West Metro Population Health Needs Assessment

Technical Report

August 2023

West Metro Health Service Partnership

Mercy Health Care first

Peter Mac Peter MacCallum Cancer Centre Victoria Australia

The Royal Children's Hospital Melbourne

The Royal Melbourne Hospital

Western Health

the women's the royal women's hospital

phn NORTH WESTERN MELBOURNE An Australian Government Initiative

Acknowledgements

We respectfully acknowledge the Traditional Custodians of the lands on which our work takes place and pay our respects to ancestors and Elders, past, and present emerging. The West Metro Health Service Partnership is committed to honouring Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters and seas and their rich contribution to society.

We also recognise, respect, and affirm the central role played in our work by people with lived experience, their families and carers.

We gratefully acknowledge the contributions of all the individuals who participated in this project, and we particularly extend our thanks to the numerous health providers, community groups, and associations that have played a vital role in making this work possible. Their support is instrumental in enhancing our understanding of the health needs within the West Metro region.

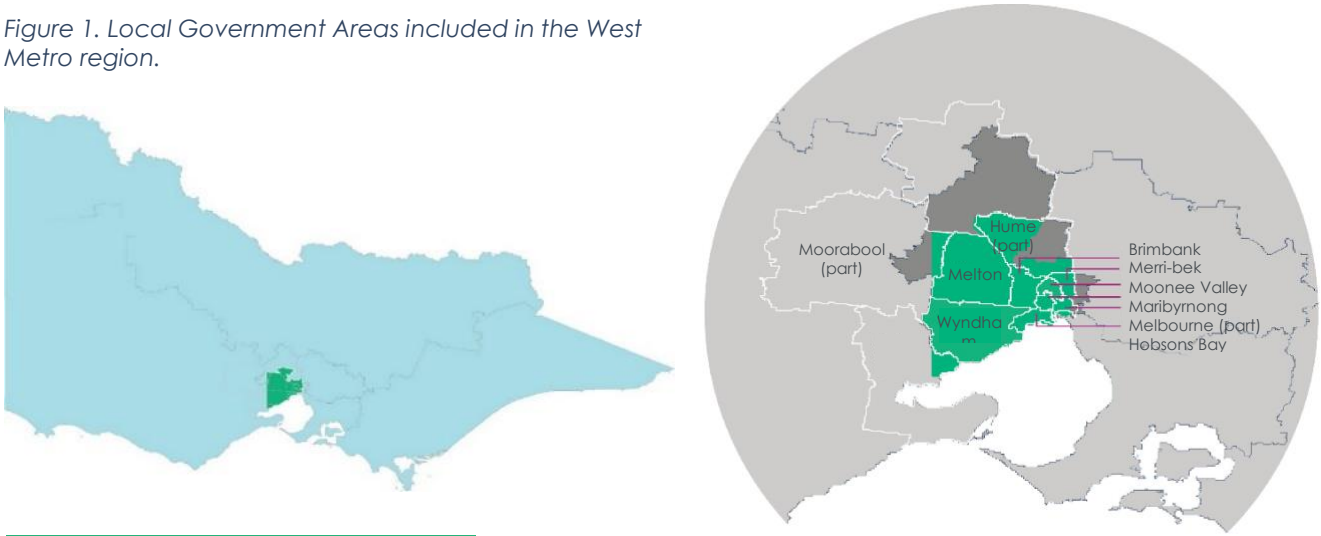
We also acknowledge the Victorian Department of Health as the source of VAED and VEMD data used for this report.

About this report

This report presents the key findings of the West Metro Population Health Needs Assessment (HNA). Its development was a collaboration between the North Western Melbourne Primary Health Network (NWMPHN), Western Public Health Unit (WPHU), and the West Metro Health Service Partnership (WM HSP). WM HSP health services are the Royal Melbourne Hospital, Peter MacCallum Cancer Centre, the Royal Women's Hospital, Western Health, Mercy Health Werribee, and the Royal Children's Hospital.

The project aims to assess the health needs of Victorians in the West Metro region, which includes seven full Local Government Areas (LGA) and parts of Hume, Moorabool, and Melbourne LGAs (Figure 1). Insights will be used to inform decisions on health service and WM HSP reform initiatives and support the alignment of initiatives and priorities across the regional networks to deliver better health outcomes for the community.

Figure 1. Local Government Areas included in the West Metro region.



LGAs included in West Metro region	Maribyrnong, Hobsons Bay, Moonee Valley, Brimbank, Merri-bek, Wyndham, Melton
Part of LGA included in West Metro region	Hume: only includes Sunbury and surrounds; Melbourne: excludes Carlton, East Melbourne, South Yarra; Moorabool: only includes part of Moorabool
LGAs in NWMPHN region, excluded from West Metro region	Macedon Ranges, Darebin, Yarra

This report was prepared by NWMPHN's Evaluation and Research Team and is set out in two main parts.

Part A - Developing the Evidence Base provides the key findings from analysis of epidemiological data and research about the health and wellbeing needs across the West Metro region.

Part B - Deep Dive into the Drivers of Need is a targeted and detailed analysis of the focus cohorts identified in Part A. It includes key insights and findings derived from extensive community and health provider consultations, surveys, and population health data.

See Appendix B and C for the methodology. There is also a 'Supplementary File' which provides the detailed data analyses used in this report. For any queries about this report, please contact HNA.admin@nwmphn.org.au.

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Acronyms

AEDC	Australian Early Development Census
AIHW	Australian Institute of Health and Welfare
CALD	Culturally and linguistically diverse
ED	Emergency Department
ERP	Estimated Resident Population
HNA	Health Needs Assessment
HITH	Hospital in the Home
ICD-10	International Classification of Diseases, 10th Revision
IRSD	Index of Relative Socio-economic Disadvantage
LGA	Local Government Area
LOTE	Language other than English
METEOR	Metadata Online Registry
NES	Non-English-Speaking Country
NWMPHN	North Western Melbourne Primary Health Network
PPH	Potentially Preventable Hospitalisation
SDH	Social Determinants of Health
SEM	Social Ecological Model
SURC	Symptom and Urgent Review Clinic
VAED	Victorian Admitted Episodes Dataset
VAHI	Victorian Agency for Health Information
VEMD	Victorian Emergency Minimum Dataset
WPHU	Western Public Health Unit
WM HSP	West Metro Health Service Partnership

Key definitions

Avoidable Emergency Department presentations	Avoidable ED presentations are based on the AIHW variables: Presentations to public hospital emergency departments with a type of visit of emergency presentation where the patient: • was allocated a triage category of four (semi-urgent: within 60 minutes) or five (non-urgent: within 120 minutes) and • did not arrive by ambulance, or police or correctional vehicle and • departure status was to "Home" or "Referred to GP" or "Residential care facility" and • was not admitted to the hospital, not referred to another hospital, or did not die.
Index of Relative Socio-economic Disadvantage	The Index of Relative Socio-economic Disadvantage (IRSD) summarises 20 variables that directly or indirectly contribute to disadvantage in a particular geographic location. The Australian average IRSD score is 1000. IRSD is calculated for each Statistical Area 1 (SA1) in Australia, each of which generally has a population of between 200 and 800 people. A lower score indicates a higher level of disadvantage.
NWMPHN Health Needs Assessment Framework	The NWMPHN Health Needs Assessment Framework draws on three forms of evidence to inform an approach to identifying and prioritising need in an effective and equitable way.
Potentially Preventable Hospitalisations	Potentially preventable hospitalisations (PPH) are identified from diagnoses recorded in hospitalisation data. In Australia, PPHs are summarised into three groups and the full list can be viewed on the AIHW website.[1] • Vaccine-preventable conditions: These conditions may be preventable through vaccination e.g., influenza, measles, diphtheria and hepatitis B. • Acute conditions: These conditions may not be preventable, but theoretically would not result in hospitalisation if timely and adequate care (usually non-hospital) was received, e.g., urinary tract infections, cellulitis, dental conditions, ear, nose and throat infections. • Chronic conditions: These conditions may be preventable through lifestyle change but can also be managed effectively through timely care (usually non-hospital) to prevent deterioration and hospitalisation e.g., congestive cardiac failure, diabetes complications, chronic obstructive pulmonary disease (COPD) and angina. (Falster, M. & Jorm, L., 2017)
Social Determinants of Health	The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems (World Health Organisation (WHO), 2022).
Social Ecological Model	The social ecological model (SEM) is a theory-based framework that can be used to understand the multifaceted and interactive effects of personal and environmental factors that determine health related behaviour, and for identifying behavioural and organisational leverage points and intermediaries for health promotion within organisations. The model describes four nested, hierarchical levels: individual, interpersonal/relationship, service/organisation, and policy/enabling environment. (*Centers for Disease Control and Preventions (CDC),*2018)

[1] *Refer to the Metadata Online Registry https://meteor.aihw.gov.au/content/740851 for the full list of PPH conditions and ICD-10-AM codes and descriptions.*

EXECUTIVE SUMMARY

The West Metro Population Health Needs Assessment presents an analysis of the health and care needs of Victorians in the West Metro region. By systematically identifying, understanding and prioritising health needs, it will help ensure reform initiatives are targeted and enable better alignment across regional networks to deliver better health outcomes for the community.

Approach

The project was delivered over four key stages and utilised the North Western Melbourne Primary Health Network (NWMPHN) Health Needs Assessment (HNA) Framework, which includes an approach to quantifying health needs using the social determinants of health (SDH).

Stage 1. Project initiation (October– November 2022)

Stage 2. Developing the evidence base (December 2022– March 2023)

Stage 3. Deep dive into the drivers of need (April– July 2023)

Stage 4. Report drafting and project finalisation (July– August 2023)

Stage 2 – Developing the evidence base, involved extensive epidemiological data analysis across five metrics: population, socio-demographic factors, risk factors, access to health services and geographic environment, and health conditions and consequences.

The main data sources included the Australian Bureau of Statistics (ABS) census, Victorian Admitted Episodes Dataset (VAED), Victorian Emergency Minimum Dataset (VEMD), community health data (including activities funded by primary health networks), general practice activity data, and surveillance of notifiable conditions data.

Stage 3 – Deep dive into the drivers of need, involved more targeted analysis of four priority cohorts and consultation with community and health providers. The cohorts identified were children (0 to 9), women and females (20 to 39; the dual term reflects different terminology used across data sources), older adults (65 and over) and people currently unwell with cancer; a focus on potentially preventable hospitalisations (PPHs) and avoidable emergency department (ED) presentations for all four cohorts was also determined.

The selection of the four priority cohorts and the two focus areas was informed by the data from Stage 2 and the strategic interests of the health services of West Metro Heath Service Partnership (WM HSP) members.

The project was led by a Project Control Group with representatives from the WM HSP, the Western Public Health Unit (WPHU) and NWMPHN. It reported to the WM HSP Steering Committee. There was also a Project Reference Group with representatives from each of WM HSP's member health services, the role of which was to review the data and emerging findings and provide insights, as well as guide the direction of the analysis (including the focus areas for stage 3).

Health needs by geographic location

The population size of the WM HSP region is growing, especially in the west. The analysis showed that over the next eight years the region will grow by 28.3% (401,000) and that by 2030 it will account for almost a third of Victoria's population. Almost a quarter of it will live in one Local Government Area (LGA) – the City of Wyndham.

Population size and distribution (metric 1) determines the 'base need' and accounts for 40% of the overall need. The analysis showed that Wyndham, Brimbank and Merri-bek LGAs have the highest level of need based on the projected population in 2025. The HNA analysed the other SDH (socio-demographic factors, risk factors, access and geographic environment, and health conditions and consequences) to quantify population health need for each LGA.

Across the region there are areas of significant **social disadvantage (metric 2)**. Brimbank, Melton and Hume–*part a* stand out as ranking highly on all indicators of socioeconomic disadvantage measured. All three have the twin pressures of population growth and socioeconomic disadvantage. Wyndham does not rate highly in social disadvantage comparatively.

Overall, Melbourne–*part a* has the high need related to **risk factors (metric 3)**, driven by low vaccination and cancer screening rates. Risk factors cover interpersonal, behavioural and biomedical contributors to health status.

The population within the WM HSP region engages in **behaviours that put it at increased risk of ill health** at similar rates to the rest of the state. In LGAs with greater disadvantage, such as Brimbank, Melton, Moorabool and Hume, the rates of behavioural risk factors are higher. All have high rates of multiple behavioural risk factors when compared with other LGAs across the region and against state averages.

Examples include smoking during pregnancy, smoking, children aged 2 to 17 living with obesity, and low rates of physical activity. The WM HSP region also has a higher proportion of infants with low birthweight compared with Greater Melbourne and Victoria – again, particularly in LGAs with high growth and high rates of social disadvantage (Wyndham, Brimbank, Melton). Melton, Hume and Brimbank also have high rates of family violence incidents relative to the Victorian average.

In relation to **protective and early detection health actions,** the analysis showed that vaccination rates in the WM HSP region are broadly comparable to the total Victorian population. However, mammogram rates in the NWMPHN catchment (which is slightly broader than the WM HSP region) are much lower than in other PHN catchments and Victoria. Cervical screening rates are also much lower than in comparable regions. Rates of low or very low physical activity are high across the WM HSP region, especially in the high-growth LGAs.

Tobacco smoking rates are higher in the WM HSP region compared with Greater Melbourne and Victoria – with high rates aligned to socioeconomically disadvantaged

LGAs. In contrast, alcohol consumption is lower in the region than Greater Melbourne and Victoria.

Melton, Hume–*part a* and Hobsons Bay have the highest level of need related to **access and geographical environment (metric 4).** There are health care workforce shortages across the WM HSP region. The most populated and disadvantaged LGAs (Brimbank, Wyndham and Melton) have the greatest workforce shortages, including GPs. There is a concerning trend of declining GPs per capita in Melton and Moorabool and six of the region's LGAs have fewer GPs per capita than the Victorian average.

Finally, Hume–*part a* has the highest level of need related to **health conditions and consequences (metric 5).** A greater proportion of residents in Hume–*part a*, Moorabool–*part a* and Merri-bek live with chronic conditions compared with the Victorian average. However, a smaller proportion of residents in Melton, Wyndham and Melbourne–*part a* live with chronic conditions compared with the Victorian and WM HSP regional average.

