA PROFILE

SUMMARY

- The NWMPHN area is experiencing notable change in the number and location of Aboriginal and Torres strait Islander families. Victoria is projected to be the second fastest growing state in Aboriginal population by 2026.
- Moorabool and Darebin Local Government Areas (LGAs) have the highest proportion of Aboriginal people to non-Aboriginal people, but the largest overall number of Aboriginal people live in Wyndham, Brimbank and Hume.
- Almost half of the Aboriginal population in the NWMPHN region is under 25 years old.
- Admission rates due to mental health issues were 1.5 to 4.3 times higher for Aboriginal people than for all people across NWMPHN.
- Age standardised admission rates due to circulatory and digestive system issues were lower for Aboriginal people compared to all people across NWMPHN.
- Aboriginal mothers in NWMPHN were three times more likely to smoke during pregnancy than all mothers (30.4% vs 10.9%).
- At age 5, Aboriginal children had a higher average percent immunisation rate compared to all children (95.6% vs 93.2%).
- Aboriginal mother and child consultations average participation rates were lower than all mother and child consultations average participation rates.
- The Aboriginal unemployment rate in NWMPHN is 1.7 times higher than that for all people in the NWMPHN.
- Brimbank is the most disadvantaged LGA in NWMPHN for socioeconomic outcomes, for both Aboriginal and non-Aboriginal people. In general, median individual and household weekly income is lower for Aboriginal people than non-Aboriginal people.
- A high proportion of Aboriginal offenders were young (10-19 years), while non-Aboriginal offenders were most likely to be adults (25-39 years).
- Approximately double the number of Aboriginal people smoke compared to non-Aboriginal people across the LGAs in NWMPHN.

ACRONYMS

ABS - Australian Bureau of Statistics

ASR - Age Standardised Rates

DALY - Disability-adjusted life years, sum of years of healthy life lost (YLL) due to premature mortality and years of productive life lost due to disability (YLD)

IARE - Indigenous Regions. These are medium sized geographical units created by aggregating one or more ILOCs.

ILOC - Indigenous Locations. These are aggregates of one or more SA1s.

NWMPHN - North Western Melbourne Primary Health Network

PINIRSEO - Pooled Aboriginal and non-Aboriginal Relative Socioeconomic Outcomes

YLD - Years lived with disability measure of productive life lost due to disability.

YLL - Years of life lost, measure in years lost due to premature death before life expectancy

ANALYSIS NOTES

Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

NOTE ON METHODOLOGY

Various data sources have been used to compile this report. These data sources do not always use the same boundaries and in some cases assumptions have been made to estimate data for NWMPHN. Data sources include:

- PATCAT data: aggregated data collated in-house by the PHN from a subset of GP clinics that are registered and that are submitting data. These clinics represent 25 per cent of the GPs in the NWMPHN region.
- Victorian Aboriginal Health Services (VAHS) data: aggregated data collected in-house from a subset of VAHS clinics and summarised by Erin Manderson. Thanks to VAHS and Erin Manderson for providing the data to NWMPHN.
- POLAR Explorer tools: an easy-to-use web-based interface that allows health data to be analysed instantly.

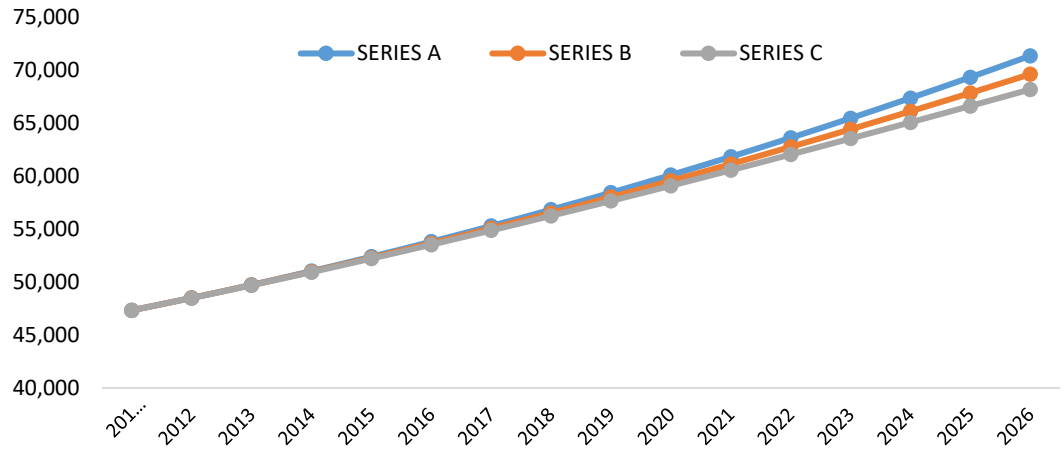
NOTE: The boundaries of NWMPHN LGAs and NWMPHN IAREs do not align, and therefore the report compares Aboriginal and total population for the Greater Melbourne area where available, or Aboriginal and total population for Victoria.

ABOUT ABORIGINAL AND TORRESS STRAIT ISLANDERS

Currently, the Aboriginal and Torres Strait Islander population makes up 2.8 percent of the total Australian population.[1] Even though the Aboriginal population in NWMPHN and Victoria (0.6 per cent and 0.85 per cent respectively) is substantially smaller, Aboriginal people have a deep and continuous connection to both Victoria and the NWMPHN region, evidenced by the number of state-wide cultural heritage places. Throughout this document the term 'Aboriginal' is respectfully used to refer to both Aboriginal and Torres Strait Islander peoples.

Per the Australian Bureau of Statistics (ABS), the Aboriginal population is projected to increase by over a third by 2026. In Victoria alone, the average annual growth rate of around 2.5% to 2.8% is projected to be the second fastest compared with other states and territories, following ACT (between 2.8% and 3.1%).[2] Due to future uncertainties, it is preferable to provide a range of possible outcomes.

Figure 1: Victoria Aboriginal population projections, 2014, data from ABS



POPULATION (NWMPHN)

The Aboriginal population in NWMPHN was estimated to be 10,144 at the 2016 Census. This is 0.6 per cent of the total NWMPHN population, a smaller proportion than the total Victorian rate of 0.85 per cent.

Among the 13 LGAs in NWMPHN Moorabool has the highest population proportion of Aboriginal residents compared to non-Aboriginal (1.1 per cent), followed by Melton (0.9 per cent).

The LGAs with the highest number of Aboriginal people are Wyndham, Hume and Melton. This profile of location is a meaningful change in 2016, from the longstanding profile of Darebin as the municipality with the highest number of Aboriginal persons. This results in these growth areas being the location of 44 per cent of the regions Aboriginal people (Table 1).[3]

Table 1: Estimated Aboriginal resident population of each NWMPHN LGA.

Region	LGA name	2011 popn.	2016 popn.	% 2016 LGA popn.	% of NWMPHN 2016	Growth 2011-2016	% growth 2011-2016
Inner city	Maribyrnong (C)	324	429	0.5%	4.2%	105	32%
	Melbourne (C)	262	471	0.3%	4.6%	209	80%
	Yarra (C)	318	386	0.4%	3.8%	68	21%
Suburban	Brimbank (C)	700	818	0.4%	8.1%	118	17%

[1] Statistics, A.B.o., 2076.0 - Census of Population and Housing: Characteristics of Aboriginal and Torres Strait Islander Australians. 2016

[2] Statistics, A.B.o., Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026. 2014, ABS: Australia.

[3] Statistics, A.B.o., *Census*. 2016.

Region	LGA name	2011 popn.	2016 popn.	% 2016 LGA popn.	% of NWMPHN 2016	Growth 2011-2016	% growth 2011-2016
	Darebin (C)	1,156	1,167	0.8%	11.5%	11	1%
	Hobsons Bay (C)	393	490	0.6%	4.8%	97	25%
	Moonee Valley (C)	315	430	0.4%	4.2%	115	37%
	Moreland (C)	702	811	0.5%	8.0%	109	16%
Growth area	Hume (C)	1,046	1,455	0.7%	14.3%	409	39%
	Melton (C)	789	1,283	0.9%	12.6%	494	63%
	Wyndham (C)	1,144	1,742	0.8%	17.2%	598	52%
Periurban	Macedon Ranges (S)	194	297	0.6%	2.9%	103	53%
	Moorabool (S)	259	365	1.1%	3.6%	106	41%
	NWMPHN	**7,602**	**10,144**	**0.6%**	**100.0%**	**2,542**	**33%**
	Victoria	**37,992**	**47,796**	**0.8%**		**4,979**	**13%**

Source: ABS Census

There has been a high growth rate of people identifying as Aboriginal or Torres Strait Islander in many locations across Australia. This growth is seen to relate largely to factors other than natural increase (births and migration), including the greater propensity to identify this origin[4].

Around half of the Aboriginal population in NWMPHN are aged under 25 years (45%, Figure 2, p.4). Macedon Ranges and Moorabool are home to a higher proportion of Aboriginal children and youth than the rest of the NWMPHN region (Figure 3).

Figure 2: Age distribution of Aboriginal people in the NWMPHN, ABS Census 2016

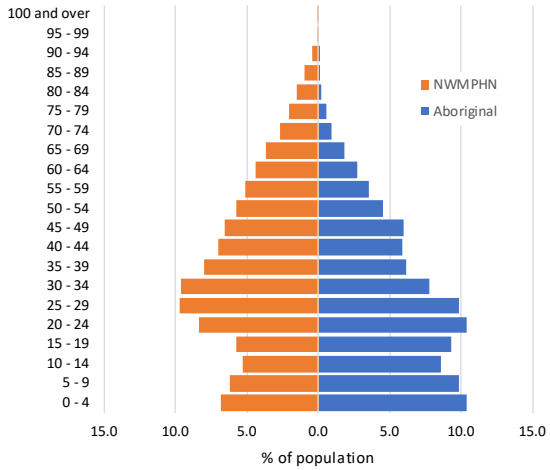
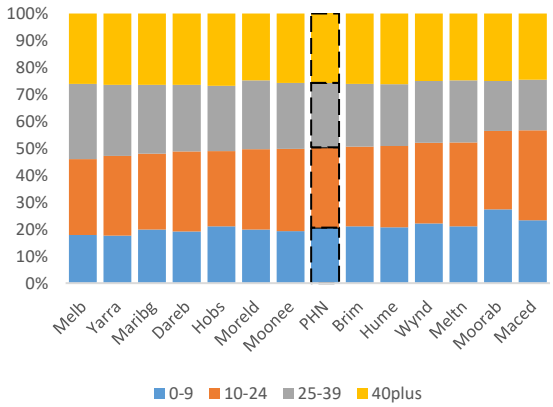


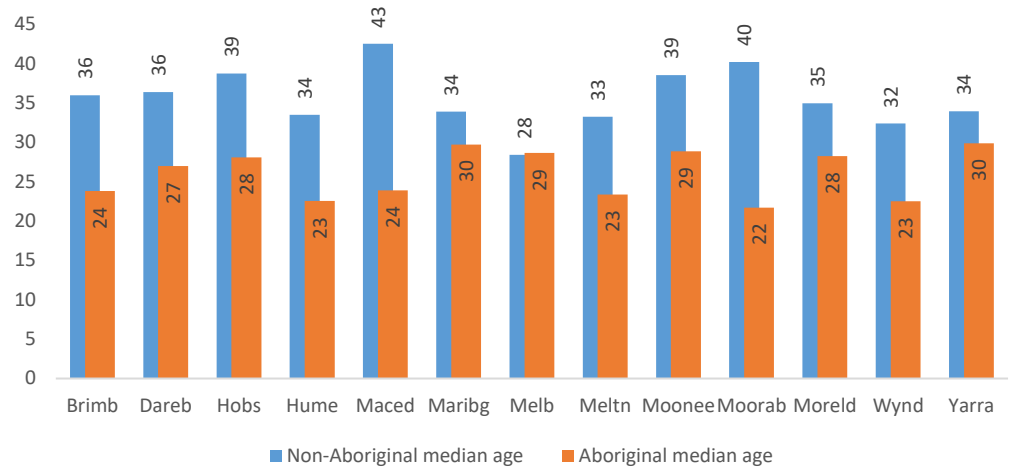
Figure 3: Proportion of Aboriginal children, youth and adults' resident in the NWMPHN by LGA



The median age of an Aboriginal person across the LGAs in NWMPHN is lower than a non-Aboriginal person. Macedon Ranges and Moorabool have the oldest median age for non-Aboriginal people and Yarra and Maribyrnong have the oldest median age for Aboriginal people.

[4] http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Aboriginal%20and%20Torres%20Strait%20Islander%20Population%20Data%20Summary~10

Figure 4: Median age of Aboriginal and non-Aboriginal people in the NWMPHN, ABS 2016



Source: ABS Census 2016

Comparable results are evident in the PATCAT data, where the age distribution shows that Aboriginal people visiting GPs in the region tend to be younger than non-Aboriginal people (Figure 5 and Figure 6 below). The median age of Aboriginal people visiting the Victorian Aboriginal Health Service (VAHS) is age 28[5].

Figure 5: Age distribution of Aboriginal and Torres Strait Islander people in the NWMPHN, PATCAT data, 2015-2017

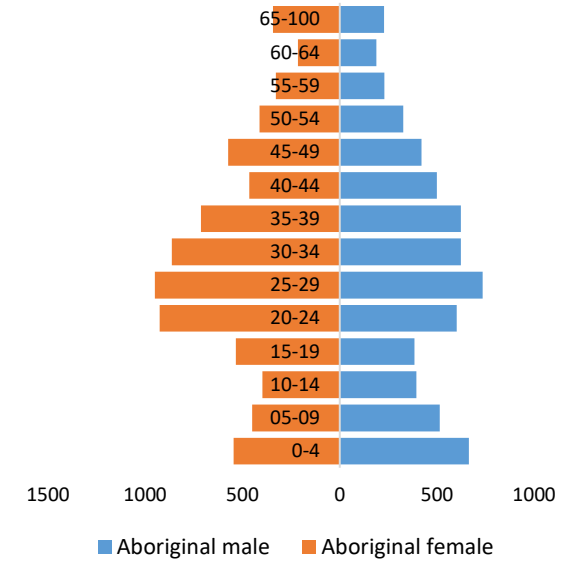
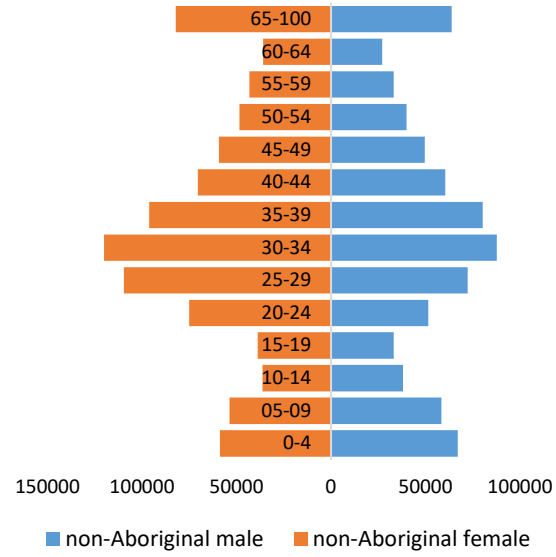


Figure 6: Age distribution of non-Aboriginal people in the NWMPHN, PATCAT data, 2015-2017



Source: NWMPHN analysis of GP visits, PATCAT 2017.

[5] VAHS, *Victorian Aboriginal Health Service*. 2017.

MENTAL HEALTH

In 2011, mental health and substance use disorders were the leading burden of disease for Australian Aboriginal people; accountable for 19% (36,223 DALY) of the total burden and 39% of the non-fatal burden (34,968 YLD).[6] Anxiety disorders (23%), depressive disorders (19%) and schizophrenia (8%) were the major cause of mental health disorders.[7]

In the Victorian Population Health Survey of 2014, 12.6% of all Victorians reported a high to a very high level of psychological distress. The average of in NWMPHN was slightly higher at 13.2%, with Darebin having the highest proportion of people with high levels of distress living in Darebin (20.4%).[8]

The Australia Aboriginal and Torres Strait Islander Health Survey of 2012-13 showed that the proportion of psychological distress was 2.5 times higher for Aboriginal persons than non-Aboriginal persons (32.3% v 12.6%) in Victoria. The health survey reported on Aboriginal Victorians in Melbourne and the rest of Victoria. When looking at gender across Victoria, greater levels of high to very high psychological distress were reported in both Aboriginal (35.3% vs 29.1%) and non-Aboriginal (15.1% vs 10.3%) women relative to men.

A Vic Health funded survey in 2016 indicated that experiencing racism in a health setting had a greater negative impact on the mental health of Aboriginal people than experiencing racism anywhere else.[9] Of the 755 participants, 97% experienced at least one racist incident in the previous 12 months and nearly a third of these incidents were in hospitals and healthcare.[10]

While Victoria generally has lower mental health hospital admission rates than other states due to structural differences in the mental health systems[11], Table 2 (below) illustrates that the Greater Metropolitan area has admission rates 1.4 times higher for Aboriginal people than for the total population.

Within this, Darebin (Northcote - Preston – Whittlesea) reported higher age standardised rates (ASR) of hospital admission for mental health in Aboriginal persons (4,012.3 per 100,000) than the rest of the region.

Table 2: Age standardised rates of admissions with a mental health diagnosis per 100,000 population by Indigenous Area, (2012-13)

Indigenous Area	Aboriginal	Total Population
Brimbank	1,252.36	
Craigieburn - Sunbury	1,815.04	
Maribyrnong - Moonee Valley	1,049.53	
Melbourne - Port Phillip	2,498.17	
Melton	..	
Moreland - Broadmeadows	2,378.73	
Northcote - Preston - Whittlesea	4,017.23	

[6] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[7] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[8] Department of Health, S.G.o.V., Melbourne, Australia, *Victorian Population Health Survey 2014. Modifiable risk factors contributing to chronic disease in Victoria. A snapshot by local government area*. 2016.
[9] Ferdinand, A., Paradies, Y. & Kelaher, M., Mental Health Impacts of Racial Discrimination in Victorian Aboriginal Communities: The Localities Embracing and Accepting Diversity (LEAD) Experiences of Racism Survey. 2012, The Lowitja Institute: Melbourne.
[10] Ferdinand, A., Paradies, Y. & Kelaher, M., Mental Health Impacts of Racial Discrimination in Victorian Aboriginal Communities: The Localities Embracing and Accepting Diversity (LEAD) Experiences of Racism Survey. 2012, The Lowitja Institute: Melbourne.
[11] https://mhsa.aihw.gov.au/services/admitted_overnight/

Wyndham - Altona	778.44	
Macedon Ranges - Moorabool	..	
Greater Melbourne	**1,911.25**	**682.01**
Victoria	**1,607.57**	**715.80**
AUSTRALIA	**2,371.33**	**852.01**
Greater Melbourne Ratio		**1.40**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017. Note: No data reported for Melton and Macedon Ranges-Moorabool because potentially identifiable.

PATCAT data has also been analysed to identify trends (Table 3 below). These data identify that:

- Visits to GPs in Yarra were consistently high for both Aboriginal and non-Aboriginal persons
- The highest percentage rate of GP presentations for bipolar disorder for Aboriginal people was in Maribyrnong and for non-Aboriginal people in Moonee Valley (2.85% vs 0.78%).
- Depression was highest in visits to GPs in Maribyrnong for Aboriginal persons and Moorabool for non-Aboriginal persons.
- Darebin had the highest percentage of people with schizophrenia visiting their GPs for both Aboriginal and non-Aboriginal people.
- VAHS data showed a high proportion of Aboriginal people diagnosed with depression visiting the GPs (19.94%) .

Table 3: Proportion (%) of GP visits due to specified mental health conditions by LGA, PATCAT data (2015-17)

Region	LGA Name	Anxiety		Bipolar		Depression		Schizophrenia	
		Other	Aboriginal	Other	Aboriginal	Other	Aboriginal	Other	Aboriginal
Growth area	Hume (C)	5.98	9.09	0.38	1.08	6.7	11.22	0.31	0.52
	Melton (S)	8.03	13.82	0.55	1.02	7.98	13.10	0.33	0.92
	Wyndham (C)	4.58	9.64	0.77	2.07	5.13	10.4	0.21	0.51
Inner city	Maribyrnong (C)	7.43	10.76	0.76	2.85	8.79	15.35	0.67	2.06
	Melbourne (C)	5.76	11.51	0.32	2.06	6.02	10.14	0.25	2.75
	Yarra (C)	9.87	13.09	0.35	1.36	10.69	15.08	0.73	3.17
Peri-urban	Macedon Ranges (S)	7.5	9.18	0.47	1.22	7.4	8.78	0.19	1.22
	Moorabool (S)	9.48	12.22	0.53	1.97	11.84	14.79	0.51	1.29
Suburban	Brimbank (C)	5.99	13.89	0.44	2.46	6.92	13.55	0.50	1.57
	Darebin (C)	9.67	12.24	0.69	1.92	9.57	13.35	0.78	3.40
	Hobsons Bay (C)	7.31	8.82	0.60	1.94	8.48	13.58	0.44	1.23
	Moonee Valley (C)	5.94	11.65	0.78	0.96	6.36	11.11	0.40	1.90
	Moreland (C)	7.08	12.19	0.32	0.72	7.85	12.45	0.51	2.40
	VAHS		**12.86**	**0.44**	**2.46**		**19.94**		**2.57**

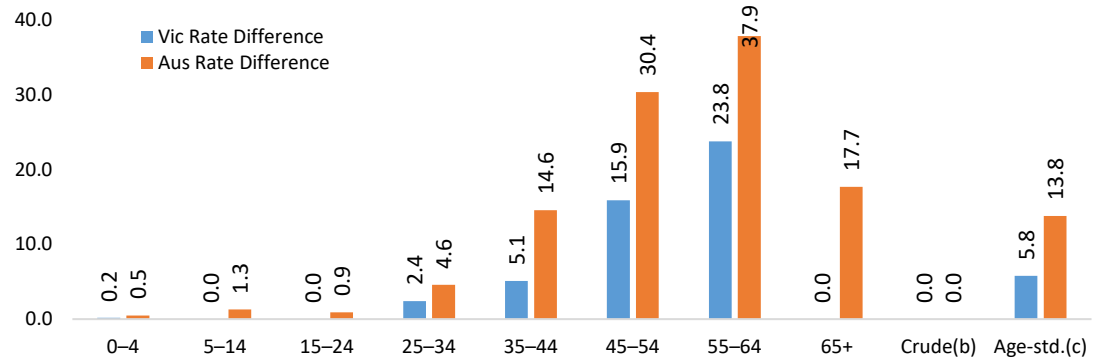
Source: NWMPHN analysis of GP visits, PATCAT 2017.

OTHER HEALTH CONDITIONS

In 2011, cardiovascular diseases were the third greatest contributors to the burden of disease for Aboriginal people, accounting for 12% (23,771 DALY) of the total burden.[12]

In the period of 2008-12, circulatory disease was the leading cause of death for both Aboriginal and non-Aboriginal people (26% and 32% of the total deaths)[13]. The Aboriginal and Torres Strait Islander health performance framework report of 2014, reported that there were over 22,500 hospitalisations of Aboriginal people for circulatory disease, a rate of 17 per 1000 in the two years of 2011-12 and 2012-13.[14] The age standardised rate difference between Aboriginal and non-Aboriginal people aged two and over for circulatory conditions was 5.8 (23.4 vs 17.6) in Victoria compared to 13.8 (31.7 vs 17.9) in Australia (Figure 7, below). [15]

Figure 7: ASR difference of people aged 2 years and above that had a circulatory condition. Aboriginal and Torres Strait Islander Health Performance Framework 2017



The Moreland - Broadmeadows region had the highest ASR of circulatory system admissions per 100,000 in Aboriginal people. The Greater Melbourne ASR of circulatory admissions was 58 per cent lower for Aboriginal population than the total population (937 vs 2251 per 100,000). Age standardised admission rates for other conditions among the Aboriginal population were also generally lower than for non-Aboriginal people.

Table 4: Age standardised rates of admissions with other conditions diagnosis per 100,000 population by Indigenous Area, (2012-13)

Indigenous Area name	Circulatory System		Respiratory System		Digestive System		injury, poisoning and other external causes	
	Aboriginal	Other	Aboriginal	Other	Aboriginal	Other	Aboriginal	Other
Brimbank	..		..		1510		1384	
Craigieburn - Sunbury	..		1284		2070		1703	
Maribyrnong - Moonee Valley	1286		..		1753		2302	
Melbourne - Port Phillip	851		1346		2297		1888	
Melton	..		..		1554		1112	
Moreland - Broadmeadows	1549		1715		2087		2128	
Northcote - Preston - Whittlesea	1185		1800		2173		2156	
Wyndham - Altona	781		974		1655		1356	
Macedon Ranges - Moorabool	..		..				..	
Greater Melbourne	**937**	**2251**	**1163**	**1490**	**1990**	**4503**	**1841**	**2245**
Victoria	**1153**	**2256**	**1609**	**1593**	**2524**	**4438**	**2077**	**2279**

[12] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[13] Council, A.H.M.A., Aboriginal and Torres Strait Islander Health Performance Framework. 2015, AHMAC: Canberra.
[14] Council, A.H.M.A., Aboriginal and Torres Strait Islander Health Performance Framework. 2015, AHMAC: Canberra.
[15] Council, A.H.M.A., Aboriginal and Torres Strait Islander Health Performance Framework. 2015, AHMAC: Canberra.

Indigenous Area name	Circulatory System		Respiratory System		Digestive System		injury, poisoning and other external causes	
	Aboriginal	Other	Aboriginal	Other	Aboriginal	Other	Aboriginal	Other
Australia	**1676**	**2279**	**3030**	**1761**	**2794**	**4045**	**4000**	**2644**
Greater Melbourne Ratio		**0.42**		**2.03**		**0.44**		**0.82**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

In 2011, endocrine disorders contributed 4.1% (7,863 DALY) of total burden among Aboriginal Australians.[16] Most of this burden was due to diabetes, which was one of the five leading causes of total disease burden among Aboriginal Australians (7,725 DALY). [17]

As per PATCAT data, Type 1 diabetes rate are highest in Aboriginal people visiting GPs in Moonee Valley, and for non-Aboriginal people visiting GPs in Darebin. GP visits from patients with Type 2 diabetes were highest for Aboriginal persons in Hobsons Bay and non-Aboriginal persons in Darebin (Table 5 below).

Table 5: Proportion (%) of GP visits due to diabetes types by LGA, PATCAT data (2015-17)

Region	LGA Name	Diabetes Type I (%)		Diabetes Type II (%)		Undefined Diabetes (%)	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	0.35	0.48	3.4	4.3	0.62	0.74
	Melton (S)	0.32	0.51	3.35	3.38	1.1	1.64
	Wyndham (C)	0.27	0.24	2.66	3.08	0.65	0.89
Inner city	Maribyrnong (C)	0.33	0.47	2.84	4.11	0.85	1.27
	Melbourne (C)	0.34	0.52	0.93	1.2	0.24	1.03
	Yarra (C)	0.36	0.34	1.81	2.75	0.33	0.62
Peri-urban	Macedon Ranges (S)	0.42	0.82	2.46	2.65	0.37	0.2
	Moorabool (S)	0.38	0.32	3.57	3.86	0.45	0.64
Suburban	Brimbank (C)	0.38	0.34	4.11	3.81	0.85	1.34
	Darebin (C)	0.43	0.68	4.13	4.14	0.35	0.43
	Hobsons Bay (C)	0.39	0.53	3.43	4.41	0.34	0.88
	Moonee Valley (C)	0.37	1.08	2.6	2.71	0.53	0.81
	Moreland (C)	0.38	0.09	2.83	2.58	0.45	0.69
	VAHS		**0.8**		**8.77**		

Source: NWMPHN analysis of GP visits, PATCAT 2017.

In 2011, the fifth most demanding disease group was respiratory disease, contributing to 7.9% (15,058 DALY) of total burden in Aboriginal Australians.[18] Asthma and Chronic Obstructive Pulmonary Disease (COPD) accounted for highest proportion of the burden from respiratory diseases (41% and 38% respectively). [19]

Chronic respiratory presentations to GPs in NWMPHN are shown in the Table 6 below. The highest proportion of presentations were seen in Moorabool for both asthma and COPD among non-Aboriginal people, while for Aboriginal people, the highest rates of presentations for asthma were in Macedon Ranges and COPD in

[16] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[17] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[18] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.
[19] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.

Moorabool. VAHS had the highest percentage rate of Aboriginal patients visiting GPs for chronic respiratory conditions.[20]

Table 6: Proportion (%) of GP visits due to chronic respiratory conditions by LGA, PATCAT data (2015-17)

Region	LGA Name	Asthma (%)		COPD (%)	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	6.82	9.70	1.02	1.78
	Melton (S)	8.29	12.69	1.03	2.46
	Wyndham (C)	6.66	9.44	0.63	0.96
Inner city	Maribyrnong (C)	8.27	15.98	1.07	3.48
	Melbourne (C)	5.28	12.20	0.31	1.37
	Yarra (C)	7.65	11.64	0.79	2.07
Peri-urban	Macedon Ranges (S)	9.48	14.49	1.10	0.82
	Moorabool (S)	13.48	13.83	2.00	2.57
Suburban	Brimbank (C)	7.96	13.21	1.22	2.91
	Darebin (C)	7.44	9.46	1.59	2.66
	Hobsons Bay (C)	7.52	9.70	1.10	1.06
	Moonee Valley (C)	6.08	7.86	0.84	0.81
	Moreland (C)	7.06	8.93	0.85	1.63
	VAHS		**19.40**		**1.91**

Source: NWMPHN analysis of GP visits, PATCAT 2017.

The cardiovascular diseases group burden was dominated by coronary heart disease (CHD) (58% of cardiovascular disease DALY) and stroke (14% of cardiovascular diseases DALY).[21] Chronic cardiovascular conditions are shown in Table 7 below. Darebin had a high proportion of patient visits due to cardiovascular condition for both Aboriginal and non-Aboriginal persons in the NWMPHN region. VAHS had the highest percentage rate of Aboriginal patients visiting GPs for chronic cardiovascular conditions.[22]

Table 7: Proportion (%) of GP visits due to cardiovascular conditions by LGA, PATCAT data (2015-17)

Region	LGA Name	CHD		Heart Failure		Hypertension		Stroke	
		Non-Aboriginal	Other	Non-Aboriginal	Other	Non-Aboriginal	Other	Non-Aboriginal	Other
Growth area	Hume (C)	1.51	2.35	0.30	0.30	8.15	6.83	0.51	0.74
	Melton (S)	1.64	2.46	0.33	0.51	9.37	5.73	0.59	0.82
	Wyndham (C)	1.10	0.79	0.27	0.38	6.77	6.02	0.40	0.44
Inner city	Maribyrnong (C)	1.42	1.74	0.39	1.11	8.32	8.23	0.74	0.79
	Melbourne (C)	0.54	1.37	0.10	0.17	4.10	4.30	0.28	0.86
	Yarra (C)	1.13	1.65	0.42	0.48	6.4	3.99	0.56	0.96
Peri-urban	Macedon Ranges (S)	1.95	1.22	0.40	0.61	10.82	7.55	1.01	1.02
	Moorabool (S)	2.42	2.89	0.57	0.00	12.78	6.75	1.17	0.00
Suburban	Brimbank (C)	1.73	1.68	0.48	0.45	10.47	5.94	0.70	0.78
	Darebin (C)	2.34	2.16	0.89	0.56	10.27	6.67	1.04	1.55
	Hobsons Bay (C)	2.15	1.94	0.72	0.88	10.00	5.29	0.93	0.88
	Moonee Valley (C)	2.02	0.81	0.42	0.00	9.13	6.50	0.68	0.81

[20] VAHS, *Victorian Aboriginal Health Service*. 2017.

[21] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra.

[22] VAHS, *Victorian Aboriginal Health Service*. 2017.

Region	LGA Name	CHD		Heart Failure		Hypertension		Stroke	
		Non-Aboriginal	Other	Non-Aboriginal	Other	Non-Aboriginal	Other	Non-Aboriginal	Other
	Moreland (C)	1.43	1.63	0.39	0.43	7.84	4.89	0.60	0.52
	VAHS		**4.46**		**0.71**		**10.29**		**1.06**

Source: NWMPHN analysis of GP visits, PATCAT 2017.

DISABILITY

The Australian Aboriginal and Torres Strait Islander Health Survey of 2012-13 describes the level of disability experienced. Aboriginal people have higher rates of disability than non-Aboriginal people across all age groups.[23]

Table 8 below shows the percentage of Aboriginal people assisting persons with a disability. Macedon Ranges - Moorabool have the highest proportion of Aboriginal people providing aid in the region. Brimbank and Macedon Ranges - Moorabool have the highest percentage of Aboriginal persons living with a profound disability.

The proportion of Aboriginal persons with a profound disability is 1.53 times higher than the total population in the Greater Melbourne region. Similarly, the proportion of Aboriginal people aiding persons with a disability is 1.13 times higher than the general population in the Greater Melbourne region (Table 8 below).

Table 8: Proportion (%) of persons with a disability or profound disability by Indigenous Area (2011).

Indigenous Area name	% Aboriginal persons with a profound or severe disability	% persons with a profound or severe disability	% Aboriginal aiding persons with a disability	% aiding persons with a disability
Brimbank	7.02		10.26	
Craigieburn - Sunbury	4.76		10.54	
Maribyrnong - Moonee Valley	4.48		12.55	
Melbourne - Port Phillip	4.83		12.30	
Melton	5.24		11.57	
Moreland - Broadmeadows	6.58		10.48	
Northcote - Preston - Whittlesea	5.71		11.66	
Wyndham - Altona	5.33		10.34	
Macedon Ranges - Moorabool	6.88		18.60	
Greater Melbourne	**5.82**	**3.80**	**12.29**	**10.89**
Victoria	**5.97**	**3.95**	**12.89**	**11.25**
AUSTRALIA+	**4.91**	**3.90**	**12.90**	**10.92**
Greater Melbourne Ratio		**1.53**		**1.13**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

[23] Statistics, A.B.o., *Australian Aboriginal and Torres Strait Islander Health Survey: First Results*. 2012-13, ABS: Australia

FAMILIES

MOTHERS, BABIES AND CHILDREN

The National Key Performance Indicators report provides data on a number of key measures of maternal and child health. The key measures are the proportion of low birth weight babies and the proportion of mothers smoking during pregnancy. As of December 2014, 13% of Aboriginal children born in the previous year had low birth weight[24]. This is twice the rate of the total population (13% vs 6%).

Aboriginal mothers in Australia were approximately four times more likely to smoke through pregnancy than all mothers (47.4% vs 12.3%). Brimbank, Craigieburn - Sunbury and Macedon Ranges - Moorabool IAREs had the highest rates of smoking during pregnancy among Aboriginal mothers (Table 10 below), though all rates were substantially below the overall Australian rate.

Table 9: Percentage of mothers smoking during pregnancy (2011)

Indigenous Area name	% Aboriginal smoking during pregnancy	% smoking during pregnancy
Brimbank	35.9	
Craigieburn - Sunbury	35.9	
Maribyrnong - Moonee Valley	30.8	
Melbourne - Port Phillip	29.2	
Melton	29.9	
Moreland - Broadmeadows	28.3	
Northcote - Preston - Whittlesea	27.8	
Wyndham - Altona	24.9	
Macedon Ranges - Moorabool	33.9	
Greater Melbourne	**n.a.**	**11.2**
Victoria	**n.a.**	**15.0**
AUSTRALIA+	**47.4**	**12.3**
Australia ratio		**3.9**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

Additionally, PATCAT data illustrates a higher GP presentation rate for post-natal depression for non-Aboriginal mothers in Hobsons Bay and for Aboriginal mothers in Moonee Valley (0.36% and 0.54% respectively).