Census and GP new diagnosis data shows Merri-bek, Hume, Moorabool and Maribyrnong have higher rates of females with depression and anxiety compared with Victoria and the WM HSP region overall. The prevalence of cancer was slightly lower in the WM HSP region compared with Victoria as reported in the Census.

All LGAs in the WM HSP region had an annual premature mortality and an annual avoidable mortality greater than Victoria. Brimbank had the largest number of premature deaths, and Maribyrnong had the highest premature and avoidable mortality rates. This is notable, given the relatively better health workforce availability and service utilisation in that LGA compared with others in the region.

When base need as determined by population size and distribution is adjusted for the other SDH metrics (socio-demographic factors, risk factors, access and geographic environment, and health conditions and consequences), Wyndham, Brimbank and Melton have the highest level.

The need in the Wyndham LGA is driven by population size, but it still has the highest need when adjusted for SDH equity loadings. The need in Brimbank is driven by population size and social disadvantage. This LGA has the greatest level of social disadvantage in the WM HSP region.

In addition to population size and social disadvantage, access to health care services is another driver of need in Melton. Finally, Hume–*part a*, when adjusted for SDH, has a 112% increase in need, indicating significant disadvantage. It is high on most indicators of SDH and has the highest rates of chronic disease in the region.

Pages 48 – 50 of this report provides a summary of health needs by LGA, population group and areas of need.

Focus areas for 'deep dive' analysis in stage 3

The analysis in stage 2 provided insights into the health needs of the region. These findings were reviewed and discussed with the Project Reference Group to determine what areas warranted further and deeper analysis. These were PPHs and avoidable ED presentations. These were reviewed for children (0 to 9), women and females (20 to 39 years), older adults (65 and over) and people currently unwell with cancer.

Mental health was also identified as a potential area of focus. However, NWMPHN was undertaking a contemporaneous mental health HNA and a decision was made not to duplicate that work through this project.

Potentially preventable hospitalisations (PPHs)

The number of PPHs across WM HSP declined between 2019/20 and 2021/22 for chronic and acute conditions. However, the data analysis showed an increase in the number of PPHs in the WM HSP region each year since 2020 for all four focus cohorts, although there are fluctuations in the specific types of PPHs over time.

PPHs due to vaccine preventable conditions (specifically, pneumonia and influenza) steeply increased from 2021 to 2022 for children, females and older adults.

Acute conditions (mainly asthma, pneumonia, influenza, and dental) account for the majority of PPHs in children, with asthma the leading cause. Asthma, vaccine-preventable pneumonia and influenza, and ear, nose and throat infections accounted for the biggest increases in PPHs in children under 9 from 2020 to 2022.

Overall, for women and females aged 20 to 39, PPHs remained stable between 2020 and 2022. In 2022, the majority of PPHs were due to iron deficiency anaemia, urinary tract infections, and ear, nose and throat infections. Asthma and ear, nose and throat infections accounted for the biggest increases from 2020 to 2022.

Among older adults, PPHs are primarily caused by chronic conditions. However, they remained stable over the period analysed. In 2022, the majority of PPHs were due to congestive cardiac failure, COVID-19, iron deficiency anaemia and urinary tract infections. Congestive heart failure has consistently remained the top reason for PPH from 2020 to 2022.

For individuals living with cancer, other vaccine-preventable conditions are the top reason for PPHs (the specific PPH was chronic viral hepatitis B without delta agent). PPHs also remained stable for this group for the analysed period.

Avoidable ED presentations

There has been 9% increase in ED presentations across the region from 2020/21 to 2021/22. The Wyndham, Melton and Melbourne–*part a* LGAs had the largest increases in ED presentations. Females 20 to 39 accounted for the greatest number, possibly for reasons relating to pregnancy and childbirth.

31% of the total ED presentations were potentially avoidable, noting that avoidable does not mean inappropriate (at the time of their presentation). The HNA used the Australian Institute of Health and Welfare (AIHW) definition of avoidable ED presentations (see definitions section above). Health services and clinicians may consider many of these attendances appropriate despite meeting the AIHW definition. This was reflected in the difference between the quantitative data analysis and the data collected via consultation.

Avoidable ED presentations increased year on year from 2020 to 2022 across all four focus cohorts combined. However, these presentations were heavily influenced by COVID-19. Wyndham LGA has the highest number of avoidable ED presentations, followed by Merri-bek.

Consultations with health service EDs found that acuity in EDs is increasing. EDs noted that patients were increasingly presenting with complex social circumstances that contributed to their presentation. Many presentations that would fall within the AIHW definition of 'avoidable' were deemed appropriate and required hospital-level care (although not necessarily admission).

Hospitals, particularly those closer to inner-city Melbourne, reported that lack of access to primary care is not a primary driver of avoidable ED presentations. However, this view seemed to be inconsistent with some views expressed by primary and community health providers and consumers.

Health service EDs identified that the way hospitals operate – with ED often being the only 'door' into health services' – can contribute to presentations that may otherwise have been avoided.

The analysis showed that more than half of the avoidable ED presentations were in young people (0 to 29), particularly children aged 0 to 9 years (29%). Some of the leading causes of avoidable ED presentations in children were injuries to the head, viral diseases and acute upper respiratory infections (which peaked in 2021). Note that COVID-19 does not fall within the acute upper respiratory infection definition but could have been a contributing factor.

In consultations, parents and guardians and health providers noted the lack of availability of paediatric specialists and GPs with paediatric experience as drivers of ED attendance and hospitalisation. EDs particularly noted the desire of families to have their children assessed by someone with specialist expertise in paediatrics and that GPs also contributed to these types of avoidable presentations through unnecessary referrals to hospitals. Changes in the relationship between GPs and families over time were identified as a potential driver of avoidable referrals to hospitals.

For women and females aged 20 to 39, the leading causes of avoidable ED presentations were 'digestive system and abdomen' and 'other maternal disorders predominately related to pregnancy'. EDs identified pelvic pain as a common condition associated with repeated presentations. Lack of community services for maternity patients, including after-

hours, was also identified as a driver of ED presentations. Health services recognised the importance of women experiencing pregnancy loss attending ED and the potential for better community-based models of care.

For older adults, wrist and hand injuries, as well as disorders of the eye and adnexa, were identified as the primary causes for avoidable ED presentations since 2020.

The avoidable ED analysis for people with cancer was not completed due to extremely small numbers. Health providers and GPs described how better access to diagnostic services in the community could avoid ED presentations. Lack of social support was also identified as a driver of acute health conditions and increased risk of ED presentations.

The avoidable ED presentation analysis for people with cancer showed that between July 2019 and March 2023 there were only 85 avoidable ED presentations in the WM HSP region with a cancer diagnosis. This finding was consistent with consultations with EDs in the region, which described most patients with cancer attending as requiring hospital-level care, and often specialist assessment and diagnostics.

Key findings from community and health provider consultation

Community and health provider consultations were undertaken to understand drivers of need and experience accessing services, including the potential drivers and factors that may influence PPHs and avoidable ED presentations for the four focus cohorts.

Consultation was conducted through surveys, focus groups and individual interviews. A total of 662 people responded to the surveys, and 85 people participated in focus groups and interviews.

Community experience accessing health care services highlighted the persistent challenge of navigating the health system and identified particular challenges in understanding what services are available and who is eligible. Balancing family, work and caregiving responsibilities often make it challenging to find time to access care. This was especially true for economically vulnerable people, those who have limited social connections, and those who are from marginalised groups.

A lack of access to locally bulk-billed or affordable health care was a common challenge, exacerbated by the increased cost of essentials including transport, housing, and living or family expenses. Consequently, many participants, (especially in the female and older adult cohorts) reported forgoeing or delaying care.

Lived experiences of stigma, discrimination and limited access to interpreters or culturally competent services were all reported to adversely impact health and wellbeing and contribute to fear, diminished trust, and hesitancy in seeking health care.

Consultation with health providers and services across general practice and community health highlighted current system challenges, including inadequate access to specialist care in the community, unclear or insufficient information on existing service options and admission pathways or criteria, and inadequate discharge planning and information to support care coordination in the community.

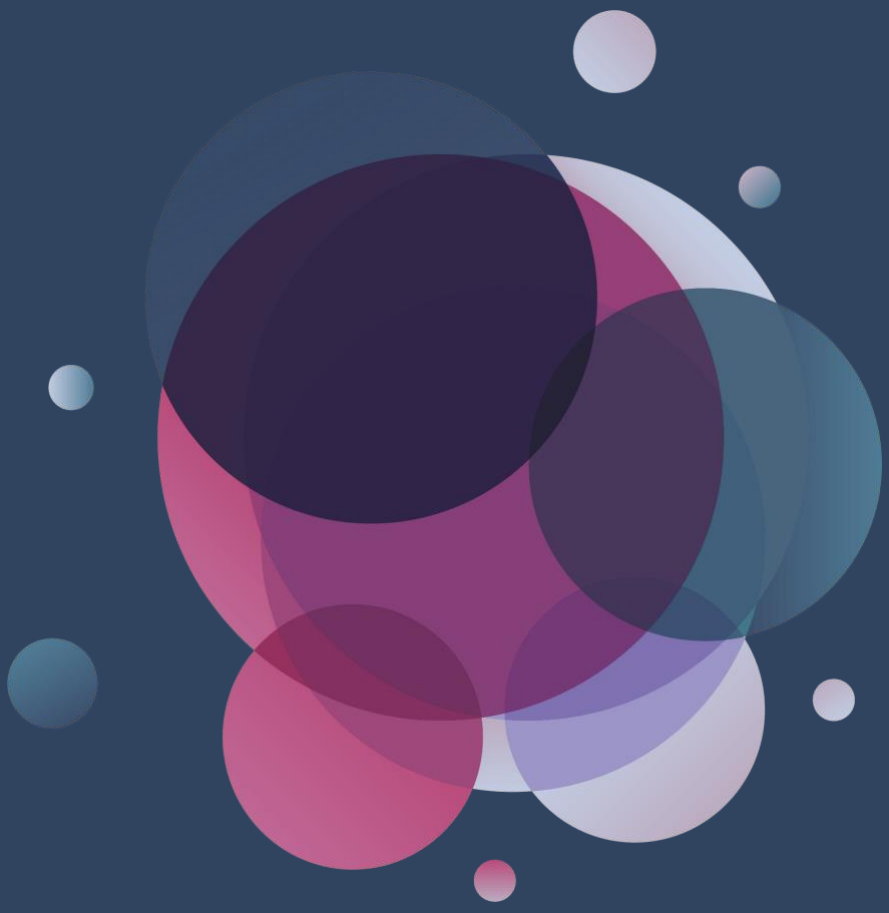
Health providers also noted that increasing complexity of patients and increasing psychosocial factors (including financial stressors, intimate partner violence and reduced social connectedness) are exacerbating health issues. Communication and care coordination between health services was reported as often being *ad hoc*.

The need for investment in workforce capability and capacity to meet growing demand for services was a recurrent message from GPs and community health. The opportunity for more cross-sector collaboration and knowledge sharing to support improved communication, coordination of care and allocation of resources was also identified.

Future actions and dissemination plan

The West Metro Population Health Needs Assessment serves as a valuable resource for policymakers, planners, and providers working to improve the health of Victorians in the West Metro catchment. At the time of writing (August 2023) it was being prepared to present to the WM HSP Steering Committee and executive teams at member health services. A broader dissemination plan will follow, with the goal of sparking conversations and actions in response to its findings.

INTRODUCTION



1.1 Purpose and objectives

In mid-2022, the West Metro Health Service Partnership agreed to undertake a population health needs assessment for the region.

The West Metro Population Health Needs HNA aims to analyse the health and wellbeing needs of people within Melbourne's inner north and western suburbs.

The objectives were to:

- Inform the decisions of the WM HSP members in relation to future reform initiatives, including collaborative projects.
- Support more coordinated prioritisation and implementation across regional networks (such as, WM HSP, Western Public Health Unit (WPHU) and NWMPHN), increasing the impact of population health, primary care, and hospital system initiatives.
- Support improved priority setting and investment at health services and as a HSP that should contribute to better patient access, outcomes and experience.

1.2 Approach

The project was delivered across four stages.

Table 1. Approach to developing the West Metro Population Health Needs Assessment.

Stage 1 **Project initiation**	**Stage 2** **Developing the evidence base** (Part A of this report)	**Stage 3** **Deep Dive into the drivers of need** (Part B of this report)	**Stage 4** **Report drafting and finalisation**
Determined shared objectives and governance.	Phase 1: quantitative analysis of data against the five population health metrics. Phase 2: reviewed and refined analysis including the quantification of need. Confirmed focus areas.	Analysis of detailed data. Consultation with stakeholders (community and providers) on drivers of need.	Engagement with health services to explore findings. Development of report
Oct – Nov 2022	Dec – Mar 2023	Apr – Jul 2023	Jul – Aug 2023

Throughout all stages, engagement was undertaken with key stakeholders. This included regular (weekly/fortnightly) meetings of the core project team (NWMPHN, WM HSP and WPHU) and workshops with nominated representatives from each health service.