Table 10: Proportion (%) of GP visits due to postnatal depression by LGA, PATCAT data (2015-17)

Region	LGA Name	Non-Aboriginal Postnatal Depression (%)	Aboriginal Postnatal Depression (%)
Growth area	Hume (C)	0.29	0.35
	Melton (S)	0.26	0.20
	Wyndham (C)	0.17	0.34
Inner city	Maribyrnong (C)	0.25	0.47
	Melbourne (C)	0.15	0.52
	Yarra (C)	0.19	0.21
Peri-urban	Macedon Ranges (S)	0.24	0
	Moorabool (S)	0.24	0.32
Suburban	Brimbank (C)	0.21	0.34
	Darebin (C)	0.28	0.25
	Hobsons Bay (C)	0.36	0.18

[24] Welfare, A.I.o.H.a., The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. 2015: Canberra: AIHW.

Region	LGA Name	Non-Aboriginal Postnatal Depression (%)	Aboriginal Postnatal Depression (%)
	Moonee Valley (C)	0.16	0.54
	Moreland (C)	0.11	0.43

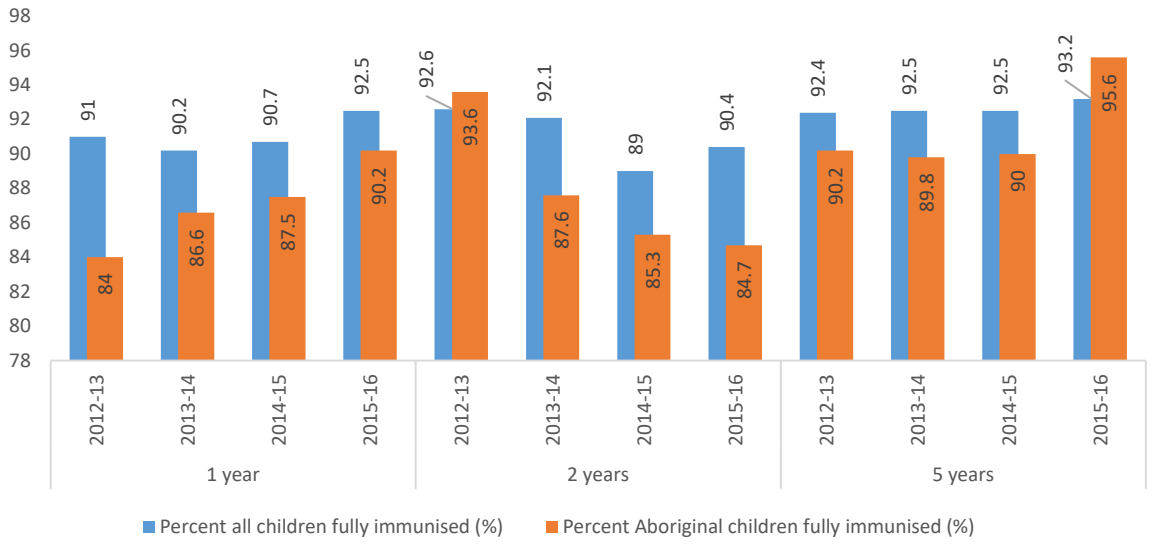
Source: NWMPHN analysis of GP visits, PATCAT 2017.

IMMUNISATION

As shown in the *My Healthy Communities'* report of June 2017, immunisation rates for children continued to improve nationally and in most local areas in 2015-2016[25] . Figure 8 below shows data for Aboriginal children and all children immunised from 2012-13 to 2015-16 for children aged 1, 2 and 5 years old. The proportion of Aboriginal children fully immunised increases with age, but is mostly lower than the general population.

One-year old Aboriginal children had the highest percentage improvement in annual growth rate from 2012-13 to 2015-16 of children immunised compared with all children immunised (2.4% vs 0.6%), with a significant reverse of immunisation rates at two years of age (-3.2% vs -0.8%). In children age 5 years, Aboriginal children had a similar substantial improved growth rate compared to all children (1.96% vs 0.29%) (Figure 8 below).

Figure 8: Proportion (%) of children fully immunised age groups 1, 2 and 5 years old in NWMPHN (2016)



Source: MyHealthyCommunities, Australian Institute of Health and Welfare 2017

NWMPHN immunisation rates of 5-year-old children were higher than national rates (93.2% vs 92.9%) and improved from 92.4% to 93.2% from the years of 2012-13 to 2015-16. Immunisation rates for 5-year-old Aboriginal children in the NWMPHN region were higher than all children in the region (95.6% vs 93.2%), but lower for 1-year-olds (90.2% vs 92.5%) and 2-year-olds (84.7% vs 90.4%). National 5-year-old Aboriginal immunisation rates were higher than all children nationally (94.6% vs 92.9%).

[25] Welfare, A.I.o.H.a., *Healthy Communities: Immunisation rates for children in 2015–16 (In Focus)*. 2017, AIHW: Canberra.

MATERNAL AND CHILD CONSULTATIONS

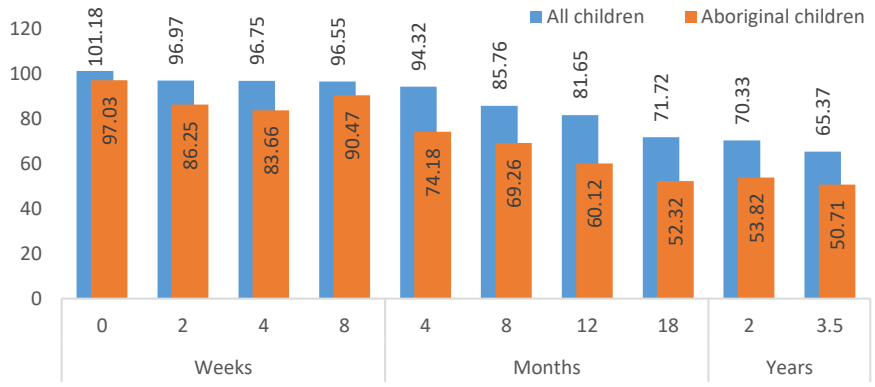
The maternal and child health program provides developmental health assessments for all children at key milestone ages until 3.5 years of age. Data from the program identifies two key trends:

- A declining participation rate as children age. This is apparent in both Aboriginal children and for the total population.
- Participation rates are generally lower for Aboriginal children than for the total population (Figure 9, below).

Appendix 2 provides a breakdown by LGA. These data illustrate some alternative trends in some subgroups.

Aboriginal participation rates are higher in Maribyrnong than the general population (120% vs 103.5%) with this declining through the timeseries to be lower than the total population (22.2% vs 53.6%). The opposite was experienced in Moonee Valley where the first Aboriginal mothers and children participation rate was approximately two times lower than all mothers and children participation rates (50% vs 99.6%) and the last consultation participation rate for Aboriginal mothers and children was higher than all mothers and children participation rates (83.3% vs 76%).

Figure 9: Average % of consultation for Aboriginal and all mothers and children (2014-15)



Source: NWMPHN Maternal & Child Health Services Annual Report 2014-15, DET 2017

Table 12 illustrates the hospitalisation rate to provide some indication of the ill-health of children aged 0-14 years. Northcote-Preston-Whittlesea has the highest ASR of children hospitalised in NWMPHN, followed by Moreland-Broadmeadows. Remaining areas are statistically significantly lower than the Australian rate.

Table 11: Total hospitalisation of Aboriginal children, 0-14 years, aged standardised rate (ASR)

Indigenous Area name	ASR per 100,000	Statistical significance
Brimbank	9,008.7	**
Craigieburn - Sunbury	10,592.7	*
Maribyrnong - Moonee Valley	8,256.6	**
Melbourne - Port Phillip	7,351.4	**
Melton	7,285.1	**
Moreland - Broadmeadows	13,194.0	
Northcote - Preston - Whittlesea	19,435.0	
Wyndham - Altona	6,644.0	**
Macedon Ranges - Moorabool	5,322.7	**
Greater Melbourne	**10,947.7**	**
Victoria	**11,484.3**	**
AUSTRALIA+	**16,872.3**	

*Source: NWMPHN analysis of ABS ERP, PHIDU 2017. Note: *=significantly lower than the Australian rate at 95% confidence; **=significantly lower than the Australian rate at 99% confidence*

IRSEO AND PINIRSEO SCORES

The Centre for Aboriginal and Economic Policy Research has described the use of different socioeconomic indices for Aboriginal and non-Aboriginal populations.[26] The main reasons for developing a difference suite of Aboriginal outcomes indices were the relative size of the Aboriginal population, irrelevance of some variables in the SEIFA indices to Aboriginal communities and that the geographical boundaries have varied over time.[27]

Within NWMPHN, the 2011 Indigenous Relative Socioeconomic Outcomes (IRSEO) score was low relative to the Victorian and Australian averages (12 vs 29 and 46). However, further development of the IRSEO was undertaken to include the non-Aboriginal population. Table 13 shows the adjusted IRSEO, PIRSEO with the two indices for the Aboriginal and all population.

*Table 12: PINIRSEO scores. *the higher the PINIRSEO number the worse the level of disadvantage.*

Indigenous Area name	PIRSEO Non-Aboriginal	PIRSEO Aboriginal
Brimbank	46	64
Craigieburn - Sunbury	27	54
Macedon Ranges - Moorabool	20	51
Maribyrnong - Moonee Valley	14	43
Melbourne - Port Phillip	3	33
Melton	23	61
Moreland - Broadmeadows	33	58
Northcote - Preston - Whittlesea	25	57
Wyndham - Altona	19	58

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

Brimbank and Northcote- Preston- Whittlesea had high rates for Aboriginal people living in single parent (57.9% and 55.9%) and low-income (13% and 13.6%) families, compared to other areas in NWMPHN. Aboriginal people in the Greater Melbourne region were 2.5 times more likely to live in a single parent family compared to the total population (Table 14, below).

Table 13: Socioeconomic indicators, single parents and children in jobless families (2011)

Indigenous Area name	% Aboriginal single parent families	% single parent families	% Aboriginal low-income families	% low income, welfare-dependent families (with children)
Brimbank	57.93		13.00	
Craigieburn - Sunbury	35.98		7.90	
Maribyrnong - Moonee Valley	48.28		12.20	
Melbourne - Port Phillip	52.44		6.00	
Melton	44.79		10.00	
Moreland - Broadmeadows	51.60		12.30	
Northcote - Preston - Whittlesea	55.85		13.60	
Wyndham - Altona	45.03		9.70	
Macedon Ranges - Moorabool	35.34		7.80	
Greater Melbourne	**46.50**	**18.00**	**9.83**	**8.90**
Victoria	**49.39**	**19.59**	**11.48**	**9.53**
AUSTRALIA+	**47.22**	**21.34**	**12.86**	**10.11**
Greater Melbourne Ratio		**2.58**		**1.10**

[26] Biddle, D.N., *CAEPR Indigenous Population Project 2011 Census Papers: Socioeconomic Outcomes*. 2013.
[27] Biddle, D.N., *CAEPR Indigenous Population Project 2011 Census Papers: Socioeconomic Outcomes*. 2013

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

LABOUR FORCE

When looking at the unemployment rate, Melton had the highest Aboriginal unemployment rate in the NWMPHN region, being 1.5 times that of Greater Melbourne (17% vs 11.14%) (Table 15, below). The Aboriginal Greater Melbourne percentage rate was 1.8 times that of the total population percentage rate (11.14% vs 5.92%).

The percentage of female participation in the labour force in Brimbank was the lowest for Aboriginal people in the NWMPHN region. Female participation in the Greater Melbourne region was nearly 20% lower for Aboriginal women than for non-Aboriginal women (46.3% vs 56.1%).

Table 14: Socioeconomic indicators, unemployment and labour force participation (2016/2011)

Indigenous Area name	% Aboriginal unemployed	% unemployed	% Aboriginal female labour force participation	% female labour force participation
Brimbank	13.10		48.37	
Craigieburn - Sunbury	9.90		62.25	
Maribyrnong - Moonee Valley	8.90		58.09	
Melbourne - Port Phillip	12.40		62.69	
Melton	17.00		50.60	
Moreland - Broadmeadows	12.60		48.97	
Northcote - Preston - Whittlesea	10.50		53.62	
Wyndham - Altona	11.20		55.60	
Macedon Ranges - Moorabool	10.90		52.21	
Greater Melbourne	**11.14**	**5.92**	**46.30**	**56.13**
Victoria	**14.10**	**5.92**	**48.93**	**55.83**
AUSTRALIA+	**17.10**	**5.88**	**54.22**	**56.81**
Greater Melbourne Ratio		**1.88**		**0.82**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

Brimbank had the highest rate of Aboriginal children (<16 years) and adults living in jobless families (49.8% and 50.3%) (Table 16, below). The Aboriginal Greater Melbourne region population rate is approximately three times higher than the total population for both groups (34.3% and 33.5% vs 11.8% and 11.4% respectively).

Table 15: Socioeconomic indicators, unemployment and labour force participation (2011)

Indigenous Area name	% children in Aboriginal jobless families	% children in jobless families	% Aboriginal jobless families	% jobless families
Brimbank	49.8		50.3	
Craigieburn - Sunbury	28.2		26.8	
Maribyrnong - Moonee Valley	27.3		31.9	
Melbourne - Port Phillip	25.5		39.0	
Melton	37.4		39.1	
Moreland - Broadmeadows	49.0		45.7	
Northcote - Preston - Whittlesea	38.8		39.4	
Wyndham - Altona	33.3		33.2	
Macedon Ranges - Moorabool	34.6		28.5	
Greater Melbourne	**34.3**	**11.8**	**33.5**	**11.4**
Victoria	**40.0**	**12.7**	**39.4**	**12.3**
AUSTRALIA+	**40.2**	**13.9**	**39.8**	**13.3**
Greater Melbourne Ratio		**2.9**		**2.9**

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

INCOME AND HOUSING

Aboriginal people have on average a lower individual and household weekly income than non-Aboriginal people. Brimbank has the lowest individual and household median incomes in non-Aboriginal population and second lowest in Aboriginal population in NWMPHN.

Table 16: Median weekly income (2016)

Region	LGA Name	Individual Weekly Income ($median)		Household Weekly Income ($median)	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	531	517	1594	1464
	Melton (S)	661	519	1784	1471
	Wyndham (C)	688	507	1824	1566
Inner city	Maribyrnong (C)	707	531	1885	1369
	Melbourne (C)	643	601	1593	1342
	Yarra (C)	1043	628	2338	1616
Peri-urban	Macedon Ranges (S)	706	568	2008	1636
	Moorabool (S)	639	643	1739	1569
Suburban	Brimbank (C)	489	496	1529	1381
	Darebin (C)	653	477	1793	1390
	Hobsons Bay (C)	707	529	1946	1701
	Moonee Valley (C)	746	708	2107	1901
	Moreland (C)	683	563	1848	1435

Source: Statistical data for Victorian Communities, City of Dandenong 2017.

Looking at housing, a higher percentage of non-Aboriginal people owned or are paying mortgages compared to Aboriginal people. Table 18 shows Macedon Ranges as having the highest percentage of home ownership or mortgage payment for Aboriginal and non-Aboriginal people (68% vs 82%) and Melbourne having highest percentage of tenants for both Aboriginal and non-Aboriginal people (78% vs 66%). The percentage of dwellings rented from the government or housing co-ops is highest in Darebin (28%) for Aboriginal people and Yarra (10%) for non-Aboriginal people.

Table 17: Housing (2011 – 2016)

Region	LGA Name	Owned or being purchased		Rented dwellings		Dwellings rented from the government or housing co-ops.	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	72	49	24	49	3	16
	Melton (S)	75	51	21	46	1	6
	Wyndham (C)	69	44	28	53	1	8
Inner city	Maribyrnong (C)	52	29	44	68	6	18
	Melbourne (C)	30	14	66	78	5	12
	Yarra (C)	42	21	54	75	10	25
Peri-urban	Macedon Ranges (S)	82	68	15	21	2	5
	Moorabool (S)	78	64	18	31	3	7
Suburban	Brimbank (C)	70	35	26	57	2	14
	Darebin (C)	58	26	38	69	4	28
	Hobsons Bay (C)	67	42	29	55	3	13
	Moonee Valley (C)	64	33	32	61	5	11
	Moreland (C)	59	32	38	62	3	11

Source: Statistical data for Victorian Communities, City of Dandenong 2017.

EDUCATION

The 2014-15 Aboriginal and Torres Strait Islander social survey indicated that there was significant improvement in the number of Aboriginal people aged 15 years and over who had completed Year 12 or equivalent compared to previous years. However, when looking at the ASR of participation in vocational education and training in the NWMPHN region, the rate of Aboriginal children in Macedon Ranges was very low, at 9.5 per 100 persons. The rate in non-Aboriginal people was very low in Melbourne, at 8.6 per 100 persons (Table 19 below).