1.3 Methodology

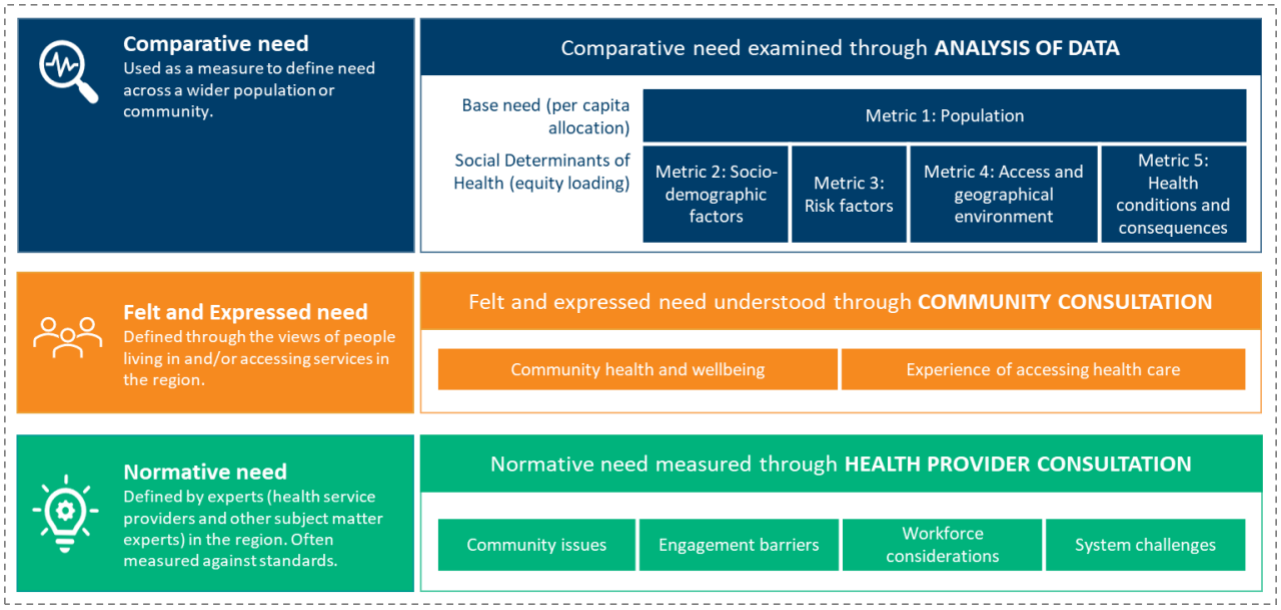
To ensure a comprehensive and evidence-based outcome, the project utilised the **NWMPHN HNA Framework**. The Framework, which includes a method to quantify need using the SDH, recognises that the issues that the health system needs to address, especially in disadvantaged areas, are multi-faceted and require a holistic, collaborative system approach.

Defining need

A needs assessment implies a gap or discrepancy between the current conditions - 'what is' - and the ideal conditions - 'what should be'. This gap - the difference between the current condition and the ideal condition - is the 'need' (Smart, 2019).

Our evidence-based approach Figure 2 considers four types of need, described below (Bradshaw, J., 1972).

Figure 2. NWMPHN Health Needs Assessment Framework.



Developing the evidence base (Stage 2, Part A of this report)

Stage 2 of the Population Health project focused on the 'Comparative Need' component of the HNA framework.

The Framework provides a systematic way of making sense of the data and are grouped into five SDH metrics to identify and quantify overall need.

Metric 1. Projected population
Metric 2. Socio-demographic factors
Metric 3. Risk factors
Metric 4. Access and geographic environment
Metric 5. Health conditions and consequences.

The detailed methodology for this stage can be found in Appendix B.

Deep dive into the drivers of need (Stage 3, Part B of this report)

Building on the insights gathered from the analysis undertaken in stage 2, this stage delved deeper into: avoidable ED presentations and PPHs in four cohorts – Children (0 to 9 years), Women and females (20 to 39 years), Older adults (65 years and over) and people living with cancer.

The key activities undertaken during this stage included:

1. **Targeted analysis of the VAED and VEMD data** to gain deeper insights into the prevalence and types of PPHs and AED for the focus cohorts.
2. **Community and health provider consultation** through survey, focus groups and interview.

The consultation questions were developed based on the Social Ecological Model (SEM), which is a theory-based framework that describes four nested, hierarchical levels; individual, interpersonal/relationship, service/program and policy/enabling environment.

Using the SEM the consultations explored potential drivers and factors that influence why patients might end up being hospitalised or present at ED, even when community-based care could be more appropriate.

The detailed methodology for this stage can be found in Appendix C.

1.4 Limitations

While this report provides valuable insights about the health needs of the West Metro region, it is important to acknowledge the following limitations that may impact the interpretation and application of the findings. These limitations include:

Dataset limitations

- The reported PPH rates count only one PPH diagnosis for a single hospital presentation; the analysis does not include multiple diagnoses during the same hospitalisation and may result in an underestimation of the actual burden of PPHs.
- Population health (quantitative data) was collected and categorised within a traditional male/female gender binary framework and did not account for non-binary, genderqueer or intersex individuals which may result in an incomplete representation of gender diversity within the WM region.
- Certain PPH conditions had age restrictions which could not be applied due to VAED dataset's 5-year age range bracket. PPH numbers for these conditions in children 0-9 will be slightly inflated (refer to Part B1 for details.)

Sample size

- For our focus group consultations, purposeful sampling to target our cohorts of interest has resulted in less diversity than is representative of our region.
    - ~20% of consumers were born overseas, or parent born overseas, slightly below the 35% Victorian average.
    - 14% consumers were male, and therefore biased towards female experiences for all focus cohorts.
    - 1 cancer patient (advanced cancer, male) participant.

    - No Aboriginal and Torres Strait Islander consumer or HCPs.
- Each consumer focus groups included only 4-5 individuals, whilst this approach means we lacked the breadth of voice across the cohort of interest, it was the preferred approach to ensure we were able to explore concepts at a deep level, which will help us formulate further hypotheses for testing.
- The survey was available in English-only. Consistent with best practice, survey items were not mandatory, however this resulted in some participants skipping questions and thus missing data entries.
- Health provider survey respondents were mostly community health providers and may not reflect experiences of health providers in hospital settings.

Data Analysis

- NWMPHN does not receive data from all General Practices across the region, so quantitative analysis of GP data (PENCAT) is likely to be underrepresented. Further, the data will not account for patients who have seen multiple GPs in the time period, therefore single patients could have a single diagnosis reported more than once.
- Whilst we have used the SEM to theme and organise data from the consultations, a formal thematic analysis was not undertaken.
- Findings from the study may be influenced by individual biases due to personal experiences which impact interpretation of the data and analysis. To mitigate biases, reflexive practice to improve self-awareness was practiced as well as peer review of this report to validate findings.

PART A. DEVELOPING THE EVIDENCE BASE

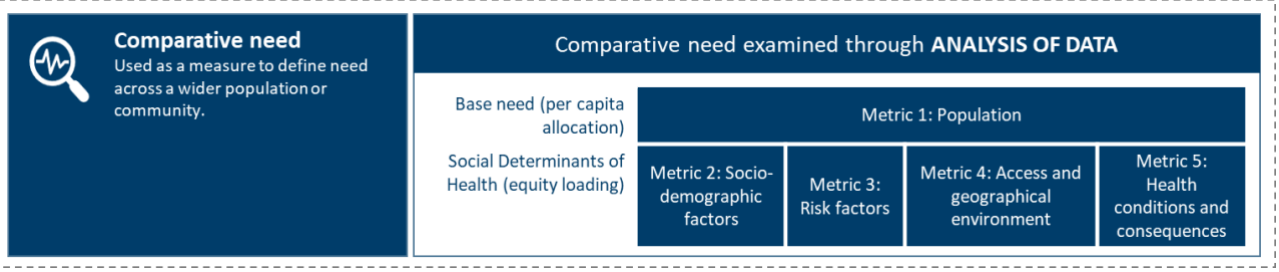
A social determinants of health approach to quantifying need

2.1 Overview

This section provides the key insights derived from Stage 2, Developing the evidence base which provides the key findings from analysis of epidemiological data about the health and wellbeing needs across the West Metro region.

A summary of the consolidated findings is also provided to inform a view of the key drivers of need by geographic location (LGA), population groups, and prevalent health conditions.

Figure 3. Examining comparative need through the analysis of data.



2.2 Metric 1 – Projected population

Metric 1 provides an overview of population size, growth, and distribution across the WM HSP region. The WM HSP region includes seven full Local Government Areas (LGAs) and three part-LGAs (further details can be found on page two).

Projected population

The population is growing, especially in the west. By 2030, almost a quarter of the region's population will live in one LGA – the City of Wyndham.

- Over the next eight years, the WM HSP region will **grow by 28.3%** or 401,000 between 2020– 2030. It will account for almost **one third** of Victoria's population growth.
- The population will **shift westward** and be increasingly based in the central and north-western parts of the WM HSP region (Wyndham, Melton and Brimbank).
- By 2030, Wyndham will account for **22% of the total region**. Wyndham and Melton account for almost half of all population growth in the region.
- Wyndham and Melton rank as **first and second for crude birth rate** across all Victorian LGAs.
- The region has a larger proportion of younger adults (25– 44) and a smaller proportion of older people (65+) compared with Victoria as a whole. However, **the population is ageing**. The population of people aged 65 and over will grow by 40.7% in the period to 2030.

- The growth regions of Wyndham and Melton have **higher proportions of young people** (37% and 33% respectively) compared with the Victorian average of 29%.

Figure 4. Projected percentage (%) growth by LGA and Victoria, 2020- 2030.

Source: (PHIDU, 2021)

Quantified need based on the projected population

Identifying the population-based need is determined by data projections of the population size and distribution.

Metric 1 constitutes the '**base need**' by LGA relative to the overall population size of the HSP region and accounts for 40% of the overall need. Attributing a higher proportion of 'need' to the projected population recognises that demand and economies of scale are important attributes of resource allocation (Radinmanesh et al., 2021).

Wyndham, Brimbank and Merri-bek have the highest level of need based on the projected population in 2025.

Table 2. Quantified need based on the projected population.

Region	LGA	Estimated Resident Population ERP 2020	Projected Population (2025)	Projected % WM HSP region (2025)	Projected Population (2030)	Projected % WM HSP region (2030)
Inner city	Melbourne–*part a*	153,331	179,105	11.0%	197,290	10.8%
	Maribyrnong	96,995	109,775	6.7%	121,643	6.7%
Suburban	Brimbank	217,318	234,060	14.4%	248,533	13.7%
	Hobsons Bay	190,827	113,968	7.0%	122,953	6.8%
	Moonee Valley	132,479	144,228	8.9%	155,028	8.5%
	Merri-bek	104,169	213,680	13.1%	234,972	12.9%
Growth area	Hume–*part a*	276,530	63,668	3.9%	72,586	4.0%
	Melton	169,697	205,059	12.6%	239,147	13.1%

Region	LGA	Estimated Resident Population ERP 2020	Projected Population (2025)	Projected % WM HSP region (2025)	Projected Population (2030)	Projected % WM HSP region (2030)
	Wyndham	54,175	340,353	20.9%	400,706	22.0%
	Moorabool	22,766	24,824	1.5%	26,692	1.5%

2.3 Metric 2 – Socio-demographic factors

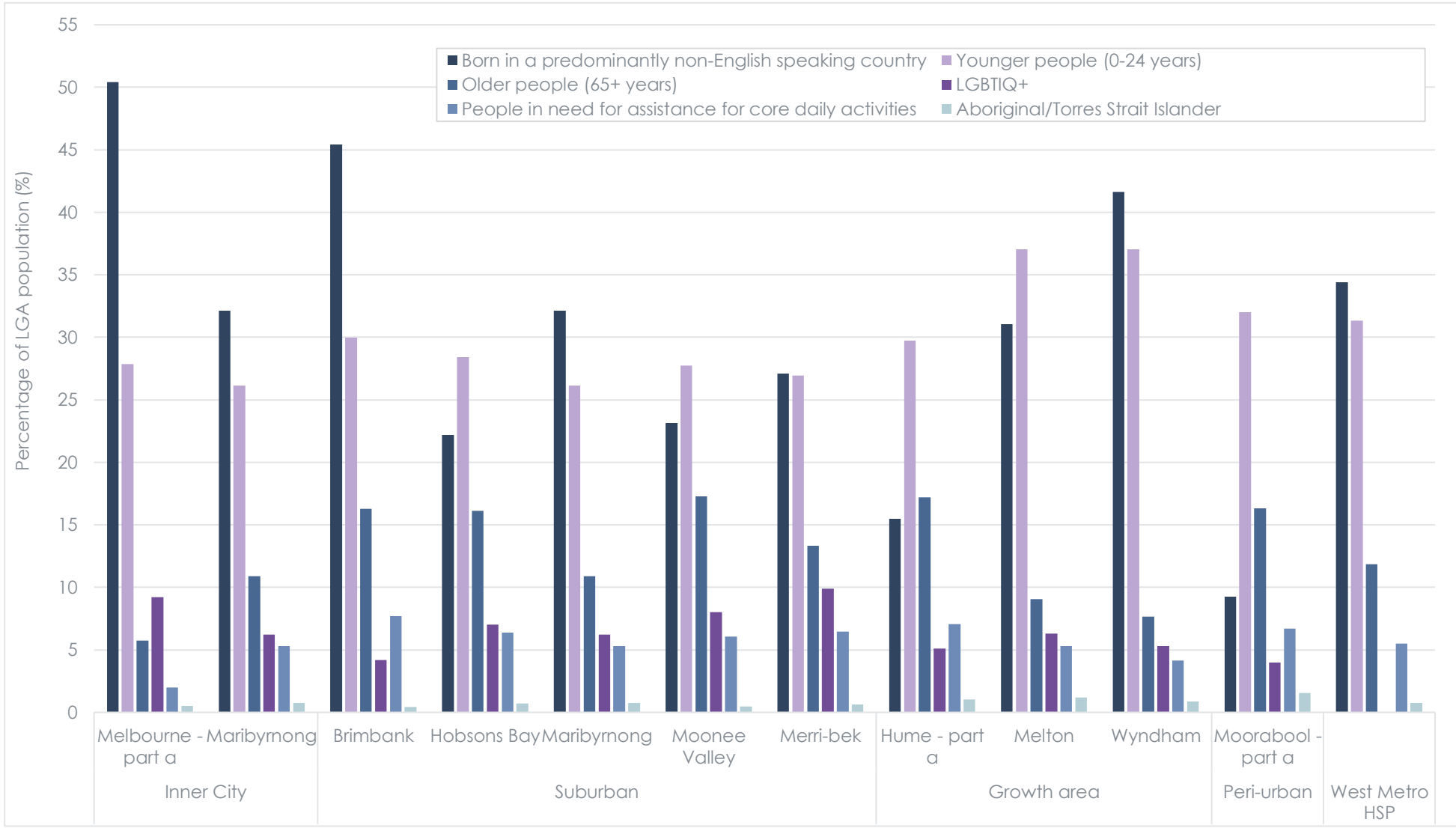
Metric 2 recognises that the social position a person has in society can shape differences in experiences and vulnerability to health-compromising conditions.