Table 18: Participation rate in vocational education and training ASR per 100 people (2015)

Region	LGA Name	Non-Aboriginal population ASR per 100	Aboriginal population ASR per 100
Growth area	Hume (C)	19.4	18.2
	Melton (S)	18.1	17.6
	Wyndham (C)	18.8	16.2
Inner city	Maribyrnong (C)	14.0	14.9
	Melbourne (C)	8.6	18.0
	Yarra (C)	10.1	11.6
Peri-urban	Macedon Ranges (S)	16.1	9.5
	Moorabool (S)	19.1	16.3
Suburban	Brimbank (C)	18.5	18.7
	Darebin (C)	11.9	14.5
	Hobsons Bay (C)	14.9	12.8
	Moonee Valley (C)	16.7	111.8
	Moreland (C)	12.6	10.8

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

The percentage of Aboriginal students that passed in vocational education and training subjects is seen in Table 21 below. Several LGAs had similar outcomes for Aboriginal and non-Aboriginal students. In Macedon Ranges, the Aboriginal student percentage surpassed that of the non-Aboriginal students (92.8% vs 81.8%). Darebin had the lowest percentage pass rate of vocational and training subjects for both Aboriginal and non-Aboriginal children in the NWMPHN region (59.2% and 74.8% respectively).

Table 19: Socioeconomic indicators, Load Pass Rate of vocational education and training subjects (2015)

Region	LGA Name	% passed subject	% Aboriginal passed subject
Growth area	Hume (C)	76.4	73.2
	Melton (S)	79.5	65.4
	Wyndham (C)	79.5	76.6
Inner city	Maribyrnong (C)	74.7	72.4
	Melbourne (C)	78.5	72.6
	Yarra (C)	75.5	68.0
Peri-urban	Macedon Ranges (S)	82.1	92.8
	Moorabool (S)	82.9	61.9
Suburban	Brimbank (C)	76.5	68.7
	Darebin (C)	74.8	59.2
	Hobsons Bay (C)	80.1	60.3
	Moonee Valley (C)	78.3	60.2
	Moreland (C)	79.7	73.1

Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

The percentage of people that left school before completing year 11 is seen in Table 22 below. A higher percentage is seen in Aboriginal people compared to non-Aboriginal people in both groups. Melbourne

especially, has 75% Aboriginal people that left school before completing year 11 compared to 7% of non-Aboriginal people. However only 13% of Aboriginal people aged 20-24 in the same areas left school before completing year 11. Overall, the percentages are showing that Aboriginal people are now far more likely to complete year 11 than in previous years.

Table 20: Percentage of population (%) that left school before completing year 11 (ABS, 2016)

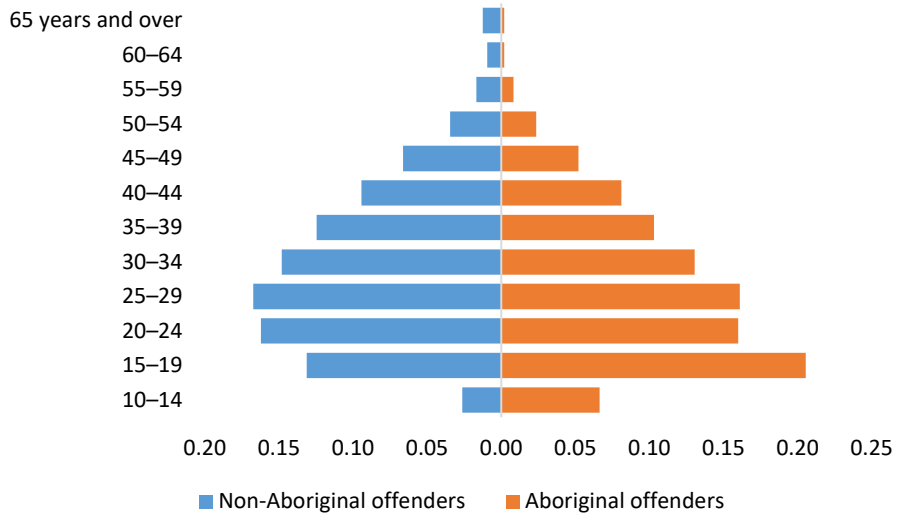
Region	LGA Name	Left before year 11		Aged 20-24 left before year 11	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	33	51	14	37
	Melton (S)	31	51	16	25
	Wyndham (C)	26	56	13	30
Inner city	Maribyrnong (C)	20	68	6	22
	Melbourne (C)	7	75	2	13
	Yarra (C)	12	73	4	16
Peri-urban	Macedon Ranges (S)	29	53	13	29
	Moorabool (S)	36	51	18	39
Suburban	Brimbank (C)	33	55	9	28
	Darebin (C)	23	60	5	18
	Hobsons Bay (C)	27	61	9	26
	Moonee Valley (C)	23	69	5	17
	Moreland (C)	23	73	6	13

Source: Statistical data for Victorian Communities, City of Dandenong 2017.

OFFENDER INCIDENTS

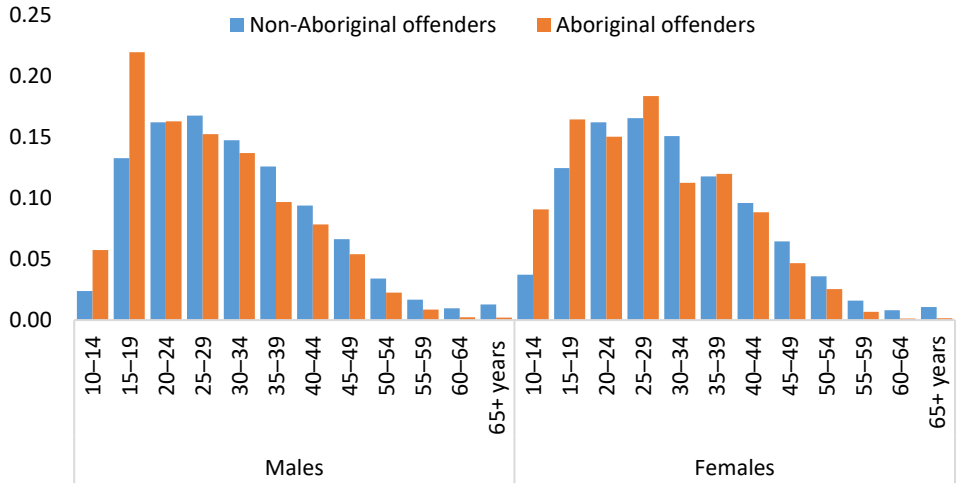
As per the recorded crime statistics based on data extracted by Victoria Police, a high proportion of Aboriginal offenders are young (aged 10-19 years, 27%), while non-Aboriginal offenders are more likely to be older (aged 25-39, 60%). When split by gender, Aboriginal female offenders have a higher proportion representation to non-Aboriginal female offenders (27% vs 18%), while the Aboriginal male offenders have a lower proportion representation compared to non-Aboriginal male offenders (73% vs 82%).

Figure 10: Proportion (%) of Aboriginal and non-Aboriginal offenders by age-groups (2016-17)



Source: Crime Statistics Data, Crime Statistics Agency Victoria Police 2017

Figure 11: % Aboriginal and non-Aboriginal offenders by gender and age-groups (2016-17)



Source: Crime Statistics Data, Crime Statistics Agency Victoria Police 2017

Below is the distribution by LGA of overall offences for Aboriginal (4.5%) and non-Aboriginal Australians (76.3%) in NWMPHN (the reaming 19.2 per cent, the offender was unknown). The NWMPHN region Aboriginal offenders rate is lower than the Victorian overall rate (4.5% vs 6.3%), while the non-Aboriginal offenders rate is similar to the Victorian overall percentage rate (76.3% vs 76.6). The highest rates of reported Aboriginal offenders are in Yarra and Darebin, and for non-Aboriginal offenders in Brimbank, Maribyrnong and Moonee Valley.

Table 21: Percentage of population (%) Aboriginal and non-Aboriginal offenders by LGA (2016-17)

Region	LGA Name	Non-Aboriginal offences	Aboriginal offences	Unknown offences
Growth area	Hume (C)	76.7	3.0	20.3
	Melton (S)	73.6	2.8	23.6
	Wyndham (C)	74.1	2.5	23.4
Inner city	Maribyrnong (C)	81.3	2.8	15.8
	Melbourne (C)	74.8	5.0	20.2
	Yarra (C)	73.7	10.0	16.3
Peri-urban	Macedon Ranges (S)	74.7	4.0	21.3
	Moorabool (S)	75.1	3.1	21.8
Suburban	Brimbank (C)	81.6	1.6	16.8
	Darebin (C)	75.0	9.7	15.3
	Hobsons Bay (C)	77.0	3.8	19.2
	Moonee Valley (C)	79.7	2.7	17.6
	Moreland (C)	76.5	5.6	17.9

Source: Crime Statistics Data, Crime Statistics Agency Victoria Police 2017

HEALTH SERVICES

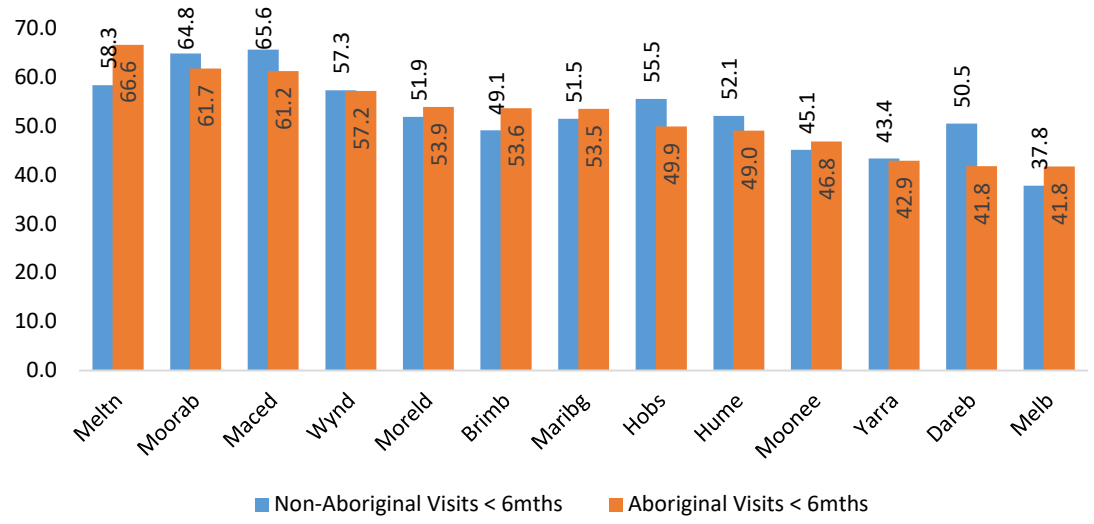
In 2012-13, more than 1 in 5 Aboriginal people (22%) accessed a GP or specialist, 19% had visited a health professional other than a GP or specialist and 5% had visited a dental professional in Australia in the last 2 weeks. The likelihood of the above increased with age[28]. One in three Aboriginal people living in the NWMPHN region are a current client of VAHS[29].

As per the AIHW Aboriginal primary health check, the usage rate of GP services by Aboriginal people in the NWMPHN region in 2015-16 was 15.8% compared to 16% in 2014-15 and 12.1% in 2013-14[30] . In 2016-2017, 17% of VAHS clients had an Aboriginal Health Check (MBS Item 715)[31].

Table 24 (p.26) shows the frequency of people visiting GPs in NWMPHN. We can see that overall, most Aboriginal and non-Aboriginal people have visited the GP within the last 12 months from the date of the data extract (53.6% vs 49.1%), with the next most common frequency being 36 months plus for non-Aboriginal (16.2%) and 6 to 12 months for Aboriginal people (14.3%).

In 2015, there were 451 registered and employed Aboriginal health practitioners in Australia, 11 (2%) of whom were registered and employed in Victoria. There was no Aboriginal health practitioners registered and employed in the NWMPHN region. As of 2017, VAHS has employed a registered female Aboriginal Health Practitioner[32].

Figure 12: % Aboriginal and non-Aboriginal frequency of GP visits in less than 6 months, PATCAT data (2015-17)



Source: NWMPHN analysis of GP visits, PATCAT 2017.

When we look at visits to the GPs by LGAs in the NWMPHN, the highest percentage rate of GP visits within 6 months and less for Aboriginal people was in Melton (66.6%) and for non-Aboriginal people was in Macedon Ranges (65.6%) (Figure 12 above).

[28] Statistics, A.B.o., *Australian Aboriginal and Torres Strait Islander Health Survey: First Results*. 2012-13, ABS: Australia.
[29] VAHS, *Victorian Aboriginal Health Service*. 2017
[30] Welfare, A.I.o.H.a., *AIHW Indigenous health check (MBS 715) source data, by Primary Health Network*, in *Table 4: Indigenous health checks, by Primary Health Network, 2011–12 to 2013–14* AIHW, Editor. 2014
[31] VAHS, *Victorian Aboriginal Health Service*. 2017
[32] VAHS, *Victorian Aboriginal Health Service*. 2017

Table 22: % Aboriginal and non-Aboriginal frequency of GP visits by LGA, PATCAT data (2015-17)

Region	LGA Name	Visits less than 1 year		Visits between 1 and 2 years		Visits more than 3 years	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	**Aboriginal**
Growth area	Hume (C)	66.8	63.2	15.7	18.9	16.3	16.3
	Melton (S)	73.9	80.9	13.6	12.7	11.9	5.8
	Wyndham (C)	73.5	72.7	15.5	15.3	10	11.3
Inner city	Maribyrnong (C)	66.2	68.5	16.4	15.8	16.5	15.2
	Melbourne (C)	53.5	59.8	16.9	17	18.3	19.8
	Yarra (C)	58.7	58.6	17.2	16.5	21	21
Peri-urban	Macedon Ranges (S)	80.9	77.6	14.5	15.5	3.8	6.3
	Moorabool (S)	79.6	77.2	13.5	15.8	6.6	7.4
Suburban	Brimbank (C)	61.9	68	12.9	14.8	23.3	16.5
	Darebin (C)	64.9	55.1	15	17.1	18.2	25.7
	Hobsons Bay (C)	69.3	67.2	14.5	13.9	15.4	17.5
	Moonee Valley (C)	59.4	61.6	15	17.3	20.5	17.7
	Moreland (C)	67.9	68.7	16.1	14.1	13.5	15

Source: NWMPHN analysis of GP visits, PATCAT 2017.

ALCOHOL AND OTHER DRUGS

The consumption of alcohol is widespread within Australia and associated with many social and cultural activities. However, excessive alcohol consumption is a major cause of ill health and social harms, not limited to individual drinkers but also affecting families, bystanders and the broader community[33].

The 2016 National Drug Strategy Survey shows fewer Australians are drinking alcohol at levels that put them at risk of an alcohol related disease in 2016 (17%) compared to 2013 (18%). Fewer teenagers are drinking alcohol (18%, 2016 vs 28%, 2013), and if they do drink, they are older when they first try it (16 years, 2016 vs 15 years, 2007)[34].

According to the 2014-15 National Aboriginal and Torres Strait Islander Social survey, the proportion of Aboriginal people engaging in risky single occasion drinking (four or more standard drinks at a time according to 2009 NHMRC guidelines) has declined from 38% in 2008 to 30% in 2014[35]. The burden of disease attributed to alcohol use were 100% of alcohol use disorders (8,037 DALY), 24% of the burden of Road Traffic Injuries (motor vehicle occupants and other RTI, 1,119 DALY), 24% of the burden due to chronic liver disease ((1,001 DALY), and 20% of the burden due to suicide and self-inflicted injuries (1,701)[36].

Of the small proportion (3.5%) of burden of mental and substance use disorders that was fatal, a substantial proportion was due to alcohol use disorders (73%) and drug use disorder (15%)[37]. Table 25 below shows the percentage of drinkers visiting GPs in the NWMPHN Region per the PATCAT data for 2015 - 2017. We can see a high percentage rate of drinkers visiting GPs in Melbourne for Aboriginal people and Yarra for non-Aboriginal people (68.8% vs 75.8%).

Table 23: % Aboriginal and non-Aboriginal patients that drink, PATCAT data (2015-17)

Region	LGA Name	Non-Aboriginal Drinker (%)	Aboriginal Drinker (%)
Growth area	Hume (C)	35.9	34.6
	Melton (S)	45.4	48.8
	Wyndham (C)	39.6	44.3
Inner city	Maribyrnong (C)	51.4	48.9
	Melbourne (C)	67.5	68.8
	Yarra (C)	75.8	66.9
Peri-urban	Macedon Ranges (S)	71.7	63.1
	Moorabool (S)	59.7	47.8
Suburban	Brimbank (C)	42.2	39.6
	Darebin (C)	65.4	61.7
	Hobsons Bay (C)	66.4	63.3
	Moonee Valley (C)	58.5	60.5
	Moreland (C)	54.5	55.2

Source: NWMPHN analysis of GP visits, PATCAT 2017.

The 2014-15 National Aboriginal and Torres Strait Islander Social survey, the proportion of Aboriginal and Torres Strait Islander people who are current daily smokers has declined from 45% in 2008 to 39% in 2014[38] . The

[33] Council, N.H.M.R., *Australian guidelines to reduce health risks from drinking alcohol*. 2009, Commonwealth of Australia Canberra

[34] AIHW, *National Drug Strategy Household Survey 2016: Key Findings*. 2016

[35] Statistics, A.B.o., *National Aboriginal and Torres Strait Islander Social Survey, 2014–15*. 2015, ABS: Canberra

[36] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra

[37] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra

[38] Statistics, A.B.o., *National Aboriginal and Torres Strait Islander Social Survey, 2014–15*. 2015, ABS: Canberra

burden of disease attributed to tobacco use was 49% of the burden of coronary heart disease (6,747 DALY), 86.8% of the burden of COPD (4,993 DALY), 93.3% of the burden of lung cancer (3,970 DALY) and 44.1% of the burden of stroke (1,456 DALY)[39].

People visiting GPs in NWMPHN who smoke, have smoked and have never smoked is shown in Table 26 below. Overall roughly double the number of Aboriginal people smoke compared to non-Aboriginal people across the LGAs, apart from Moorabool, which has a 1.26 times higher rate of smoking for Aboriginal people. Yarra GPs have recorded the highest percentage of Aboriginal and non-aboriginal smokers (49.6% vs 20.6). VAHS recorded 57.48% of Aboriginal clients as current smokers[40].

Table 24: % Aboriginal and non-Aboriginal people visiting GPs smoking status, PATCAT data (2015-17)

Region	LGA Name	Smoker (%)		Ex-Smoker (%)		Never Smoked (%)	
		Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
Growth area	Hume (C)	18.9	32.8	11.56	10.8	69.56	56.37
	Melton (S)	18.3	36.1	13.4	9.74	68.29	54.2
	Wyndham (C)	14.6	33.1	10.62	10.13	74.79	56.73
Inner city	Maribyrnong (C)	19.1	45.1	13.17	13.33	67.69	41.62
	Melbourne (C)	12.1	36.4	12.3	8.96	75.57	54.91
	Yarra (C)	20.6	49.6	17.93	12.68	61.51	37.63
Peri-urban	Macedon Ranges (S)	13.3	19.4	20.67	15.97	66.07	64.93
	Moorabool (S)	18.6	26.3	17.65	12.76	63.7	61.32
Suburban	Brimbank (C)	17.9	37	12.84	12.11	69.27	51
	Darebin (C)	17	44.6	16.44	14.49	66.55	40.87
	Hobsons Bay (C)	15.7	38.8	17.38	13.16	66.95	48.09
	Moonee Valley (C)	14.6	38.6	13.4	9.12	72	52.28
	Moreland (C)	18.2	38.6	13.92	11.26	67.89	50.06

Source: NWMPHN analysis of GP visits, PATCAT 2017.

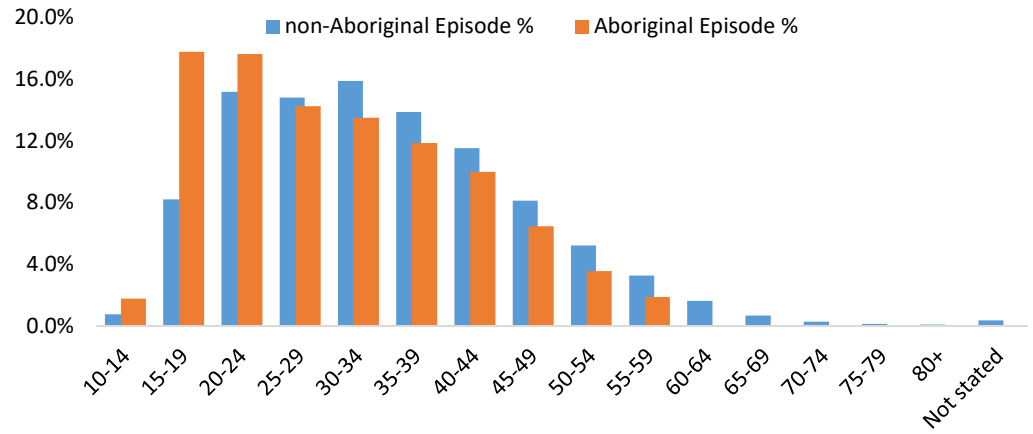
Per the POLAR Alcohol and Other Drug Treatment Service National Minimum Dataset (AODTS NMDS) 57.4% of NWMPHN Aboriginal patients were male and 42.6% were female. For non-Aboriginal patients, 68.6% were male and 31.4% were female. Figure 13 below shows the age-group distribution of AODTS episodes of treatment. A larger proportion of younger Aboriginal patients compared to non-Aboriginal patients in NWMPHN had episodes of treatment. Counts that are less than 50 are not included, which is why age groups greater than 59 are not shown for Aboriginal patients.

Other than alcohol, the principal drugs of concern for Aboriginal and non-Aboriginal patients were sedatives and hypnotics (32.1% and 35.6%), followed by cannabinoids and related drugs for Aboriginal patients (29.7%) and stimulants and hallucinogens (20.5%) for non-Aboriginal patients (Figure 14 below). Figure 15 shows the method of use for the principal drug of concern. Most Aboriginal patients smoked (33%) their principal drug of concern and most non-Aboriginal patients ingested (31%).

[39] Welfare, A.I.o.H.a., *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011*, in *Australian Burden of Disease Study*. 2016, AIHW: Canberra

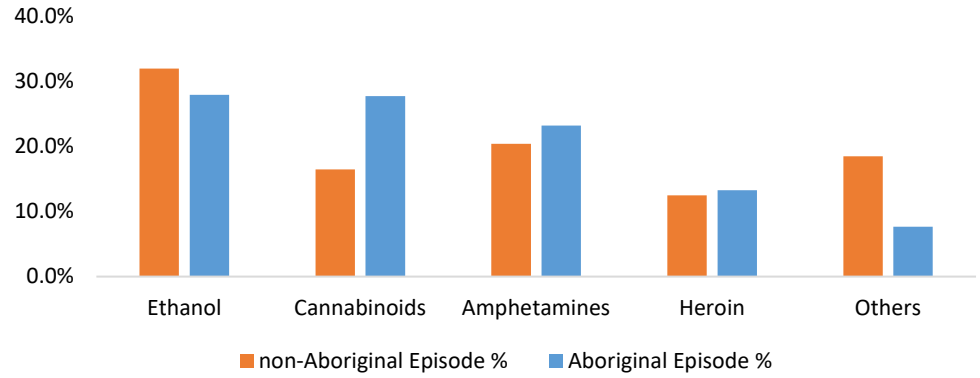
[40] VAHS, *Victorian Aboriginal Health Service*. 2017.

Figure 13: % Aboriginal and non-Aboriginal treatment episodes by age group, POLAR AODTS (2012/13-2014/15)



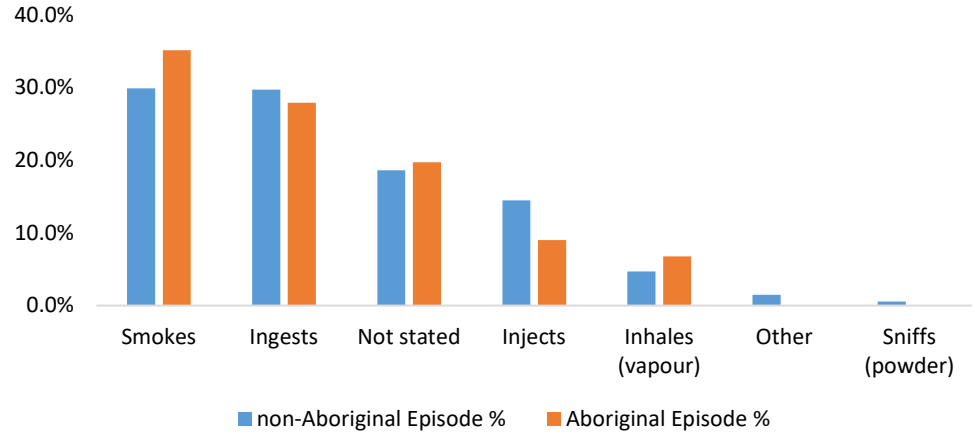
Source: Alcohol and Drug Treatment, POLAR 2017

Figure 14: % Aboriginal and non-Aboriginal principal drugs of concern, POLAR AODTS (2012/13-2014/15)



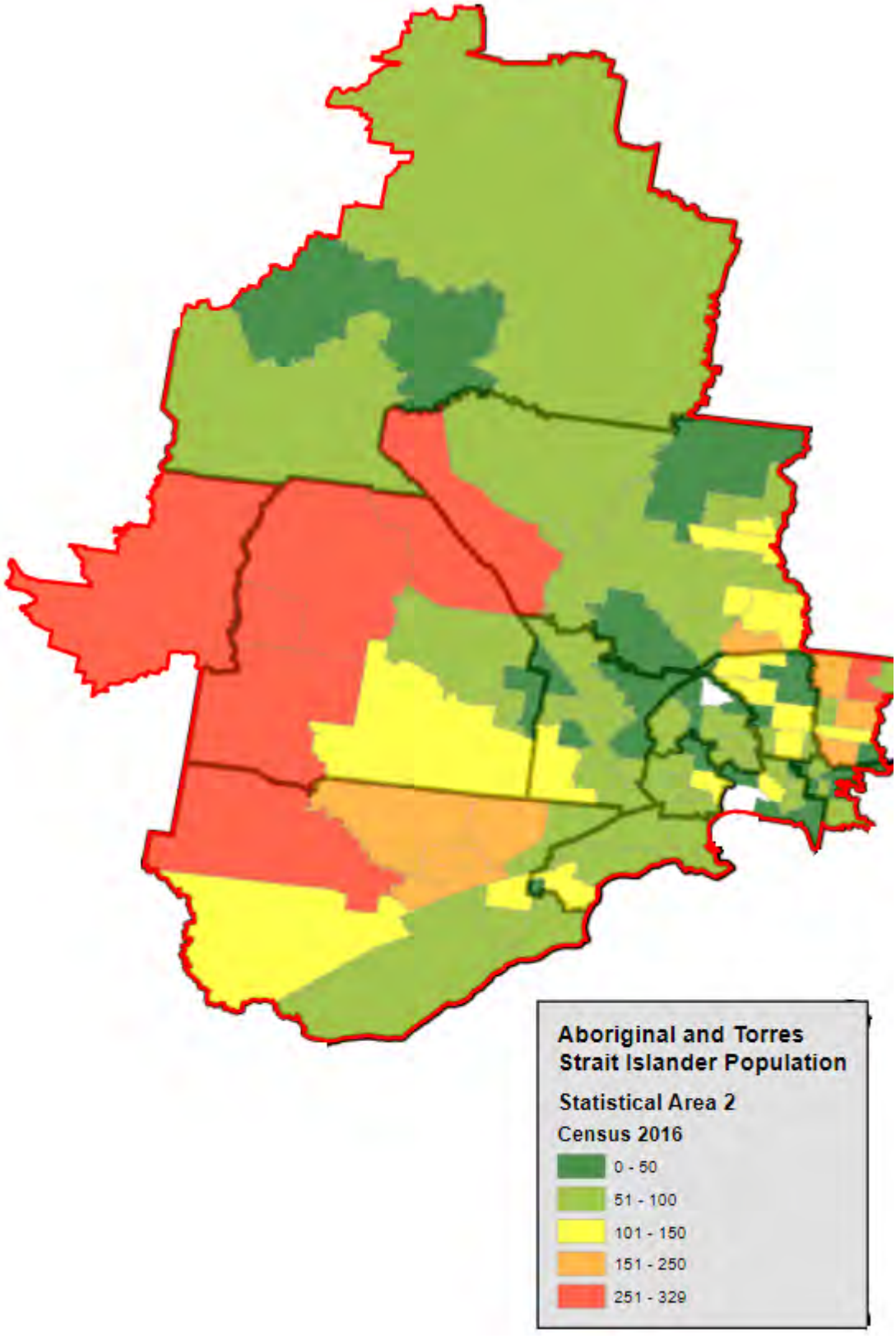
Source: Alcohol and Drug Treatment, POLAR 2017

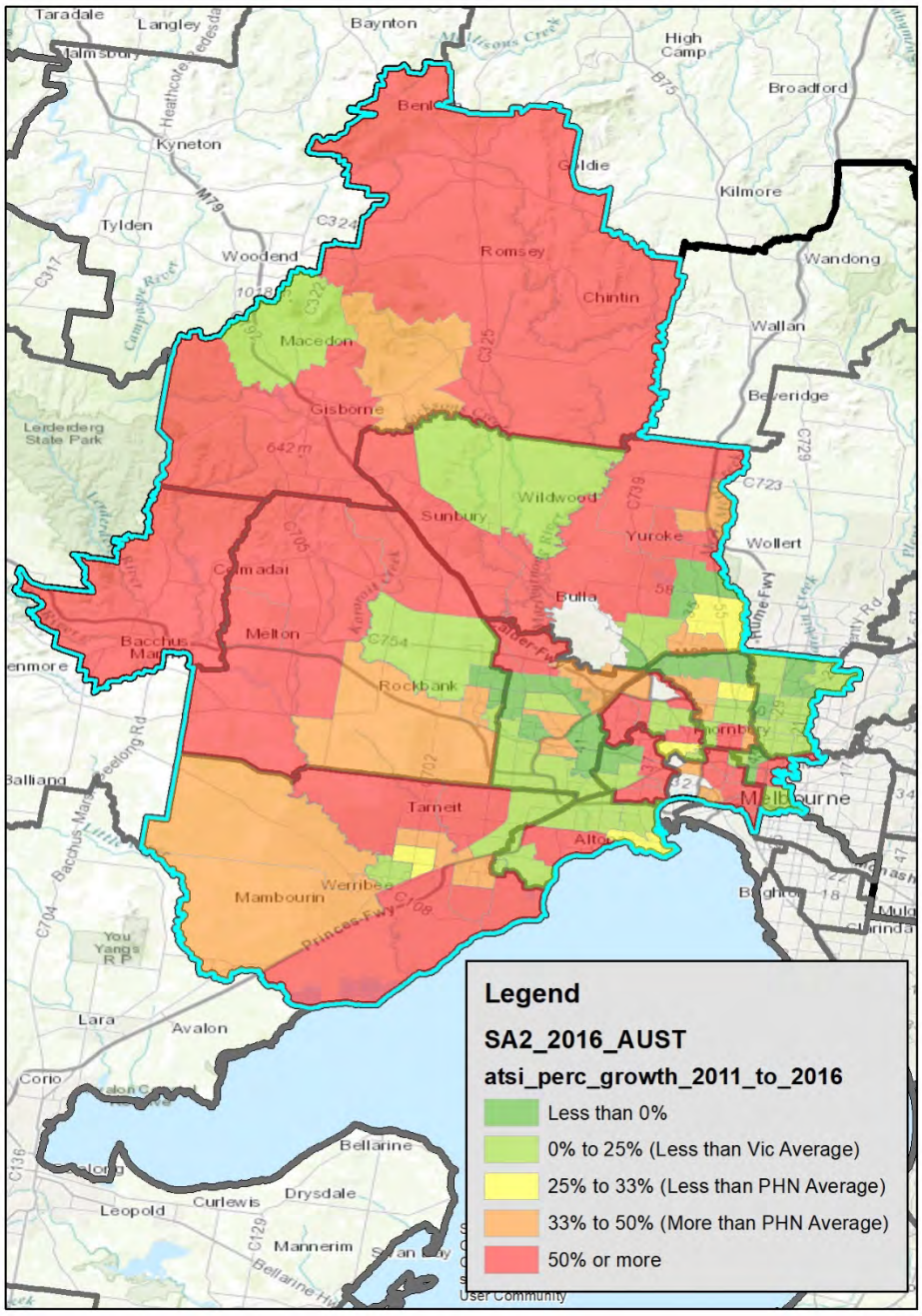
Figure 15: % Aboriginal and non-Aboriginal principal drugs of concern method of use, POLAR AODTS (2012/13-2014/15)



Source: Alcohol and Drug Treatment, POLAR 2017

APPENDIX 1


Aboriginal and Torres Strait Islander Population
Statistical Area 2
Census 2016
0 - 50
51 - 100
101 - 150
151 - 250
251 - 329


Taradale
Langley
Baynton
High Camp
Broadford
Kyneton
Tylden
Woodend
Romsey
Chintin
Kilmore
Wandong
Wallan
Beveridge
Macedon
Gisborne
Lerderderg State Park
Wildwood
Sunbury
Yuroke
Wollert
Calmadai
Bulla
Melton
Bacchus Marsh
Rockbank
Tarneit
Melbourne
Werribee
Mambourin
Princes Fwy
You Yangs R P
Lara
Avalon
Corio
Bellarine
Curlewis
Drysdale
Leopold
Mannerim
Legend
SA2_2016_AUST
atsi_perc_growth_2011_to_2016
Less than 0%
0% to 25% (Less than Vic Average)
25% to 33% (Less than PHN Average)
33% to 50% (More than PHN Average)
50% or more
User Community

APPENDIX 2

Percentage Growth from 2011 Census to 2016 Census

	LGA_name	0-4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 yea	50-54 years	55-59 years	60-64 years	65 years and over	Total
Inner city	Maribyrnong (C)	33.3%	47.6%	-3.2%	20.0%	37.1%	76.9%	83.3%	-2.6%	20.0%	22.7%	61.1%	-11.1%	225.0%	-5.9%	32.4%
Inner city	Melbourne (C)	-12.5%	175.0%	-22.2%	69.7%	122.5%	62.2%	92.3%	135.7%	44.0%	172.7%	200.0%	38.5%	0.0%	200.0%	79.4%
Inner city	Yarra (C)	13.0%	50.0%	-11.8%	22.7%	56.1%	69.7%	-6.7%	-10.3%	3.6%	64.3%	-9.1%	18.8%	111.1%	10.0%	20.1%
Suburban	Brimbank (C)	25.0%	11.9%	11.9%	-12.2%	16.4%	38.5%	39.5%	4.8%	0.0%	15.9%	142.1%	-20.0%	80.0%	83.3%	16.4%
Suburban	Darebin (C)	1.6%	-9.6%	-10.8%	8.6%	-5.1%	33.0%	0.0%	-4.3%	-21.5%	-9.4%	18.5%	42.9%	-11.1%	26.0%	0.5%
Suburban	Hobsons Bay (C)	5.0%	33.3%	40.0%	13.9%	23.5%	51.6%	9.1%	-16.7%	33.3%	10.7%	4.3%	-16.7%	91.7%	9.5%	24.2%
Suburban	Moonee Valley (C)	-25.0%	46.2%	76.2%	23.3%	35.3%	55.2%	70.0%	0.0%	18.2%	72.2%	4.8%	283.3%	0.0%	-4.2%	36.5%
Suburban	Moreland (C)	-5.6%	-9.4%	-12.7%	25.6%	27.6%	15.6%	69.6%	0.0%	-23.5%	61.3%	90.5%	-17.9%	143.8%	-2.4%	16.1%
Growth area	Hume (C)	32.3%	35.5%	27.2%	21.1%	76.1%	43.6%	16.5%	50.0%	4.2%	122.7%	39.6%	63.0%	62.5%	100.0%	39.7%
Growth area	Melton (S)	38.7%	80.2%	36.2%	52.3%	26.9%	149.1%	38.8%	84.6%	40.0%	66.7%	72.4%	221.4%	100.0%	120.0%	63.0%
Growth area	Wyndham (C)	42.5%	54.9%	17.1%	54.0%	42.2%	120.0%	89.7%	39.2%	32.9%	50.0%	24.1%	40.5%	143.8%	88.0%	51.7%
Peri_urban	Macedon Ranges (S)	125.0%	30.4%	7.4%	8.3%	111.1%	100.0%	11.1%	40.0%	-20.0%	125.0%	66.7%	-27.3%	133.3%	200.0%	53.1%
Peri_urban	Moorabool (S)	37.8%	77.8%	64.3%	42.3%	55.6%	136.4%	0.0%	17.6%	-14.3%	15.8%	109.1%	-15.4%	120.0%	71.4%	42.1%
		19.3%	26.0%	13.9%	21.2%	26.9%	38.8%	27.4%	18.9%	6.4%	31.0%	30.8%	22.4%	42.2%	31.9%	25.0%

Maternal and Child Health Service 10 Key Ages and Stages consultations.