Demographic factors

The WM HSP region is culturally and linguistically diverse. The population is slightly younger on average compared to the rest of Victoria, and, in some areas, has a higher proportion of people who are Aboriginal and Torres Strait Islander and/or LGBTQIA+.

- The region is more culturally diverse than Victoria's overall profile with more than 30 % of the population born in a predominately non-English speaking (NES) country (compared with the Victorian average of 24 %).
- 41 % of the population speak a language other than English at home (accounting for over 230 languages).
- However, the level of cultural diversity varies substantially across the region. More than 40 % of the population in Melbourne–*part a*, Brimbank and Wyndham were born in a predominantly NES country, whereas only 9.2 % of the population of Moorabool–*part a* were born in an NES country.
- Aboriginal and Torres Strait Islander people represent a greater proportion of the population in peri-urban areas, that is, a non-urban area in between surrounding metropolitan and rural areas.
- The proportion of people who require assistance with core activities is relatively consistent across LGAs; however, a correlation does exist with the proportion who are older.
- LGBTIQIA+ people represent a greater proportion of the population in Merri-bek and Melbourne.
- Young people represent a significantly greater proportion of the population in Wyndham and Melton compared with other LGAs.

Figure 5. Priority populations as a percentage of the LGA population.



Source: (Australian Bureau of Statistics (ABS), 2021; Victorian Agency for Health Information, 2020)

Table 3. Demographic indicators; top five LGAs.

Born in a predominantly NES country (%)	Requires assistance with core activities (%)	Young people (0-24 years) (%)	Older people (65+ years) (%)	Aboriginal and/or Torres Strait Islander (%)	LGBTIQ+ (%)
Melbourne–*part a* (50)	Brimbank (8)	Wyndham (37)	Hume–*part a* (17)	Moorabool–*part a* (1.6)	Merri-bek (10)
Brimbank (45)	Hume–*part a* (7)	Melton (37)	Moonee Valley (17)	Melton (1.2)	Melbourne (9)
Wyndham (42)	Moorabool–*part a* (7)	Moorabool–*part a* (32)	Brimbank (16)	Hume–*part a* (1.0)	Moonee Valley (8)
Maribyrnong (32)	Moonee Valley (6)	Brimbank (30)	Hobsons Bay (16)	Wyndham (0.9)	Hobsons Bay (7)
Melton (31)	Hobsons Bay (6)	Hume–*part a* (30)	Moorabool–*part a* (16)	Maribyrnong (0.8)	Maribyrnong (6)
WM HSP (34)	**WM HSP (5)**	**WM HSP (31)**	**WM HSP (12)**	**WM HSP (0.7)**	**WM HSP (7)**
Victoria (24)	**Victoria (6)**	**Victoria (30)**	**Victoria (17)**	**Victoria (1.0)**	**Victoria (6)**

Table note: Indicators are presented as a proportion of the population; colours represent specific LGA.

Table 4. Social disadvantage indicators; top five LGAs greatest risk.

Low English proficiency (%)	Low individual income (<$41,600) (%)	Low or very low household income (<$65K) (%)	Housing stress (%)	Food insecurity (%)
Brimbank (14)	Brimbank (55)	Brimbank (36)	Melbourne (32)	Brimbank (10)
Maribyrnong (8)	Hume–*part a* (47)	Hume–*part a* (31)	Hume (20)	Maribyrnong (8)
Wyndham (6)	Melton (46)	Moorabool–*part a* (31)	Wyndham (18)	Melton (7)
Melbourne–*part a* (6)	Moorabool–*part a* (46)	Melbourne–*part a* (30)	Merri-bek (17)	Moonee Valley (7)
Merri-bek (5)	Wyndham (45)	Hobsons Bay (30%)	Brimbank (17)	Hobsons Bay (6)
WM HSP (6)	**WM HSP (45)**	**WM HSP (28)**	-	-
Victoria (4)	**Victoria (46)**	**Victoria (32)**	-	**Victoria (6)**

Table note: Indicators are presented as a proportion of the population; colours represent specific LGA.

Social disadvantage

There are areas of significant social disadvantage throughout the region. Brimbank LGA, however, stands out as ranking highly on all indicators of socioeconomic disadvantage measured.

- High levels of socioeconomic disadvantage exist **across Brimbank, Melton and Hume,** two of these three LGAs where the projected population growth is the greatest. All 3 have twin pressures of population growth and socioeconomic disadvantage Wyndham (the fastest growing LGA), on the other hand, does not rate highly in social disadvantage comparatively.
- There **is localised disadvantage** in all the LGAs across the region.
- **Low English proficiency** as a contributor to socioeconomic disadvantage is **higher for the WM HSP region** than Victoria. 41 % of the population speak a language other than English (LOTE) at home (in 230 languages). However, there is significant variation, across LGAs in English proficiency (1 % - 14 % of residents who speak English not well, or not at all). Brimbank (14 %) and Maribyrnong (8 %) have the highest proportion of the residents with low English proficiency.
- The **individual income profile** of the WM HSP region is broadly **aligned with the Victorian distribution**. However, Brimbank has a much larger proportion than the rest of the HSP or Victoria of people earning less than $41,600. Higher concentrations of low-income earners are aligned with LGAs with a greater proportion of people aged 65+.
- Language spoken at home and income are linked. **52 % of income earners speak English at home**. They are much **more likely to earn higher incomes** than people who do not.

Quantified need based on socio-economic factors

IRSD is used to identify the areas of most need as they relate to socio-economic status across the WM HSP region.

Brimbank and Melton have the highest level of need based on the IRSD. Wyndham, Brimbank, Melton and Merri-bek have the highest need when population is adjusted for socio-economic factors.

Table 5. Quantified need based on socio-economic factors.

Region	LGA	% of population with IRSD in deciles 1-4	Index of population with IRSD in deciles 1-4 by LGA	% of Projected population (2025)	Adjusted population need
Inner city	Melbourne–*part a*	41.3%	0.10	11.0%	10.9%
	Maribyrnong	41.8%	0.10	6.7%	7.2%
Suburban	Brimbank	79.0%	0.19	14.4%	15.1%
	Hobsons Bay	39.3%	0.10	7.0%	7.5%
	Moonee Valley	15.6%	0.04	8.9%	8.2%

Region	LGA	% of population with IRSD in deciles 1-4	Index of population with IRSD in deciles 1-4 by LGA	% of Projected population (2025)	Adjusted population need
	Merri-bek	33.4%	0.08	13.1%	12.3%
Growth area	Hume–*part a*	40.7%	0.10	3.9%	4.8%
	Melton	45.1%	0.11	12.6%	12.4%
	Wyndham	37.7%	0.09	20.9%	19.1%
Peri-urban	Moorabool–*part a*	39.9%	0.10	1.5%	2.8%

2.4 Metric 3 – Risk factors

Metric 3 identifies the interpersonal, behavioural, and biomedical contributors to health status and recognises the impact they have on the risk of becoming unwell.

Behavioural and biomedical risk factors

The population within the WM HSP region engages in behaviours that put it at increased risk of ill health at similar rates to the rest of the state. In LGAs with greater disadvantage such as Brimbank, Melton, Moorabool and Hume, however, these rates are higher.

- **Brimbank, Melton, Moorabool and Hume** all have **high rates of multiple behavioural risk factors** when compared with other LGAs across the WM HSP region and state averages. This includes smoking during pregnancy, current smokers, children living with obesity (2-17 years), and low or very low physical activity. These LGAs also have high social disadvantage.
- The region has a **higher proportion of infants born with low birthweight** compared with Greater Melbourne and Victoria. This is particularly true across the high growth/high social disadvantage areas of Melton, Brimbank, Wyndham and Moorabool.
- **Tobacco smoking during pregnancy was higher** than the WM HSP and Victorian averages in 3 of these LGAs (Melton, Brimbank and Moorabool), as well as Hume. With the exception of Moorabool, however, rates of antenatal visits were higher in these LGAs compared with the WM HSP and Victorian average.
- **Moorabool** has **high rates of smoking in pregnancy, low rates of antenatal visits** in the first trimester and a considerably **higher proportion of infants born with low birthweight** when compared with Greater Melbourne and Victoria.
- **Wyndham** also has the **highest rate of births and high rates of infants born with low birth weight** despite having higher rates of antenatal care in the first trimester (greater than 74 % receiving an antenatal visit) and lower than the state average rates of smoking during pregnancy.
- **Melton, Hume, and Brimbank** also have **high rates of family violence incidents** relative to the Victorian average.

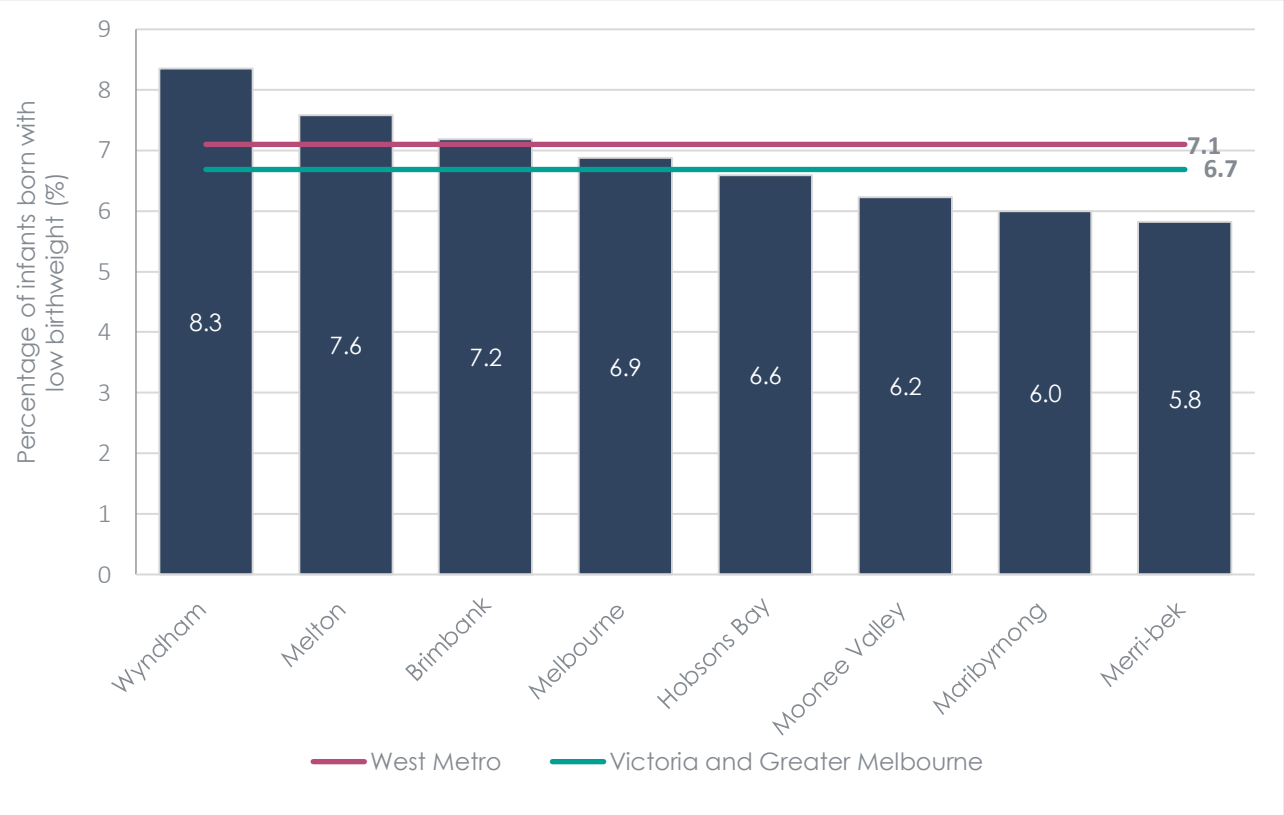
Table 6. Behavioural and biomedical risk factor indicators.

Smoking during pregnancy (%)	Current smokers 18+y (%)	Alcohol – more than 2 drinks per day (%)	Obesity (2-17 years) (%)	Physical activity (low or very low) (%)
Moorabool (12.1)	Hume (21.8)	Moorabool (16.6)	Moorabool (9.5)	Brimbank (76.2)
Hume (10.1)	Moorabool (21.7)	Moonee Valley (14.2)	Melton (8.7)	Hume (75.2)
Melton (9.7)	Brimbank (20.9)	Hobsons Bay (13.9)	Hume (8.6)	Melton (73.8)
Brimbank (7.4)	Melton (20.7)	Melbourne (12.0)	Brimbank (8.6)	Wyndham (72.3)
Wyndham (5.6)	Maribyrnong (20.0)	Merri-bek (11.5)	Wyndham (8.5)	Maribyrnong (68.1)
WM HSP (6.0)	**WM HSP (19.7)**	**WM HSP (9.6)**	**WM HSP (7.8)**	**WM HSP (67.1)**
Victoria (8.0)	**Victoria (18.8)**	**Victoria (14.4)**	**Victoria (8.0)**	**Victoria (65.7)**

Table note: Indicators are presented as a proportion of the population; colours represent specific LGA.

There are high rates of infants born with low birthweight in high growth and relatively socially disadvantaged areas.