LGA	Brimbank	Brimbank	Darebin	Darebin	Hobsons Bay	Hobsons Bay	Hume	Hume	Macedon Ranges	Macedon Ranges	Maribyrnong	Maribyrnong	Melbourne	Melbourne
Status	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal
Home Consultation	102.3	96.7	102.9	96.9	101	100	103.7	106.5	95.9	100	103.5	120	101.6	100
2 Weeks	96.4	86.7	100	68.8	97.3	72.7	98.5	89.1	92.3	100	96.4	120	98.5	100
4 Weeks	95.6	70	96.5	68.8	98.9	81.8	96.6	93.5	93.9	80	97.6	80	95.6	50
8 Weeks	93.2	76.7	94.8	56.3	99.1	81.8	97.2	89.1	98.6	140	95	80	96.5	75
4 Months	92.2	70	92.1	40.6	95.7	72.7	95.2	80.4	101.4	120	90.6	60	89.6	50
8 Months	79.6	50	91.6	62.5	87.2	69.6	83.5	49.4	94.3	111.1	83.8	57.1	81.9	33.3
12 Months	74.5	61.5	82.1	56.3	83.3	87	79.1	44.2	92.6	88.9	82	71.4	81.1	33.3
18 Months	62.2	20.5	73.9	61.5	73.3	70	63.8	41.2	79.4	76.9	71.5	22.2	74.7	0
2 Years	63.2	64.7	72.4	39.4	75.6	75	60.1	54.1	79.9	66.7	65	44.4	70.7	0
3_5 Years	65	32	62.5	26.4	62.1	47.1	60.4	45.5	82	133.3	53.6	22.2	54.9	28.6

LGA	Melton	Melton	Moonee Valley	Moonee Valley	Moorabool	Moorabool	Moreland	Moreland	Wyndham	Wyndham	Yarra	Yarra	Total for Victoria	Total for Victoria
Status	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal	All	Aboriginal
Home Consultation	101.7	98	99.6	50	98.6	90.9	102.2	100	98.1	102.4	104.2	100	100.9	96.1
2 Weeks	96.9	83.7	98.3	50	96.7	72.7	96.2	82.4	92.8	95.1	100.3	100	97.4	85.6
4 Weeks	95.5	81.6	97.6	75	97	90.9	97.9	105.9	94.4	97.6	100.7	112.5	97.2	84.4
8 Weeks	94.5	73.5	97.4	125	100.8	100	96.3	88.2	91.9	78	99.9	112.5	96.2	82.3
4 Months	91.7	53.1	96.8	75	101.1	90.9	93.1	105.9	89.3	70.7	97.4	75	94.4	78.8
8 Months	79.5	42.5	92.8	100	92.8	80	85	77.4	74.9	67.5	88	100	86.4	68.4
12 Months	75.3	40	92	80	89.1	80	75.4	64.5	68.6	54.5	86.3	20	83.4	66.4
18 Months	66.8	36.4	87.6	72.7	74.7	80	67.6	48	61.9	50.7	75	100	75	57.4
2 Years	62.4	42.9	82.4	80	81.5	81.8	66.2	54.5	55.3	46.2	79.6	50	72.8	55.5
3_5 Years	59.8	59.6	76	83.3	84.8	63.2	61.1	32.3	57	57.1	70.6	28.6	66.1	51.2

SUICIDE PREVENTION PROFILE

SUMMARY

- Suicide remains the leading cause of death for Australians between the ages of 15 and 44 years.
- In Victoria, age-standardised suicide rates are 3 times greater in males than females.
- Aboriginal and Torres Strait Islander age standardised suicide rates occurs at double the rate of other Australians.
- Within the North-Western Melbourne region, Macedon Ranges has the highest average annual age-standardised rate of suicide for adults, this trend is also evident in young people.
- Major depression, relationship breakdown, previous suicide attempts, alcohol use, financial factors, rural location, media coverage and Indigenous heritage are all correlated with suicide.
- Aftercare and crisis care, psychosocial and pharmacotherapy treatment, GP capacity building and support, and community campaigns are some of the evidence-based strategies that can support suicide prevention.

ACRONYMS

ABS - Australian Bureau of Statistics

ASR - Age Standardised Rates

DALY - Disability-adjusted life years, measure in years of healthy life lost

MBS - Medicare Benefits Schedule

NWMPHN - North Western Melbourne Primary Health Network

YLD - Years lived with disability, measure in years lost in less than full health

YLL - Years of life lost, measure in years lost due to premature death before life expectancy

ANALYSIS NOTES

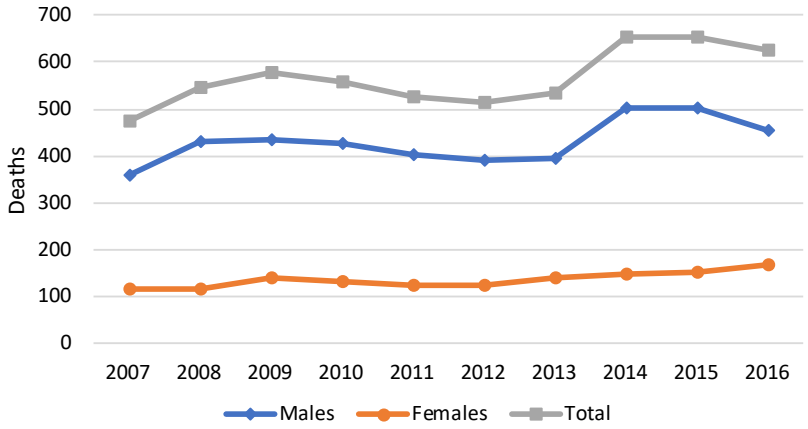
Throughout this profile, colour schemes have been added to tables to provide a ranking within a comparison population. In most analyses where Local Government Area (LGA) values or rates are displayed, the colours correspond to the decile of the value within the distribution comprised of Greater Melbourne LGAs.

In other words, the 31 Greater Melbourne LGA's are ranked in order and arranged into approximately 10 groups (~3 in each). For purposes of consistency, if an LGA within the NWMPHN catchment is performing worse than the median Greater Melbourne LGA it is red, the deeper the red the worse it is. The better performing LGAs are coloured varying shades of green.

ABOUT SUICIDE

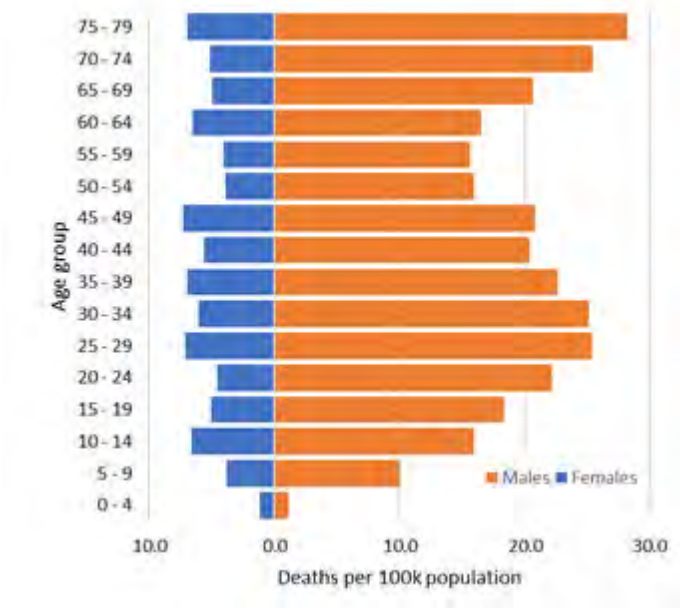
Suicide is the leading cause of death for Australians aged between 15 and 44 years, and in Victoria is the cause of death in more than 600 cases per year. The number of deaths has varied across years and has appeared to have plateaued following a large increase in 2014 (Figure 1).

Figure 1: Intentional self-harm, Victoria, Number of deaths, Sex, 2007–2016 (ABS, 3303.0 Causes of Death, Australia, 2016)



In 2016, the national age standardised suicide death rate was 11.8 per 100,000 people, with Victoria having a lower suicide death rate of 9.9 per 100,000 people. Death rates are higher in males than females (19.3 per 100,000 and 6.1 per 100,000 respectively) (Figure 2, p.2).[1]

Figure 2: Age-specific suicide rates, by sex, Australia, 2010–11 (deaths per 100,000 population)



Source: AIHW https://www.aihw.gov.au/reports/injury/suicide-hospitalised-self-harm-in-australia/data

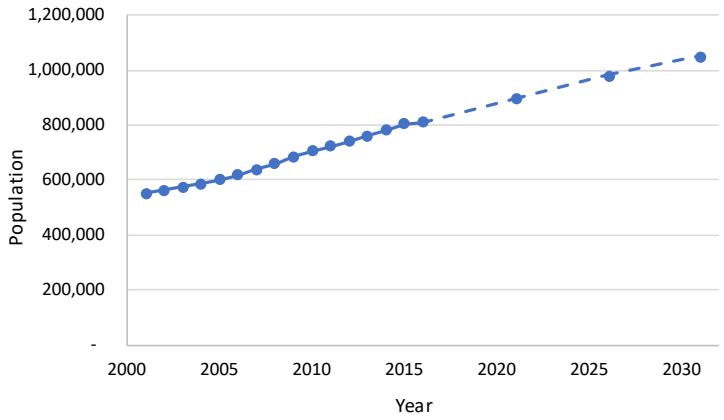
[1] ABS (2016) 3303.0 Causes of Death, Australia, 2016. Released at 11.30am (Canberra time) 27 September 2017

TARGET POPULATION FOR NWMPHN

An understanding of the distribution of the target population for interventions by NWMPHN is essential in developing an understanding of the potential demand and location of need.

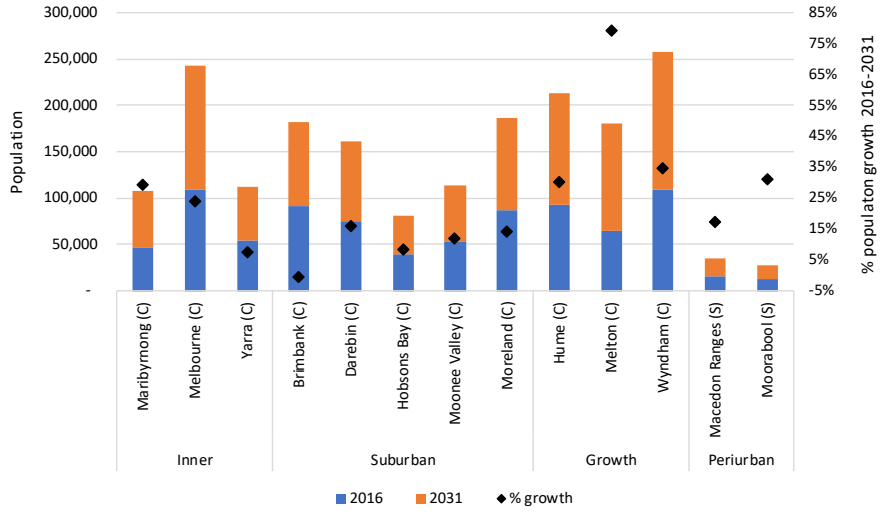
Given the highest prevalence is in the 15-44 age group, this cohort is of key interest. It is estimated that there are 851,000 people aged 15-44 years in the NWMPHN area, with this population projected to increase by 24 per cent to 1,052,000 people by 2031 (Figure 3, below).

Figure 3: Historical and forecast population of people aged 15 to 44 years in NWMPHN catchment (ABS ERP, VIF2016)



Within the region, the municipalities of Melbourne and Wyndham have the largest number of people aged 15-44 years. Additionally, Melton is forecast to have the highest proportional growth in the cohort, of more than 75 per cent, by 2031 (Figure 4, below).

Figure 4: 2016 and forecast 2031 population of people aged 15-44 by LGA NWMPHN catchment (ABS Census and VIF2016)



Analysis of suicide rates across local government areas illustrates a variation in incidence across the NWMPHN area, with most areas lower than the Victorian and Australian average rate (Figure 5). Macedon Ranges is the only municipality that has a rate that is statistically significantly higher than the Australian rate (Table 8).

With regard to youth suicide mortality (15-24 years), Macedon Ranges is again the municipality with the highest rate (Figure 6), although it is not significantly different to the overall Australian rate (Table 10, p.17).

These data illustrate the variation in population rates across areas. When combined with the estimated population in the target age group, it is apparent that the highest volume of suicide is likely to occur in the

Melbourne, Brimbank and Wyndham municipalities, despite having low prevalence rates. This is driven by these locations having the highest combination of populations and per capita rates[2] . (Figure 8, p.5).

Consistent with these trends, the hospitalization rate for intentional self-harm was lowest in the NWMPHN across all PHNs (84 per 100,00 people), the national rate being 161 per 100,000 people (Figure 7).

Figure 5: Deaths from suicide and self-inflicted injuries, 0 to 74 years 2010 to 2014 Average annual ASR per 100,000 (PHIDU, 2017)

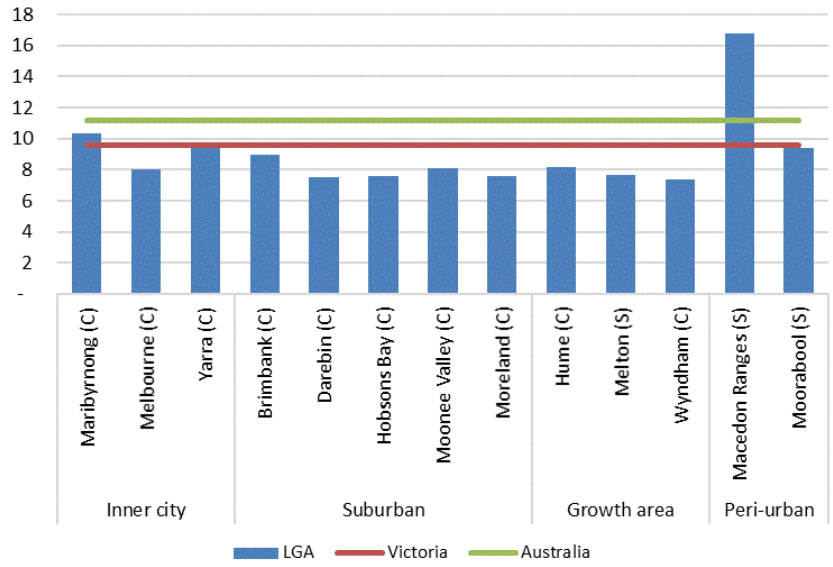
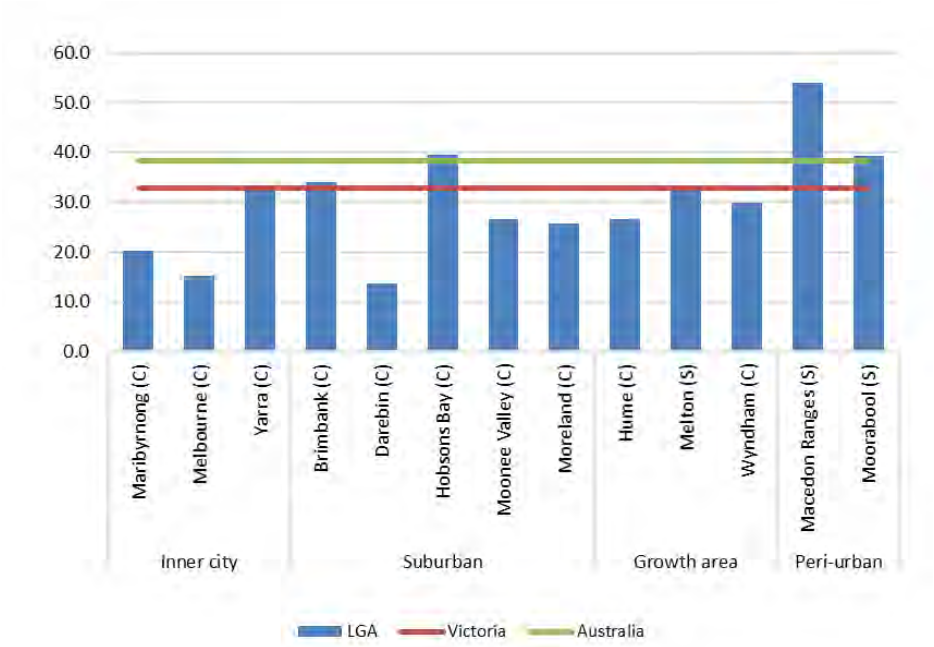
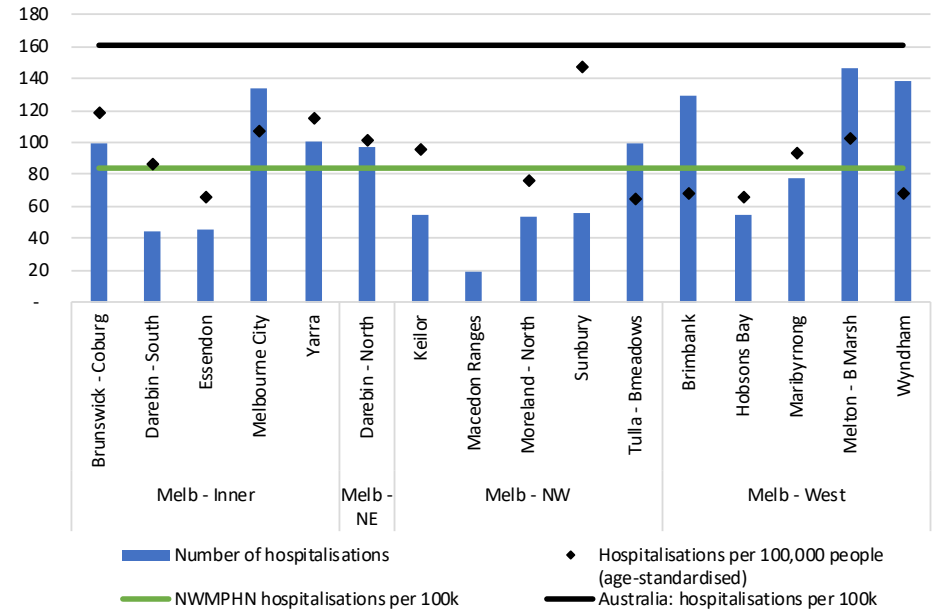