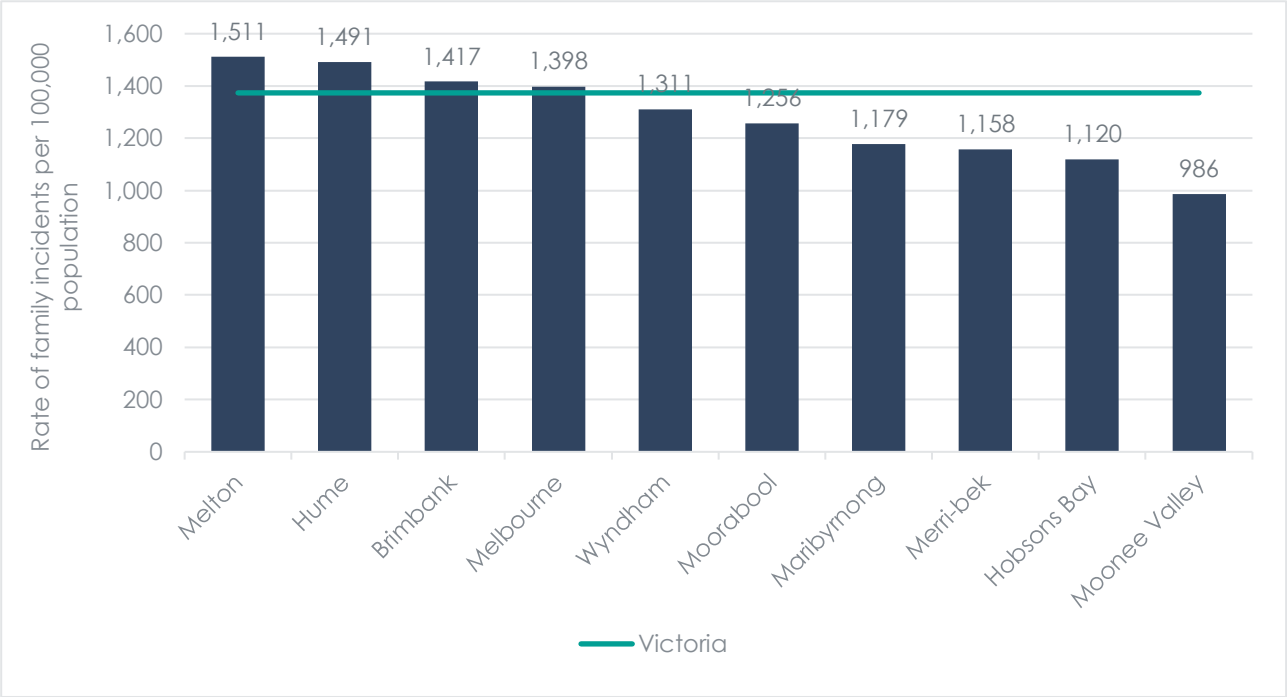
Figure 6. Percentage of infants born with birthweight in West Metro region by LGA, 2017- 2019.



Source: Compiled by PHIDU based on data from the Australian Institute of Health and Welfare (Public Health Information Development Unit (PHIDU), 2022).

Rates of family violence incidents are high across the region.

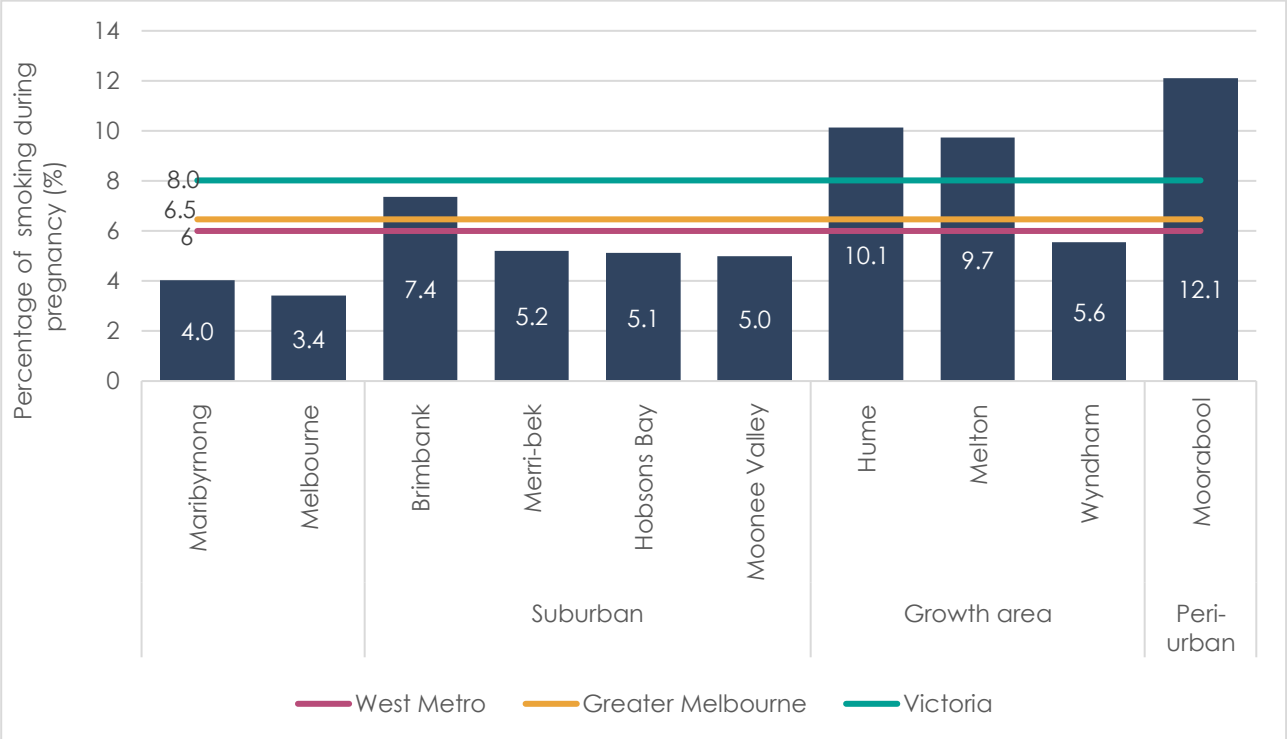
Figure 7. Rate per 100,000 family violence incidents in the year ending June 2022 by LGA.



Source: Law Enforcement Assistance Program Database, Crime Statistics Agency, Year ending 30 June 2022 (Crime Statistics Agency Victoria, 2022).

Moorabool, Hume and Melton have high rates of pregnant women who smoke.

Figure 8. Rate of smoking during pregnancy, 2017- 2019.



Source: Compiled by PHIDU based on data from the Australian Institute of Health and Welfare (Public Health Information Development Unit (PHIDU), 2022).

Protective and early detection health actions

- Vaccination rates in the WM HSP region are **broadly comparable to those across Victorian population**.
- In the Melbourne LGA, **children and teenagers are under-vaccinated** compared with the other West Metro LGAs and Victoria. To a lesser extent, this is also the case in Hume and Wyndham.
- The mammogram rates in the NWMPHN catchment are **much lower than in other PHNs and Victoria**, while cervical screening rates are much lower than comparable regions but similar to Victorian rates. (Note: screening rates are only available for the North Western Melbourne region, not specific West Metro LGAs).
- Rates of very low/low physical activity are higher in the region.
- The data for the NWMPHNs entire catchment (which is slightly larger than the WM HSP region) also suggests healthy eating rates are lower in the region.

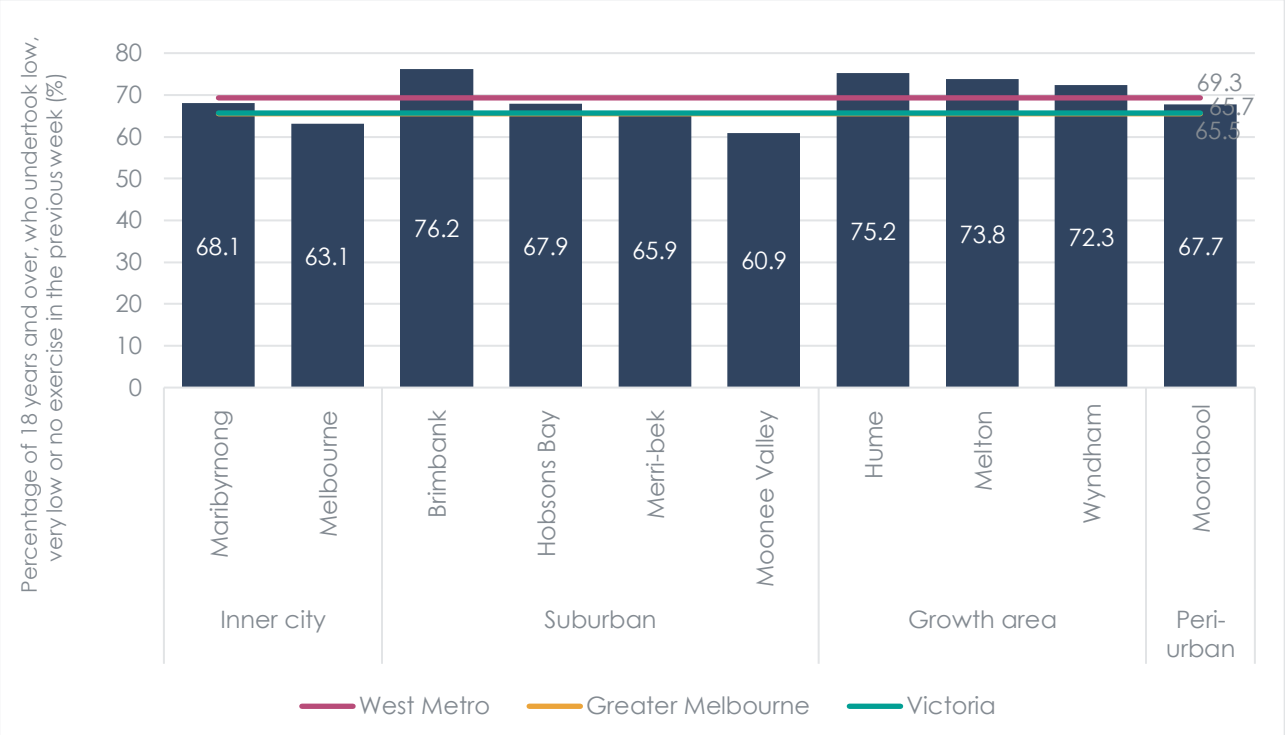
Table 7. Vaccination indicators 2014 – 2018.

Children fully vaccinated year 1	Children fully vaccinated year 2	Children fully vaccinated year 3	Children 15 years – 3 doses for HPV (females)	Children 15 years – 3 doses for HPV (males)
Melbourne (89)	Melbourne (84.2)	Melbourne (89.2)	Melbourne (56.4)	Melbourne (63.8)
Hume (93.1)	Hume (88.7)	Merri-bek (94.7)	Melton (68.8)	Melton (68.1)
Hobsons Bay (93.9)	Moorabool (89.2)	Maribyrnong (94.8)	Wyndham (74.2)	Hume (70.9)
Melton (94.0)	Brimbank (89.8)	Wyndham (94.8)	Hume (78.0)	Wyndham (73.5)
Merri-bek (94.1)	Maribyrnong (89.8)	Brimbank (94.8)	Brimbank (80.2)	Brimbank (73.8)
WM HSP (94.3)	**WM HSP (90.9)**	**WM HSP (95.2)**	**WM HSP (84.2)**	**WM HSP (79.2)**
Victoria (94.3)	**Victoria (91.2)**	**Victoria (95.5)**	**Victoria (80.0)**	**Victoria (76.5)**

Table note: Indicators are presented as a proportion of the population. *Source: Compiled by PHIDU based on data provided by the Australian Childhood Immunisation Register, Medicare.*

Rates of low/very low physical activity are high across West Metro LGAs, especially in the high-growth LGAs.

Figure 9. Proportion of people aged 18 years and over who undertook low, very low, or no exercise by West Metro LGAs 2017/18.



Note: The modelled estimates were based on self-reported responses for exercise undertaken for fitness, sport or recreation in the week prior to being interviewed. Exercise level was calculated 'Duration of exercise (minutes) x Intensity factor (walking for fitness = 3.5, moderate = 5, vigorous = 7.5): low, very low or no exercise refers to scores of less than 800.

Source: Compiled by PHIDU based on direct estimates from the 2017/18 National Health Survey, ABS Survey Table Builder (Public Health Information Development Unit (PHIDU), 2022).

Tobacco smoking rates are higher in the West Metro region than across Victoria. Alcohol consumption and hospitalisations from illicit drug use are generally lower than Greater Melbourne and Victoria.

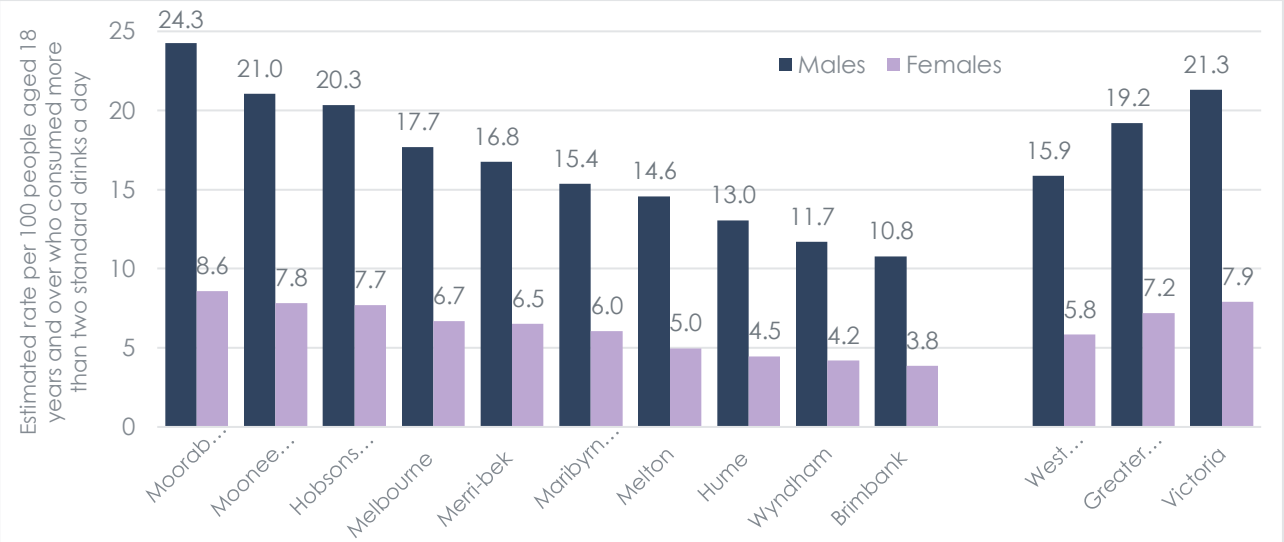
- Overall, **smoking rates are higher in the region compared with Greater Melbourne and Victoria**. Higher smoking rates are also found in the LGAs with the most socioeconomic disadvantage – Brimbank, Melton, Moorabool, with Hume being the highest across the region.
- Overall, **alcohol consumption is lower in the region than Greater Melbourne and Victoria**. But higher rates of alcohol consumption than those in Greater Melbourne occur in Hobsons Bay, Moonee Valley and Moorabool.
- The LGAs with the highest number of hospitalisations related to alcohol consumption are broadly those where consumption is highest. However, **Brimbank and Hume** also have **higher rates of hospitalisation related to alcohol consumption**, despite consumption there being below the average for the region.
- The high prison population in Melton (Dame Phyllis Frost Centre, population ~313 female prisoners; Metropolitan Remand Centre, ~690 adult prisoners; Ravehall

Correctional Centre, ~ 852 adult prisoners,) also has the potential to impact alcohol consumption and hospitalisation due to illicit drug use rates (Australian Bureau of Statistics, 2022). This is due to both alcohol and illicit drugs being banned in prisons.

- Excluding Maribyrnong, **rates of hospitalisation due to illicit drug use in the WM HSP region are lower than in Greater Melbourne and Victoria**.

Females are much less likely to drink alcohol at risky levels than males.

Figure 10. Estimated rate per 100 people aged 18 years and over who consumed more than two standard drinks a day, 2017/18.

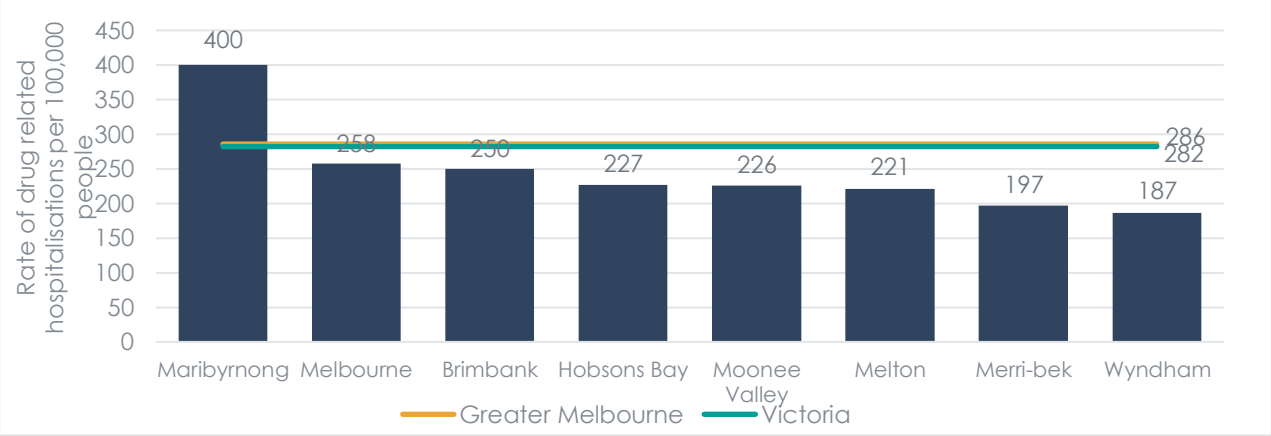


Note: The National Health and Medical Research Council guidelines for lifetime risk state that, for healthy men and women, drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury[2]

Source: Compiled by PHIDU based on direct estimates from the 2017/18 National Health Survey, ABS Survey TableBuilder (Public Health Information Development Unit (PHIDU), 2022).

Maribyrnong has a high rate of hospitalisation due to illicit drug-related events.

Figure 11. Rates of hospitalisations from illicit drug-related events per 100,000 population in West Metro region, 2020.



Source: AOD stats: Victorian alcohol and drug statistics (Turning Point, 2022).

[2] *Please note, since this data was gathered, the NHMRC has adjusted its alcohol guidelines downwards.* https://www.nhmrc.gov.au/health-advice/alcohol

Quantified need based on risk factors

Metric 3 captures attributes, characteristics, actions, and exposures that increase the likelihood of poor health. These are unevenly distributed across the region's population.

Melbourne–*part a* had the highest level of need related to risk factors, driven by low vaccination and cancer screening rates. Wyndham, Brimbank, Merri-bek and Melton, have the highest need when population is adjusted for risk factors.

Table 8. Quantified need based on risk factors.

LGA	Born LBW* (%)	Vulnerable 1+ domains AEDC (%)*	Rate of FV* by 100,000	Current adult smokers* (%)	2+ standard drinks (%)*[3]	Low or very low physical activity (%)	Adults living with obesity (%)*	Children 5 years not fully vaccinated* (%)	Bowel cancer screening (%)	Breast screening (%)	Cervical screening (%)	Average index	Average index as % of all LGAs	% of Projected population (2025)	Adjusted population need
Melbourne–*part a*	1.0	1.0	1.1	0.9	0.8	1.0	0.8	2.4	1.2	1.3	1.5	1.2	11.4%	11.0%	11.1%
Maribyrnong	0.9	0.8	0.9	1.1	0.7	1.0	0.9	1.2	1.1	1.1	1.0	1.0	9.3%	6.7%	7.1%
Brimbank	1.1	1.5	1.1	1.2	0.5	1.2	1.1	1.2	1.1	1.0	1.1	1.1	10.3%	14.4%	13.8%
Hobsons Bay	1.0	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.0	1.0	0.9	1.0	9.4%	7.0%	7.4%
Moonee Valley	0.9	0.7	0.8	0.9	1.0	0.9	0.9	1.0	1.0	0.9	1.0	0.9	8.7%	8.9%	8.9%
Merri-bek	0.9	1.0	0.9	1.0	0.8	1.0	1.0	1.2	1.1	1.0	1.0	1.0	9.5%	13.1%	12.6%
Hume–*part a*	1.0	1.4	1.2	1.2	0.6	1.1	1.2	1.1	1.1	1.1	1.1	1.1	10.7%	3.9%	4.9%
Melton	1.1	1.2	1.2	1.1	0.7	1.1	1.3	0.7	1.2	1.1	1.1	1.1	10.3%	12.6%	12.3%
Wyndham	1.2	1.1	1.0	1.0	0.5	1.1	1.1	1.2	1.1	1.1	1.2	1.1	10.3%	20.9%	19.3%
Moorabool–*part a*	1.2	1.1	1.0	1.2	1.1	1.0	1.3	0.7	1.0	1.0	1.0	1.1	10.1%	1.5%	2.8%

[3] Please note, since this data was gathered, the NHMRC has adjusted its alcohol guidelines downwards. https://www.nhmrc.gov.au/health-advice/alcohol

2.5 Metric 4 – Access and geographical environment

Metric 4 refers to factors that affect access to health care, as well as the physical environment in which individuals live.

Framing access

Tanahashi's model considers five elements necessary for effective health service coverage. At each coverage level, various factors within the health system interact to influence who has access to services. The following section is organised into these concepts.

Availability coverage

Availability coverage for access to primary healthcare refers to the extent to which healthcare services are physically present and accessible in each area. This includes the availability of healthcare facilities, equipment, medications, and healthcare professionals such as doctors, nurses, and support staff.

- There are healthcare **workforce shortages across the WM HSP region**. The most populated and disadvantaged LGAs, Brimbank, Wyndham and Melton, have the greatest workforce shortages, including GPs.
- The trend of **declining GPs per capita in Melton and Moorabool** is also concerning. In addition, **Brimbank, Hobsons Bay, Wyndham, Hume, Moorabool, and Melton had fewer GPs per capita** than the Victorian average.
- Of note, all LGAs in the WM HSP except Melbourne and Maribyrnong have **lower healthcare workforce** rates than the Victorian average.
- Taken together with other factors, such as differences in age profiles of GPs across LGAs, it is possible that shortages could start emerging in other regions. Notably, **younger GPs (aged 25 - 34) were less likely to be working in Wyndham, Melton, Maribyrnong and Brimbank**.

Accessibility coverage

Accessibility coverage related to healthcare is about determining whether all members of the population can use or access services regardless of their location, financial status, or physical limitations, including geographic accessibility, financial affordability, and physical accessibility to healthcare services.

- Melton, Hume (part a), and Moorabool (part a) have relative disadvantage in terms of 'distance to the closest bulk-billing GP clinic with no out-of-pocket costs.
- Importantly, there are differences in access even throughout LGAs. For example, there is significant variability between the maximum and minimum distance to bulk-billing GPs across postcodes within Melton, likely due to the varied settlement pattern across the LGA. Some areas of Brimbank – the most disadvantaged LGA in

the region - have much further to travel to access bulk-billing GP services (maximum of 4.6km,) than other suburban LGAs.

Acceptability coverage

Acceptability coverage refers to the extent to which people are willing to access the healthcare services and find the costs, wait times, and attitudes toward treatment acceptable.

Findings related to acceptability will be covered in Part B2 Community and Health Provider Consultation, due to the absence of relevant available quantitative data.

Contact coverage

Contact coverage is an important measure of healthcare access because it reflects the ability of individuals to obtain the care they need when they need it, including services such as routine check-ups, preventative care, and treatment for minor illnesses and injuries.

- City of Melbourne, Brunswick, Coburg, and Essendon have higher out-of-pocket cost per patient/service, for GP, diagnostic imaging, allied health, and specialist services. While utilisation was also below national averages for GP and imaging, it was above average for allied health in these LGAs.
- Utilisation rates were low across all LGAs in relation for nursing and Aboriginal health workers and specialist utilisation was low in growth areas (Wyndham, Melton) and areas with relatively more disadvantage (such as Brimbank).

Effective coverage

Effective coverage is the proportion of the population in need of an intervention that receives an effective intervention. A key aspect of effective coverage is to reduce PPHs and avoidable ED presentations, which can be seen as indicators of gaps in primary care (Rosano et al., 2013).

- The total number of PPHs in WM HSP declined between 2019/20 and 2021/22 for both acute and chronic conditions. Vaccine-preventable conditions on the other hand have more than doubled between 2020/21 and 2021/22.
- There are higher numbers of PPHs among young people (0-19) and older people (80+). LGAs with higher PPHs for chronic conditions tend to have older age profiles.
- The number of ED presentations across the WM HSP was relatively stable between 2019/20 (319,805) and 2020/21 (319,646) but increased in 2021/22 (347,199).
- Wyndham, Melton, and Melbourne–*part a* had the largest Increases in ED presentations.
- The proportion of ED presentations that meet the definition of avoidable have remained steady since 2019 (29- 30 %).

- Hobsons Bay has consistently had the highest rates of avoidable ED presentations at 40 % in 2019/20 and 2020/21, and 39 % in 2021/22.

Table 9. Summary findings across key indicators of healthcare access, 2021/22.

Section	Indicators	Wyndham	Merri-bek	Melton	Hobsons Bay	Moonee Valley	Brimbank	Maribyrnong	Melbourne–part a	Hume–part a	Moorabool–part a
Availability coverage	General Practitioners workforce shortages*	■	■	■	■	■	■			■	■
	Dental Practitioners workforce shortages*	■	■	■	■	■	■			■	■
	Medical Radiation Practitioners workforce shortages*	■	■	■	■	■	■			■	■
	Nurses and Midwives workforce shortages*	■	■	■	■	■	■			■	■
	Allied health professionals workforce shortages*	■	■	■	■		■			■	■
	Specialist workforce shortages*	■	■	■	■	■	■			■	■
	Health Infrastructure Index^	■		■			■			■	■
	District of workforce shortage for medical specialists**	■	■	■	■	■	■	■		■	■
Accessibility coverage	Distance to closest bulk-billing GP clinic with no out-of-pocket costs^			■						■	■
	Out-of-pocket cost per service - GP in 2021/22**		■						■		
	Out-of-pocket cost per service - Diagnostic imaging in 2021/22**		■			■		■	■		
	Out-of-pocket cost per service - Allied health in 2021/22**		■		■	■		■	■		
	Out-of-pocket cost per service - Specialist in 2021/22**		■						■		
	Out-of-pocket cost per service - Nursing and Aboriginal Health Workers in 2021/22**		■		■	■		■	■	■	
Contact coverage	Utilisation rate of Medicare-subsidised service - GP in 2021/22**		■			■		■	■		
	Utilisation rate of Medicare-subsidised service - Diagnostic imaging in 2021/22**	■	■	■	■	■	■	■	■		■
	Utilisation rate of Medicare-subsidised service - Allied health in 2021/22**	■	■	■	■	■	■	■	■		■
	Utilisation rate of Medicare-subsidised service - Specialist in 2021/22**	■	■	■	■	■	■	■	■		■
	Utilisation rate of Medicare-subsidised service - Nursing and Aboriginal Health Workers in 2021/22**	■	■	■	■	■	■	■	■	■	■
	Mental Health Episodes of Care rates per 10,000 people in 2021/22***			■	■		■			■	■
Effective coverage	PPH rates - acute conditions in 2021/22***	■	■	■	■	■				■	■
	PPH rates - chronic conditions in 2021/22***		■	■	■	■	■			■	■
	PPH rates - Vaccine-preventable conditions in 2021/22***			■	■		■			■	
	Rates of Avoidable ED presentation in 2021/22***		■	■	■	■		■			