Figure 6: Youth mortality: Deaths of persons aged 15 to 24 years, 2010 to 2014, Average annual ASR per 100,000 (PHIDU, 2017)



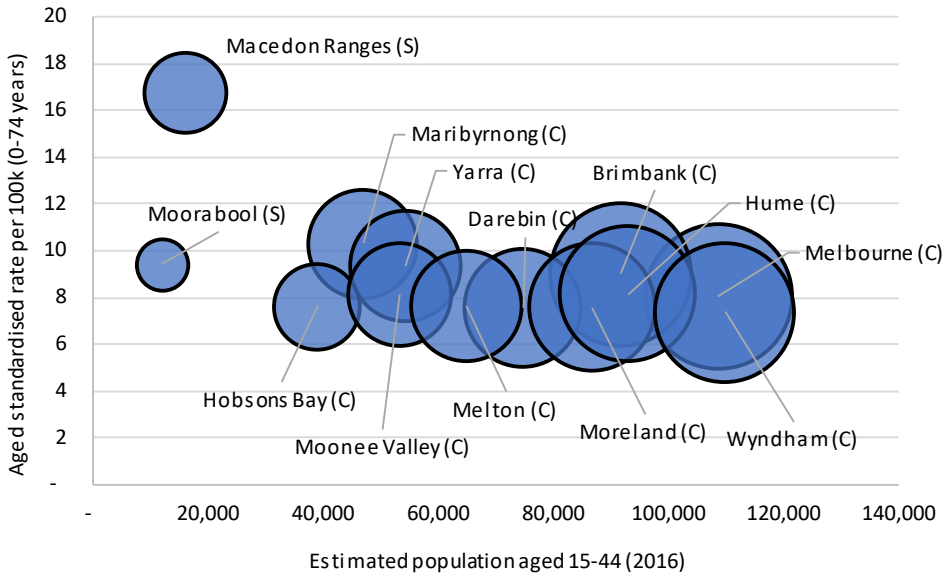
[2] AIHW, Healthy Communities: Hospitalisations for mental health conditions and intentional self-harm in 2014-15. 2017

Figure 7: NWMPHN SA3, national and metropolitan/regional hospitalisations for intentional self-harm (same day and overnight), 2014–15



Source: Healthy Communities: Hospitalisations for mental health conditions and intentional self-harm in 2014-15 (2017)
https://www.myhealthycommunities.gov.au/our-reports/mental-health-and-intentional-self-harm/february-2017/web-update

Figure 8: Estimated incidence of suicide by LGA – NWMPHN. Bubble size notates the estimated number of suicides by LGA.



Source: NWMPHN analysis of ABS ERP, PHIDU 2017.

Other demographic features

The incidence of suicide and hospitalisation's due to self-harm has been demonstrated to be higher across some demographic groups. These include:

- disadvantaged communities
- remote communities
- Aboriginal and Torres Straight Islanders with
    - the suicide rate is nearly triple the national rate (5.2 per cent vs 1.8 per cent) and the age standardised all causes Aboriginal death rate was double that of non-Indigenous (25.5 vs 12.5 per 100,000).
    - Intentional self-harm rates for children and young people aged 5-17 years was 4 times greater in Indigenous than non-Indigenous people (9.3 vs 1.8 per 100,000)[3].

Additionally, recent studies of serving and ex-serving Australian Defence Force (ADF) personnel has illustrated a non-statistically significant lower rate among serving men and a statistically significant higher rate among ex-serving men, potentially pointing to an unmet need for suicide prevention interventions when people leave the ADF.[4]

[3] Lifeline. Statistics on Suicide in Australia. 2015 [cited 2017 18/08/2017]; Available from: https://www.lifeline.org.au/about-lifeline/lifeline-information/statistics-on-suicide-in-australia

[4] Australian Institute of Health and Welfare 2016. Incidence of suicide among serving and ex-serving Australian Defence Force personnel 2001–2014. Cat. no. PHE 212. Canberra: AIHW. ISBN 978-1-76054-044-9 (PDF)

CAUSES OF SUICIDE

Beaton et al reported in 2012 that suicide was correlated to a diagnosis of major depression, relationship breakdown, previous suicide attempts, alcohol use, financial factors, rural location and Indigenous heritage[5]. Additionally, media reports on suicide and sexual orientation have also been shown to influence suicide[6][7].

DEPRESSION

The prevalence of depression varies across life stages and a range of other factors. The proportion of people that had a lifetime prevalence of self-reported doctor diagnosed depression or anxiety is approximately a quarter of the population in Victoria. The highest rates were in Moorabool, which Table 1 (below) shows were 1.2 times higher than the Victorian percentage (29.3 per cent vs 24.2 per cent).

Additionally, the prescribing rates of antidepressant medicines can be used to estimate the variation in need across the region, although variation in practice standards and patients behaviours may be factors in the differences between areas. These data do, however, illustrate higher prescribing rates in the outer metropolitan growth areas and per-urban fringe.

Table 1: Antidepressant medicines dispensing, MBS (ASR per 100,000) and proportion of persons with lifetime prevalence of self-reported doctor diagnosed depression or anxiety

		Antidepressant medicines dispensing, MBS (ASR per 100,000)			% depression or anxiety
Region	LGA Name	<17 years	18-64 years	>65 years	
Inner city	Maribyrnong (C)	5,294	79,564	171,740	16
	Melbourne (C)	2,679	64,188	150,572	27
	Yarra (C)	6,191	88,414	174,144	24
Suburban	Brimbank (C)	3,609	73,869	162,730	17
	Darebin (C)	4,400	83,782	192,085	28
	Hobsons Bay (C)	5,311	94,601	185,406	17
	Moonee Valley (C)	5,345	83,522	176,533	24
	Moreland (C)	5,389	85,855	199,186	25
Growth area	Hume (C)	3,807	84,455	194,029	20
	Melton (C)	5,983	101,895	227,323	22
	Wyndham (C)	6,714	83,950	192,342	23
Peri-urban	Macedon Ranges (S)	8,097	96,307	178,070	20
	Moorabool (S)	13,379	140,447	236,626	29
NWMPHN		**5,861**	**89,296**	**187,753**	**23**
Victoria		**8,813**	**121,623**	**195,907**	**24**

Source: Victorian Population Health Survey 2014, NHPA 2014-15

Hospitalisation data for 2014-15 within the NWMPHN showed age-standardised rates per 100,000 (Table 2, below). These data illustrate a variation in aged standardised rates across the PHN area, with NWMPHN having a rate lower than the Australian average.

[5] Beaton, S.a.F., P., Insights into men's suicide. InPsych, 2012. 34(4).
[6] Council, A.P., Specific Standards on Coverage of Suicide. 2014, Australian Press Council.
[7] Rosenstreich, G., LGBTI People Mental Health and Suicide. . 2013, National LGBTI Health Alliance: Sydney

Table 2: NWMPHN SA3, national and metropolitan/regional hospitalisations for depression (same day and overnight), 2014–15

SA4	SA3	Number of hospitalisations	Hospitalisations per 100,000 people (age-standardised)	Bed days per 100,000 people (age-standardised)
Melbourne - Inner	Brunswick - Coburg	109	134	1,816
	Darebin - South	41	80	1,185
	Essendon	84	126	1,742
	Melbourne City	87	83	1,424
	Yarra	94	109	1,652
Melbourne - NE	Darebin - North	87	87	1,440
Melbourne - NW	Keilor	55	89	1,453
	Macedon Ranges	20	77	1,567
	Moreland - North	77	102	1,377
	Sunbury	51	127	1,334
	Tullamarine - Broadmeadows	108	72	1,024
Melbourne - West	Brimbank	137	71	1,089
	Hobsons Bay	84	99	1,623
	Maribyrnong	84	98	1,441
	Melton - Bacchus Marsh	148	108	1,692
	Wyndham	136	74	1,105
North Western Melbourne		**1,400**	**90**	**1,351**
Australian - Metropolitan		-	110	1,748
Australian - Regional		-	132	1,556
National		**-**	**118**	**1,678**

Source: Healthy Communities: Hospitalisations for mental health conditions and intentional self-harm in 2014-15 (2017) https://www.myhealthycommunities.gov.au/our-reports/mental-health-and-intentional-self-harm/february-2017/web-update *Accessed 20 November 2017*

Note: Highlights on a red (poorer performance) to green (better performance) scale. Np= data is not provided as it could lead to the identification of individuals.

ALCOHOL USE

Alcohol can trigger impulsive behaviours causing people to feel hopeless and depressed. It can cloud judgment and problem-solving and is therefore associated with suicide[8].

Inner city locations (Melbourne, Yarra and Maribyrnong) are associated with higher rates of alcohol related ambulance use and emergency department presentations.

Alcohol and Drug Information Services (ADIS) report drug treatment episode of care total alcohol rates at 45.4 per 10,000 people in Victoria[9] . Higher rates are reported in Yarra and Maribyrnong for drug treatment episodes of care, at 65.8 and 55 per 10,000 persons respectively (Table 3, below).

Table 3: Alcohol related Emergency Department, Ambulance presentations and ADIS rate ASR per 100,000 (2014-15)

Region	LGA Name	ED presentations, 15-24yo	ED presentations, total	ADIS service rates, total	Alcohol related ambulance episodes
Inner city	Maribyrnong (C)	25	19	55	56
	Melbourne (C)	21	26	32	160
	Yarra (C)	29	30	66	70
Suburban	Brimbank (C)	23	12	37	31
	Darebin (C)	19	14	44	31
	Hobsons Bay (C)	27	16	46	31
	Moonee Valley (C)	20	13	33	31
	Moreland (C)	12	13	48	30
Growth area	Hume (C)	13	9	36	25
	Melton (C)	13	8	36	27
	Wyndham (C)	13	6	32	18
Peri-urban	Macedon Ranges (S)	22	7	44	20
	Moorabool (S)	25	12	37	27
NWMPHN		**20**	**14**	**42**	**43**
Victoria		**25**	**14**	**45**	**34**

Source: AODStats

[8] Australian Institute of Health and Welfare 2016. Incidence of suicide among serving and ex-serving Australian Defence Force personnel 2001–2014. Cat. no. PHE 212. Canberra: AIHW. ISBN 978-1-76054-044-9 (PDF)

[9] AODstats [Internet]. 2014. Available from: http://aodstats.org.au/VicLGA/.

FINANCIAL FACTORS

Financial stress may play a role in suicide. It has been suggested that the effect of financial crisis can lead to higher levels of suicide, in particular among males[10].

Table 4 (below) reports on data relating to the regional variation in relation to personal financial indicators. Brimbank and Hume have the highest age-standardised rates overall for financial stress and unemployment percentage within the NWMPHN. Melbourne has the highest percentage of low income households under financial stress from mortgage and rent.

Table 4: Personal and financial stressors

Region	LGA Name	>17yo, who could raise $2k in a week	>17yo, on Govt support income last year	% unemployed	% reporting mortgage or rent stress
Inner city	Maribyrnong (C)	81	22	7	37
	Melbourne (C)	86	9	4	65
	Yarra (C)	90	14	6	38
Suburban	Brimbank (C)	73	27	10	31
	Darebin (C)	83	23	6	31
	Hobsons Bay (C)	84	21	6	28
	Moonee Valley (C)	88	19	5	27
	Moreland (C)	84	22	7	30
Growth area	Hume (C)	74	25	9	39
	Melton (C)	80	19	8	41
	Wyndham (C)	83	16	7	43
Peri-urban	Macedon Ranges (S)	89	14	3	27
	Moorabool (S)	83	19	6	27
NWMPHN		**82**	**20**	**7**	
Victoria		**84**	**19**	**6**	

Source: Victorian Population Health Survey and ABS Census

[10] Milner A, Hjelmeland H, Arensman E, Leo D. Social-Environmental Factors and Suicide Mortality: A Narrative Review of over 200 Articles. Sociology Mind. 2013;3:137-48

ABORIGINAL HERITAGE

While suicide is believed to have been a rare occurrence among the Aboriginal and Torres Strait Islander people of Australia in pre-colonial times, it has become increasingly prevalent over recent decade. Rates accelerated after the 1980s, albeit with variations in rates and in geographical distribution from year to year.[11]

For example, the Royal Commission into Aboriginal Deaths in Custody (RCIADIC, 1991) drew attention to the links between substance misuse and mental health disorders in the years and months before most of the deaths that it investigated. It also highlighted the disproportionate number of these deaths (over three-quarters) where there was a history of having been forcibly separated from natural families as children. The interconnected issues of cultural dislocation, personal trauma and the ongoing stresses of disadvantage, racism, alienation and exclusion were all acknowledged by the Commission as contributing to the heightened risk of mental health problems, substance misuse and suicide.[12]

The Aboriginal population in the NWMPHN area was estimated to be 10,144 at the 2016 Census. This is 0.6 per cent of the total NWMPHN population, a smaller proportion than the total Victorian rate of 0.85 per cent.

Among the 13 LGAs in NWMPHN, Moorabool has the highest population proportion of Aboriginal residents compared to non-Aboriginal (1.1 per cent), followed by Melton (0.9 per cent).

The LGA's with the highest total number of Aboriginal people are Wyndham, Hume and Melton. This profile of location is a meaningful change in 2016, from the longstanding profile of Darebin as the municipality with the highest number of Aboriginal persons. This results in these growth areas being the location of 44 per cent of the Aboriginal people within the region (Table 5, below).

Table 5: Proportion of Indigenous population to the total population

Region	LGA name	2011 popn.	2016 popn.	% 2016 LGA popn.	% of NWMPHN 2016	Growth 2011-2016	% growth 2011-2016
Inner city	Maribyrnong (C)	324	429	0.5%	4.2%	105	32%
	Melbourne (C)	262	471	0.3%	4.6%	209	80%
	Yarra (C)	318	386	0.4%	3.8%	68	21%
Suburban	Brimbank (C)	700	818	0.4%	8.1%	118	17%
	Darebin (C)	1,156	1,167	0.8%	11.5%	11	1%
	Hobsons Bay (C)	393	490	0.6%	4.8%	97	25%
	Moonee Valley (C)	315	430	0.4%	4.2%	115	37%
	Moreland (C)	702	811	0.5%	8.0%	109	16%
Growth area	Hume (C)	1,046	1,455	0.7%	14.3%	409	39%
	Melton (C)	789	1,283	0.9%	12.6%	494	63%
	Wyndham (C)	1,144	1,742	0.8%	17.2%	598	52%
Periurban	Macedon Ranges (S)	194	297	0.6%	2.9%	103	53%
	Moorabool (S)	259	365	1.1%	3.6%	106	41%
	NWMPHN	**7,602**	**10,144**	**0.6%**	**100.0%**	**2,542**	**33%**
	Victoria	**37,992**	**47,796**	**0.8%**		**4,979**	**13%**

Source: ABS Census 2011 and 2016

[11] Australian Bureau of Statistics (ABS) (2012) Suicides in Australia, 2010. Catalogue 3309.0. Canberra: ABS.
[12] Dudgeon P, Milroy H, Walker R, (2014) Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice. Department of The Prime Minister and Cabinet.

RELATIONSHIP BREAKDOWN

Risk of suicide has been shown to be high among people that have gone through a relationship breakdown, especially younger males aged 15-24 years[13].

While the prevalence of relationship breakdown is not reported by age group, the ABS Census reports on the marital status of Australians. Data for 2016 in the table below shows the percentage of people that have been divorced or separated in the NWMPHN, with the highest proportions in Moorabool and Hobsons Bay.