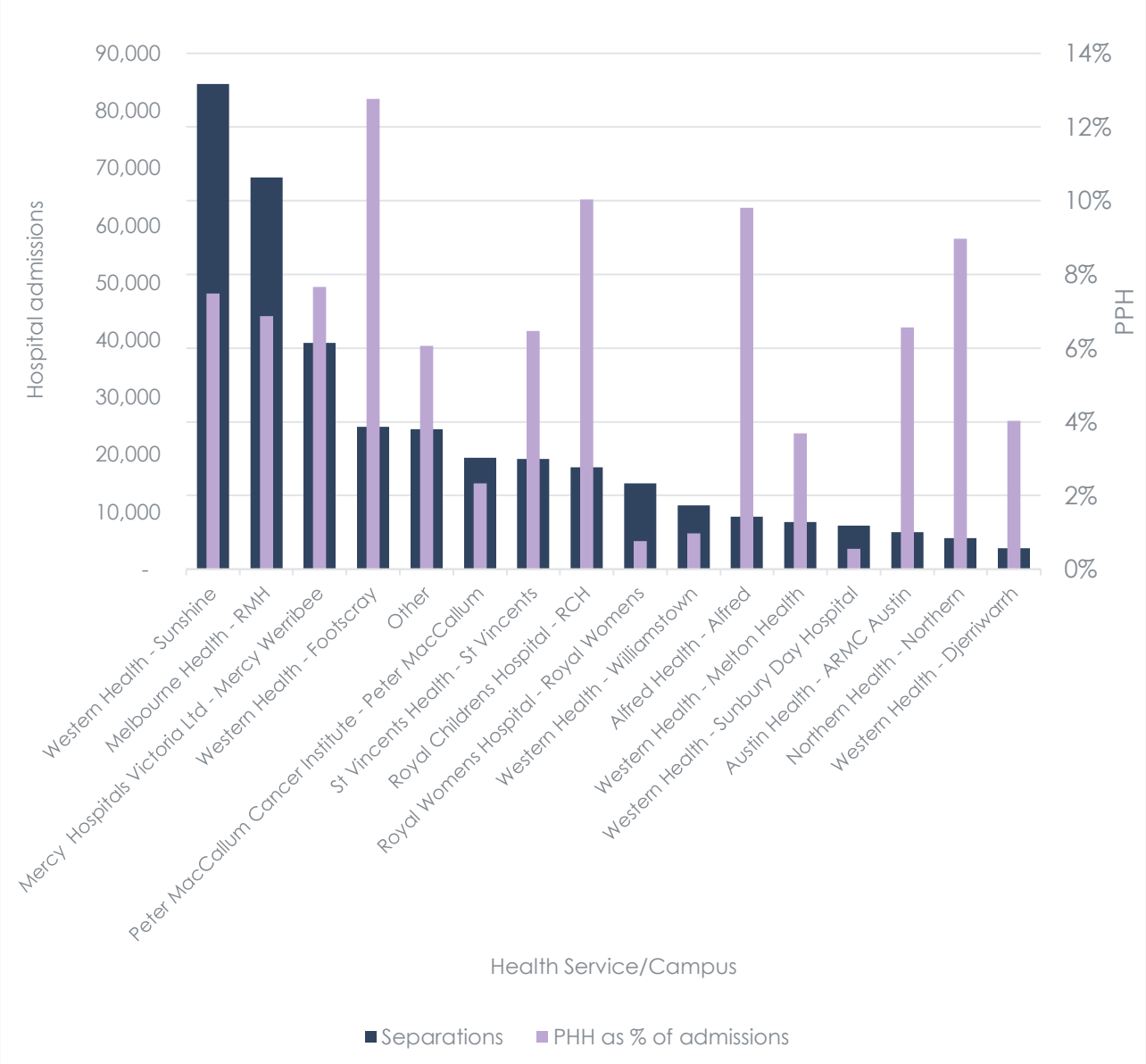
Data sources: (Department of Health and Aged Care (DHAC), 2022); (Australian Government Department of Health and Aged Care (DHAC), 2021); (North Western Melbourne Primary Health Network (NWMPHN) & Pen CS, 2023); (Australian Institute of Health and Welfare (AIHW), 2022); (Australian Bureau of Statistics, 2022)

Table notes: **LGAs with disadvantages are highlighted in pink.**
*LGAs with disadvantage are defined when their rates are lower (or costs/distance are higher) than Victorian level.
**LGAs with disadvantage are defined when their rates are lower (or costs/distance are higher) than National level.
***LGAs with disadvantage are defined when their rates are lower (or costs/distance are higher) than WM HSP level.
^LGAs with disadvantage are defined when their rates are lower (or costs/distance are higher) than Melbourne level.

Sunshine Hospital and RMH receive the largest number of patients from the WM HSP region. PPHs as a proportion of admissions are highest at Western Health and Royal Children's Hospital.

- Sunshine Hospital and Royal Melbourne Hospital had the largest number of hospital admissions across the WM HSP region.
- A significant number of West Metro residents attend St Vincent's, Northern and Austin hospitals, possibly due to proximity, preference, or other reasons (e.g., ambulance routing).
- There is significant variation in PPHs by hospital campus (5.7 % average across the region).
- Private hospitalisations; hospital admissions: 166,687 (31 %) and PPH: 3.5 %

Figure 12. West Metro resident hospital admissions and PPHs in public hospitals, 2021/22.



Source: Victorian Admitted Episodes Dataset, VAHI, 2021/22

In 2020/21, avoidable ED presentations accounted for 29% of the total ED presentations in the WM HSP region.

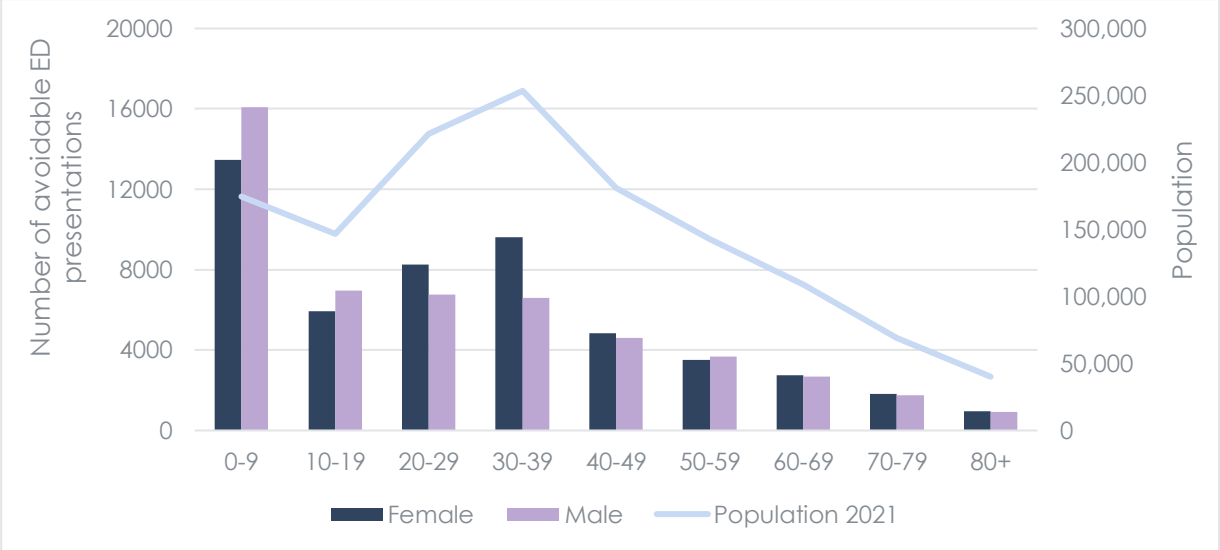
- Avoidable ED presentations however did not substantially differ within LGAs over time.
- Wyndham had the highest number of avoidable ED presentations across each financial year from 2019/20, followed by Merri-bek and Hobsons Bay.
- Higher rates of avoidable ED presentations (compared with WM HSP average) were found in Melbourne–*part a*, Moonee Valley, Merri-bek, Hobsons Bay and Maribyrnong.

Please note that this analysis uses the AIHW definition of avoidable ED presentations. Health services or clinicians within health services may consider many of these attendances appropriate despite meeting the definition of avoidable.

Women and children

- The total number of avoidable ED presentations were comparable between females and males across age cohorts.
- There were more female avoidable ED presentations in age group 30-39 age group compared with males.
- The top reasons for females' avoidable ED presentations were abdominal pain and infections, followed by injuries and "Diseases of the Genitourinary System", "Pregnancy Childbirth and the Puerperium".
- In 2021/22, more than half of the avoidable ED presentations were found in young people (0-29 years' old), particularly in 0-9 years' old children (29%). The most common reasons for avoidable ED presentations in children aged 0-9 were infections, followed by injuries.

Figure 13. Number of avoidable ED Presentations by gender and age category, 2021/22.



Source: Victorian Emergency Minimum Dataset, VAHI, 2021/22

Table 10. Numbers and rates of avoidable ED presentations by LGA, 2019/20 - 2021/22.

LGA	2019/20			2020/21			2021/22			
	N of total ED presentation	N of avoidable ED presentations	% of ED presentations	N of total ED presentation	N of avoidable ED presentations (% change from 2019/20)	% of ED presentations	N of total ED presentation	N of avoidable ED presentations (% change from 2019/20)	% of ED presentations	Rates of avoidable ED presentation (per 1000 people)*
Wyndham	62,849	18,005	29%	63,453	17,444 (-3.2%)	27%	72,854	18,734 (7.4%)	26%	64
Melton	52,078	13,737	26%	52,844	13,952 (1.5%)	26%	59,477	15,741 (12.8%)	26%	88
Merri-bek	36,882	11,402	31%	36,649	11,551 (1.3%)	32%	38,184	11,652 (0.9%)	31%	68
Brimbank	37,769	9,620	25%	35,398	8,961 (-7.4%)	25%	36,546	9,506 (6.1%)	26%	49
Melbourne–*part a*	27,597	9,994	36%	29,908	10,316 (3.1%)	34%	33,888	11,677 (13.2%)	34%	78
Moonee Valley	31,174	9,320	30%	30,822	9,324 (0.0%)	30%	31,994	9,739 (4.5%)	30%	80
Hobsons Bay	30,428	12,158	40%	29,748	11,864 (-2.5%)	40%	30,911	12,123 (2.2%)	39%	133
Hume	19,208	4,831	25%	19,183	4,909 (1.6%)	26%	20,748	5,408 (10.2%)	26%	22
Maribyrnong	17,660	5,795	33%	17,188	5,753 (-0.7%)	33%	17,994	5,757 (0.1%)	32%	68
Moorabool–*part a*	4,160	754	18%	4,453	827 (8.8%)	19%	4,603	852 (3.0%)	19%	23
WM HSP	**319,805**	**95,616**	**30%**	**319,646**	**94,901 (-0.8%)**	**30%**	**347,199**	**101,189 (6.6%)**	**29%**	**65**

Source: Victorian Emergency Minimum Dataset, VAHI, 2021/22 (Victorian Agency for Health Information, 2023b).

Table note: *LGAs with rates higher than WM HSP average are highlighted in yellow.

Quantified need based on access and geographical environment

Metric 4 recognises that the health system itself is a social determinant and plays an important role in mediating the differential consequences of illness in people's lives.

Melton, Hume–*part a* and Hobsons Bay have the highest level of need related to access and geographical environment. Wyndham, Brimbank, Merri-bek and Melton continue to have the highest need when population is adjusted for access and geographical environment.

Table 11. Quantified need based on access and geographical environment.

LGA	Health Infrastructure Index	GP workforce (FTE) per 10,000 propel	Nurses and Midwives workforce (FTE) per 10,000 propel	Utilisation rates (%) of Medicare-subsidised service - GP	Utilisation rates (%) of Medicare-subsidised service - Diagnostic imaging	Utilisation rates (%) of Medicare-subsidised service - Specialists	PPH – Acute conditions rates per 10,000 people	PPH – Chronic conditions rates per 10,000 people	PPH – Vaccine-preventable conditions rates per 10,000 people	Avoidable ED presentation rates per 1,000 people	Average index	**Average index as % of all LGAs**	**% of Projected population (2025)**	**Adjusted population need**
Melbourne–*part a*	0.6	0.6	0.2	1.4	1.6	1.7	0.7	0.5	0.5	0.5	0.8	7.0%	11.0%	10.4%
Maribyrnong	0.6	0.9	0.8	1.0	1.1	1.3	1.0	0.8	1.0	1.2	1.0	8.4%	6.7%	7.0%
Brimbank	1.4	1.1	1.1	1.0	1.0	1.3	1.0	1.1	1.6	0.7	1.1	9.5%	14.4%	13.7%
Hobsons Bay	0.9	1.0	2.4	1.0	1.0	1.1	1.2	1.1	1.2	1.9	1.3	10.8%	7.0%	7.6%
Moonee Valley	0.7	1.1	2.9	1.0	1.0	1.1	1.2	1.1	0.8	1.1	1.2	10.2%	8.9%	9.1%
Merri-bek	0.7	1.0	2.2	1.0	1.1	1.2	1.1	1.2	1.0	1.3	1.2	10.1%	13.1%	12.6%
Hume–*part a*	1.4	1.2	3.2	0.9	0.9	1.1	1.3	1.5	1.1	0.9	1.4	11.5%	3.9%	5.0%
Melton	2.1	1.6	3.7	1.0	1.0	1.4	1.0	1.0	1.1	1.0	1.5	12.6%	12.6%	12.6%
Wyndham	1.6	1.1	2.1	1.0	1.1	1.5	0.9	0.9	0.8	0.9	1.2	10.2%	20.9%	19.3%
Moorabool–*part a*	1.9	1.1	1.9	1.0	1.0	1.4	1.0	1.2	0.5	0.4	1.2	9.8%	1.5%	2.7%

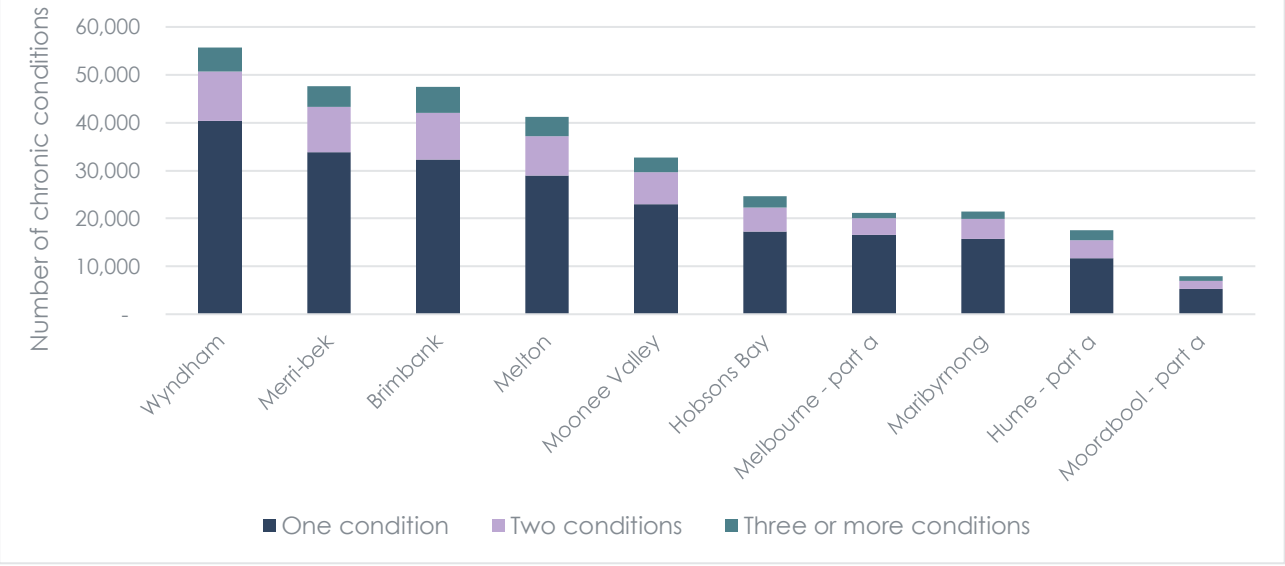
2.6 Metric 5 – Health conditions and consequences

Metric 5 refers to the prevalence and impact of health conditions or diseases. Understanding the most common health conditions and their consequences can help to prioritise interventions and allocate resources to areas of greatest need.