Table 6: Percentage of people divorced or separated (ABS Census, 2016)

Region	LGA Name	% divorced or separated
Inner city	Maribyrnong (C)	10%
	Melbourne (C)	7%
	Yarra (C)	10%
Suburban	Brimbank (C)	11%
	Darebin (C)	10%
	Hobsons Bay (C)	12%
	Moonee Valley (C)	10%
	Moreland (C)	9%
Growth area	Hume (C)	11%
	Melton (C)	11%
	Wyndham (C)	10%
Peri-urban	Macedon Ranges (S)	11%
	Moorabool (S)	12%
Victoria		**11%**

Source: ABS Census 2016

OTHER CAUSES

Reporting suicides and suicidal behaviours in the media can negatively impact and increase the risk of those who are vulnerable to suicide[14] . Media reports of suicides can also lead to imitative suicidal behaviours (copycat behaviour). A resource by Mindframe offers advice to support media professionals when reporting on suicide and mental illness[15] . Recently, researchers in the USA found that internet searches for suicide after airing the Netflix series, "*13 Reasons Why*", was significantly greater than expected[16] . There have also been potential benefits of media noted in playing a positive role in suicide prevention. Help-seeking reporting may encourage adaptive behaviour in susceptible individuals[17] .

About 42 per cent of people aged 16-64 years with severe disability have had suicidal thoughts, including 18 per cent who have attempted suicide[18] . The age standardised rate of people receiving overall home and community care living in their communities in NWMPHN is shown in Table 7 below. Moorabool, Melton and Macedon Ranges show the highest rates which are 1.4, 1.3 and 1.3 times higher than the Victorian level respectively (121.6, 111.6 and 105.6 vs 84.3).

[13] Wyder M, Ward P et al. Separation as a suicide risk factor. Journal of Affective Disorders. 2009; 116:208-13
[14] Hawton K, Williams K. Influences of the media on suicide : Researchers, policy makers, and media personnel need to collaborate on guidelines. BMJ : British Medical Journal. 2002;325(7377):1374-5
[15] Everymind. Reporting suicide and mental Illness: A Mindframe resource for media professionals. Newcastle: Department of Health; 2014
[16] Ayers JW, Althouse BM, Leas EC, Dredze M, Allem J. Internet searches for suicide following the release of 13 reasons why. JAMA Internal Medicine. 2017
[17] Pirkis J, Skehan J. Suicide and the media: The role of psychologist. InPsych. 2016;38(1)
[18] 1Welfare AIoHa. Health of Australians with disability: health status and risk factors. Canberra Australia: AIHW; 2010.

Table 7: Total instances of assistance in the Home and Community Care Program (PHIDU 2012/13)

Region	LGA Name	Total instances of assistance (ASR per 1000)
Inner city	Maribyrnong (C)	89
	Melbourne (C)	96
	Yarra (C)	94
Suburban	Brimbank (C)	71
	Darebin (C)	79
	Hobsons Bay (C)	76
	Moonee Valley (C)	70
	Moreland (C)	83
Growth area	Hume (C)	85
	Melton (S)	112
	Wyndham (C)	75
Peri-urban	Macedon Ranges (S)	106
	Moorabool (S)	122

The trans pathways study surveyed trans individuals aged 14-25 and parents with a trans child aged 25 years or younger. It revealed that mental health related issues were common with trans gender youth; 75 per cent of participants had at some time been diagnosed with depression, 72 per cent with an anxiety disorder, 8 per cent self-harmed and 48 per cent attempted suicide[19] .

[19] Strauss P, Cook A, Winter S, Watson V, Wright Toussaint D, Lin A. Trans Pathways: the mental health experiences and care pathways of trans young people. Perth: Telethon Kids Institute; 2017

SUICIDE PREVENTION AND TREATMENT

A Black Dog Institute 2016 report offered nine evidence based intervention strategies included in the Australian system approach model that PHNs could implement[20] . These strategies were:

- Individual based: Aftercare and crisis care, psychosocial and pharmacotherapy treatments, GP capacity building and support, frontline staff training and gatekeeper training.
- Population based: School programs, community campaigns, media guidelines and means restrictions.

Prioritising these strategies regarding the existing suicide prevention activities within the NWMPHN is recommended.

AFTER CARE AND CRISIS CARE

People that have attempted suicide have a higher chance of subsequent suicide[21] . Reaching out to people that have attempted suicide when they leave hospital is achieved by ensuring there is a chain of care that links general hospitals and community aftercare services.

Table 8 (below) provides data on the distribution of hospital presentation for suicide attempts, with 8120 presentations identified between 2008/09-2015/16, with the highest volume from Wyndham, Hume and Brimbank. The highest rate per 100,000 was found in Moorabool, followed by Maribyrnong and Wyndham, at 193.5, 146.8 and 134.8 respectively

Table 8: Hospital presentation with a diagnosis of suicide attempt/ideation (VEMD 2008/09-2015/16)

Region	LGA Name	Presentation Count	Rate per 100K
Inner city	Maribyrnong (C)	639	146.8
	Melbourne (C)	380	61.3
	Yarra (C)	399	109.1
Suburban	Brimbank (C)	1034	94.0
	Darebin (C)	860	106.3
	Hobsons Bay (C)	641	130.6
	Moonee Valley (C)	212	54.5
	Moreland (C)	462	57.5
Growth area	Hume (C)	1115	110.1
	Melton (S)	770	124.0
	Wyndham (C)	1382	134.8
Peri-urban	Macedon Ranges (S)	76	99.1
	Moorabool (S)	150	193.5

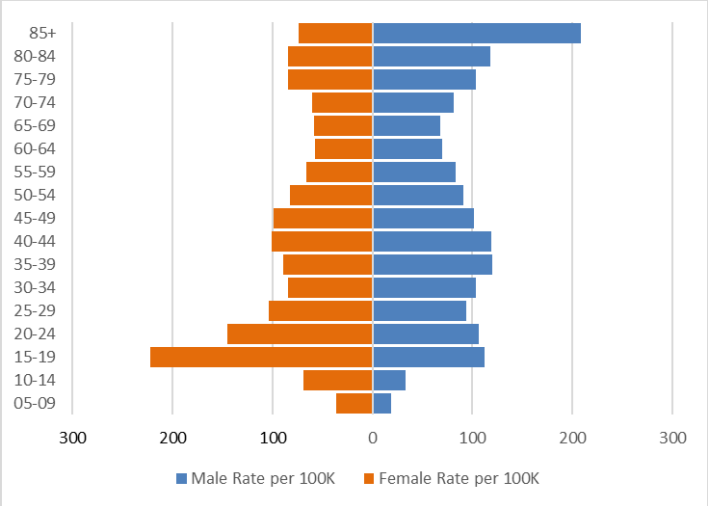
Figure 9 (below) illustrates the hospital presentation by age-group of people that have been discharged with a diagnosis of suicide attempt from within the NWMPHN area. Age-groups 15-19 and 20-24 have the highest rate of people that have been discharged with a diagnosis of suicide attempt/ideation harm at 168.5 and 126 per 100,000 persons. When split by gender, females have higher rates than male for 5-29 ages (age-group 15-19 that is 2 times higher, 222.1 vs 112). For other aged groups, the male separation rate is higher, and especially for 85 and over, where men are almost three time higher (208.8 vs 74.2 per 100,000).

Table 11 provides data on the distribution of hospitalisation for intentional self-harm, with 1350 episodes identified in 2014-15, with the highest volume from Melton, Wyndham and Melbourne City.

[20] Ridani R, Torok M, Shand F, Holland C, Murray S, Borrowdale K, et al. An evidence-based systems approach to suicide prevention: guidance on planning, commissioning, and monitoring. Sydney, Australia: Black Dog Institute.; 2016

[21] ibid

Figure 9: Suicide attempt/ideation hospital presentation by age group, NWMPHN (2008/09-2015/16) (VEMD)



PSYCHOSICAL AND PHARMCOTHERAPY TREATEMENT

Psychosocial and pharmacotherapy are two treatment options for people that have attempted suicide or people with suicidal thoughts. Table 1 (p.7) shows antidepressant medicines dispensing, MBS (ASR per 100,000) and proportion of persons with lifetime prevalence of self-reported doctor diagnosed depression or anxiety. Moorabool has highest cases of antidepressant medicine dispensing per 100k and proportion of persons with lifetime prevalence of self-reported doctor diagnosed depression or anxiety. This might be a consideration used to treat the highest percentage rate of people with self-reported doctor diagnosed depression or anxiety in that area.

Figure 10 below illustrates where the patients who attempted suicide were referred to before being discharged. 14 per cent of the referrals were to local medical officers and 7.4 per cent were to mental health community services. Seven per cent were not referred to any support services. Data on where they were referred to on departure was missing or not applicable for 61 per cent of the presentations. Figure 11 showed a larger proportion (41 per cent) had medical health community services arranged before discharge, followed by referral to GP (21.8 per cent) and no referral (8.2 per cent) arranged before discharge.

Figure 9: Proportion of presentation for suicide attempt by discharge referral location (POLAR VEMD, 2008/09-2015/16)

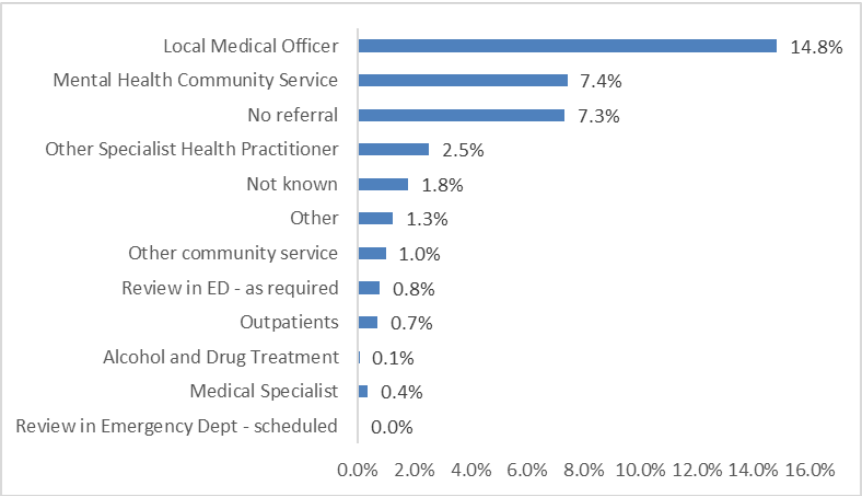
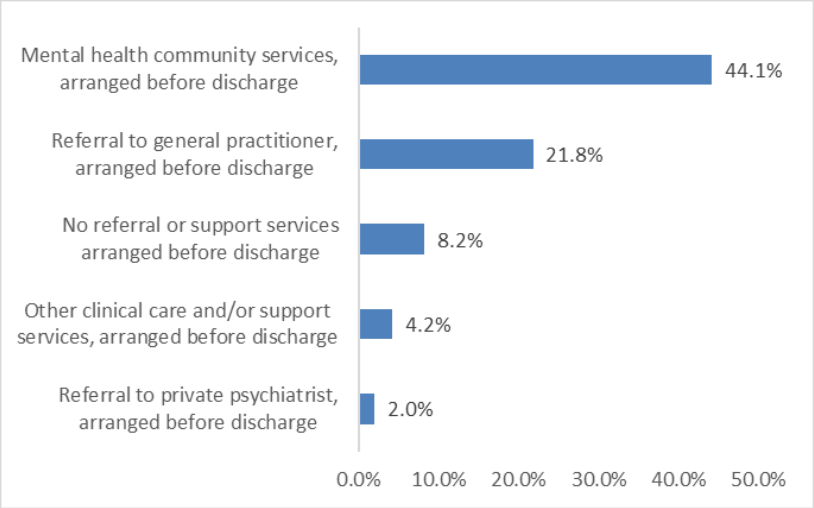


Figure 101: Proportion of separations for suicide attempt by discharge referral location (POLAR VAED, 2012/13-2015/16)



COMMUNITY CAMPAIGNS

To improve mental health literacy in the general population, suicide awareness campaigns are particularly suited to reach at-risk people that would normally avoid seeking help and additionally can improve the public's knowledge of suicide.

Little to no evidence suggests that community campaigns reduce suicidal behaviours, and that is why it should be delivered in conjunction with other strategies like GP capacity building[22] .

Recently around Australia, R U OK? Conversation Convoy has been visiting over 20 communities to provide resources for communities and individuals to assist in suicide prevention[23].

GP CAPACITY BUILDING AND SUPPORT AND GATE KEEPER TRAINING

Having an effective general practitioner care can greatly decrease suicide deaths and attempts, especially when a suicide prevention program is incorporated[24][25] . Gate keepers are the people most likely to encounter at-risk individuals, for example would be GPS, nurses, cops and teachers[26] .

There are 540 GP clinics servicing the NWMPHN region and primary care physician education and capacity building is an effective intervention to reduce suicide rates and identify suicidal behaviour[27].

Figure 10 and 11 above shows patients being referred to GPs after separation from intentional self-harm (35%), which is higher than other services. The "GP in schools" initiative could be incorporated with the school programs to promote suicide prevention continued care of young individuals.

[22] Ridani R, Torok M, Shand F, Holland C, Murray S, Borrowdale K, et al. An evidence-based systems approach to suicide prevention: guidance on planning, commissioning, and monitoring. Sydney, Australia: Black Dog Institute.; 2016

[23] OK? RU. R U OK? Conversation Convoy 2017 [cited 2017 14/09/2017]. Available from: https://www.ruok.org.au/conversation-convoy.

[24] Almeida OP, Pirkis J, Kerse N, Sim M, Flicker L, Snowdon J, et al. A randomized trial to reduce the prevalence of depression and self-harm behavior in older primary care patients. Annals of family medicine. 2012;10(4):347-56

[25] Saini P, Windfuhr K, Pearson A, Da Cruz D, Miles C, Cordingley L, et al. Suicide prevention in primary care: General practitioners' views on service availability. BMC Research Notes. 2010;3(1):246

[26] Ridani R et al

[27] Ridani R et al

OTHER DATA

Table 9: Deaths from suicide and self-inflicted injuries, 0 to 74 years, 2010 to 2014, Average annual ASR per 100,000 (+/- 95% confidence intervals (PHIDU, 2017)

Region	LGA Name	Measure (+/-95%CI)	Significance
Inner city	Maribyrnong (C)	10.3 (7.1 - 13.5)	
	Melbourne (C)	8.1 (5.8 - 10.3)	*
	Yarra (C)	9.4 (6.5 - 12.2)	
Suburban	Brimbank (C)	9.0 (7.0 - 10.9)	*
	Darebin (C)	7.5 (5.5 - 9.6)	**
	Hobsons Bay (C)	7.6 (5.0 - 10.2)	*
	Moonee Valley (C)	8.1 (5.7 - 10.5)	*
	Moreland (C)	7.6 (5.6 - 9.5)	**
Growth area	Hume (C)	8.1 (6.2 - 10.1)	**
	Melton (C)	7.6 (5.3 - 9.9)	*
	Wyndham (C)	7.4 (5.5 - 9.2)	**
Peri-urban	Macedon Ranges (S)	16.8 (11.1 - 22.4)	*
	Moorabool (S)	9.4 (4.3 - 14.5)	
Victoria		**9.6 (9.2 - 9.9)**	**
Australia		**11.2 (11.0 - 11.4)**	

Note: = significantly different to Australian rate at 95%; ** = significant different to Australian rate at 99%*

Table 10: Youth mortality: Deaths of persons aged 15 to 24 years, 2010 to 2014, Average annual ASR per 100,000(+/- 95% confidence intervals) (PHIDU, 2017)

Region	LGA Name	Measure (+/-95%CI)	Significance
Inner city	Maribyrnong (C)	20.2 (8.3 - 32.2)	*
	Melbourne (C)	15.2 (9.1 - 21.3)	**
	Yarra (C)	32.3 (16.8 - 47.7)	
Suburban	Brimbank (C)	34.1 (24.5 - 43.6)	
	Darebin (C)	13.7 (6.3 - 21.2)	**
	Hobsons Bay (C)	39.5 (22.8 - 56.2)	
	Moonee Valley (C)	26.6 (14.9 - 38.2)	
	Moreland (C)	25.7 (16.1 - 35.4)	*
Growth area	Hume (C)	26.6 (18.0 - 35.2)	*
	Melton (S)	33.0 (20.4 - 45.6)	
	Wyndham (C)	29.9 (20.1 - 39.8)	
Peri-urban	Macedon Ranges (S)	53.9 (25.7 - 82.2)	
	Moorabool (S)	39.4 (10.6 - 68.2)	
Victoria		**32.9 (31.1 - 34.7)**	**
Australia		**38.3 (37.3 - 39.2)**	

Note: = significantly different to Australian rate at 95%; ** = significant different to Australian rate at 99%*

Table 11: NWMPHN SA3, national and metropolitan/regional hospitalisations for intentional self-harm (same day and overnight), 2014–15

SA4	SA3	Number of hospitalisations	Hospitalisations per 100,000 people (age-standardised)	Bed days per 100,000 people (age-standardised)
Melbourne - Inner	Brunswick - Coburg	100	118	1,044
	Darebin - South	44	86	771
	Essendon	46	66	570
	Melbourne City	134	107	669
	Yarra	101	115	1,007
Melbourne - NE	Darebin - North	97	101	422
Melbourne - NW	Keilor	55	96	804
	Macedon Ranges	19	np	np
	Moreland - North	54	76	306
	Sunbury	56	147	753
	Tullamarine - Broadmeadows	99	64	294
Melbourne - West	Brimbank	129	68	357
	Hobsons Bay	55	66	262
	Maribyrnong	78	93	412
	Melton - Bacchus Marsh	146	102	463
	Wyndham	139	68	340
North Western Melbourne		**1,354**	**84**	**476**
Australian - Metropolitan		-	136	794
Australian - Regional		-	202	887
National		**-**	**161**	**838**

Source: Healthy Communities: Hospitalisations for mental health conditions and intentional self-harm in 2014-15 (2017) https://www.myhealthycommunities.gov.au/our-reports/mental-health-and-intentional-self-harm/february-2017/web-update *Accessed 20 November 2017*

Note: Highlights on a red (poorer performance) to green (better performance) scale .Np= data is not provided as it could lead to the identification of individuals.