Ill health profile

- Merri-bek has the second largest number of people who reported living with at least one chronic condition and fourth largest population. Melbourne has the seventh largest number of people reporting at least one chronic condition and fifth largest population.
- A greater proportion of residents in Hume–*part a*, Moorabool–*part a*, and Merri-bek live with chronic conditions compared with the Victorian average. A smaller proportion of residents in Melton, Wyndham and Melbourne–*part a* live with chronic conditions compared with the Victorian and WM HSP average.
- Male and female Aboriginal and/or Torres Strait Islander people from Maribyrnong and Merri-bek have an increased number of one or more chronic health conditions compared with male and female Aboriginal and/or Torres Strait Islander people from Greater Melbourne. Other than Hobsons Bay, Melton, and Wyndham female Aboriginal and/or Torres Strait Islander people have an increased number of two or more chronic health conditions compared with Aboriginal and/or Torres Strait Islander people from Greater Melbourne.

Figure 14. Number of chronic health conditions by LGA, 2021.



Source: Census 2021, ABS

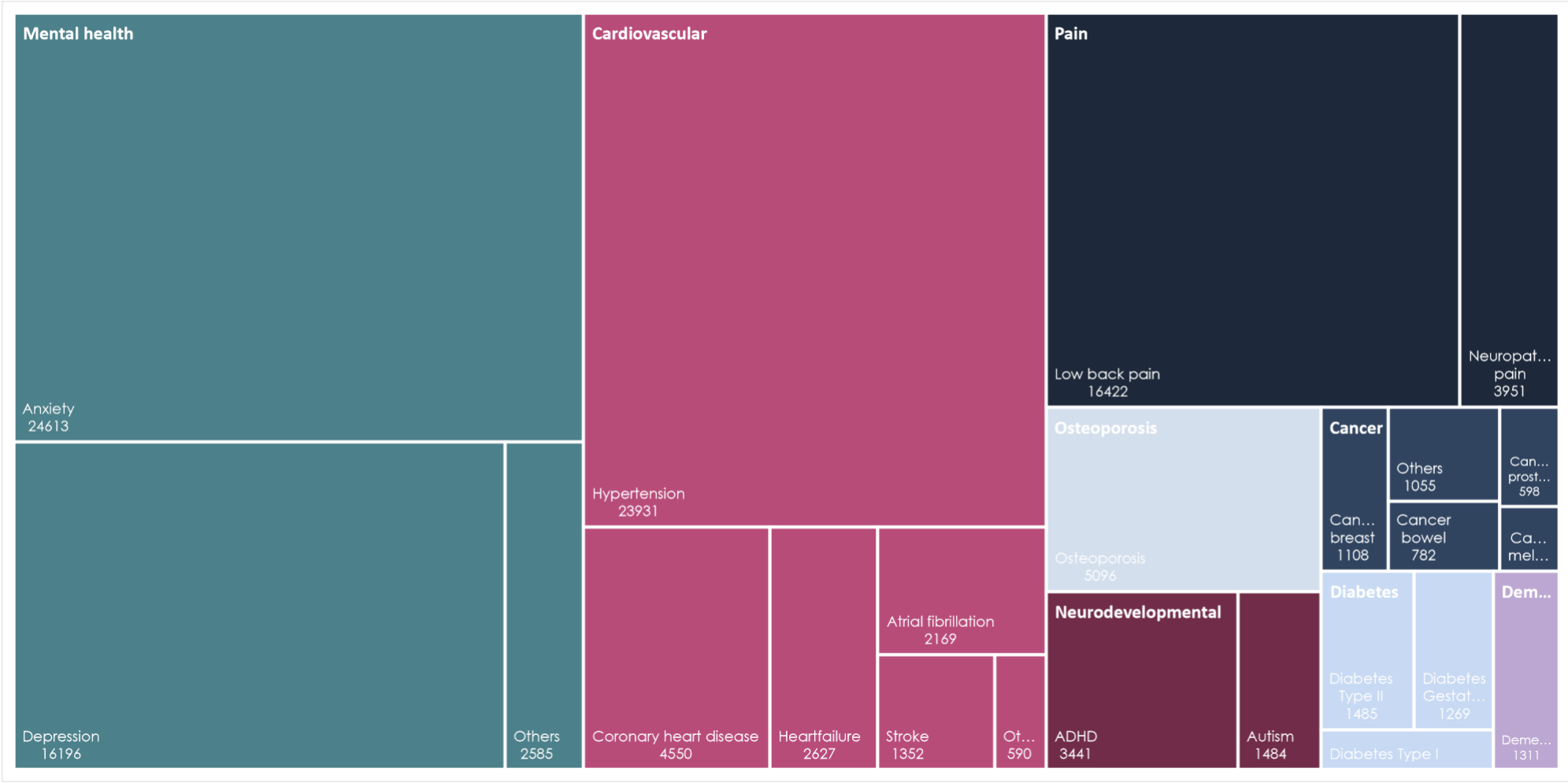
- Census and GP new diagnosis data show that anxiety and depression are higher in females compared with males across the WM HSP region. Merri-bek, Hume, Moorabool, and Maribyrnong have higher rates of females with depression and anxiety compared with Victoria and the WM HSP region overall.
- The prevalence of diabetes was higher in males than females across LGAs according to the Census. However, GP 'new diagnosis' data showed males had higher type I diagnoses, but rates were similar between males and females for type II (noting the limitations of the new diagnosis: the data will not account for patients who have seen multiple GPs in the time period, therefore single patients could have a single diagnosis reported more than once).
- The prevalence rates of cancer were slightly lower in the WM HSP region compared with Victoria as reported in the Census and rates did not vary much between males and females. However, GP new diagnosis data showed that Moonee Valley had a high rate of cancer diagnosis relative to its population. The Census also identified Moonee Valley as having higher rates.) Melbourne–*part a* and Wyndham had lower rates of diagnosis. Furthermore, 67 % of people diagnosed with cancer were women and 36 % of people diagnosed with cancer were aged 45-65, and about 46 % of the cancer patients were aged 65 or older.

Table 12. Prevalence of chronic condition-type by LGA, 2021.

Condition	Anxiety and Depression		Asthma		Diabetes		Heart Disease		Arthritis		Cancer		Stroke	
LGA	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Brimbank	4.9%	7.6%	6.9%	7.6%	6.7%	6.2%	4.2%	2.6%	4.7%	9.3%	2.0%	2.2%	1.1%	0.9%
Hobson Bay	6.6%	10.1%	7.6%	8.8%	5.1%	4.4%	4.3%	2.9%	5.3%	9.7%	2.4%	2.7%	1.0%	0.9%
Maribyrnong	7.6%	12.2%	8.0%	9.0%	4.2%	3.7%	2.8%	1.8%	3.6%	6.9%	1.7%	2.0%	0.8%	0.6%
Melton	5.5%	8.9%	7.7%	9.0%	5.4%	4.4%	3.1%	1.9%	3.9%	7.5%	1.5%	1.9%	0.7%	0.6%
Moonee Valley	6.6%	10.1%	7.4%	8.4%	4.7%	3.9%	4.6%	2.9%	5.2%	9.8%	2.9%	2.8%	1.0%	0.8%
Merri-bek	8.3%	13.6%	8.0%	9.1%	4.6%	4.0%	3.6%	2.6%	4.5%	9.0%	2.0%	2.5%	0.9%	0.7%
Wyndham	4.3%	7.1%	5.9%	7.2%	4.8%	3.9%	2.7%	1.6%	3.1%	6.0%	1.2%	1.5%	0.5%	0.5%
Hume–*part a*	8.2%	12.9%	9.3%	11.6%	6.3%	5.1%	5.3%	3.3%	6.8%	12.3%	3.1%	3.0%	1.1%	0.9%
Melbourne–*part a*	6.2%	9.3%	6.0%	6.2%	2.2%	1.5%	1.7%	1.0%	2.1%	3.2%	1.2%	1.2%	0.4%	0.3%
Moorabool–*part a*	8.1%	13.4%	8.9%	11.7%	5.7%	4.5%	4.9%	3.0%	6.5%	12.0%	2.8%	3.2%	1.2%	1.2%
West Metro	**5.9%**	**9.4%**	**7.1%**	**8.3%**	**5.2%**	**4.4%**	**3.5%**	**2.2%**	**4.1%**	**8.1%**	**1.8%**	**2.1%**	**0.8%**	**0.7%**
Victoria	6.8%	10.7%	7.6%	9.1%	5.2%	4.2%	4.6%	2.9%	5.7%	10.2%	2.7%	2.8%	1.0%	0.8%

Source: Census 2021, ABS

Figure 15. New diagnosis recorded by general practice, March 2022 - February 2023.



Notes: 35 diagnoses were included in the analysis and were counted if a patient had a valid diagnosis recorded during a GP clinic visit between 1 January 2022 and 31 December 2022 and data was received by NWMPHN (i.e., through the PATCAT system). The diagnosis counts were calculated as the number of distinct patients by the selected health condition for residents of the WM HSP region (based on patient postcode). NWMPHN does not receive data from all General Practices across the region, so these numbers are likely to be underrepresented. Further, the data will not account for patients who have seen multiple GPs in the time period, therefore single patients could have a single diagnosis reported more than once.

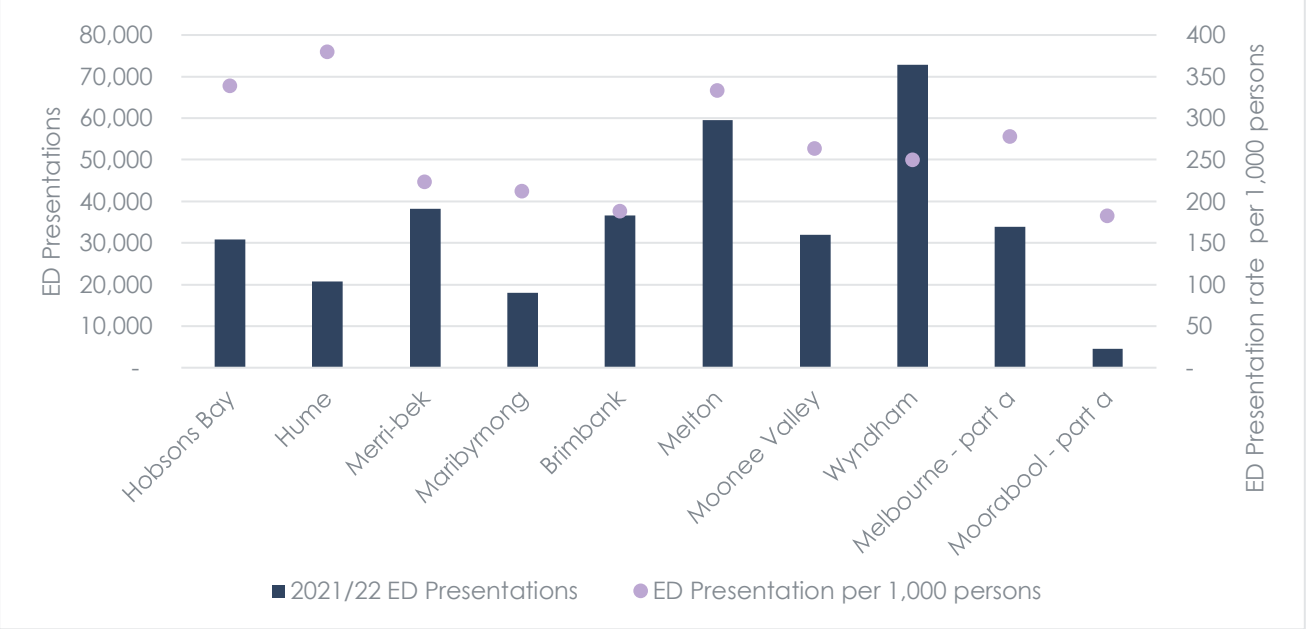
Source: PAT CAT, February 2023 (North Western Melbourne Primary Health Network (NWMPHN) & Pen CS, 2023)

Acute care: Hospitalisation and ED presentations

ED presentations increased by almost nine % between 2020-21 and 2021-22 for patients from the WM HSP. The proportion increase was similar for males and females.

- Variation in the number of ED presentations across LGAs broadly reflects the population distribution.
- Hobsons Bay (338), Hume (379), Merri-bek (223), and Maribyrnong (211) have a higher ED presentation rate than the WM HSP average (267). Whereas Moorabool–*part a* had a much lower ED presentation rate than the WM HSP average.

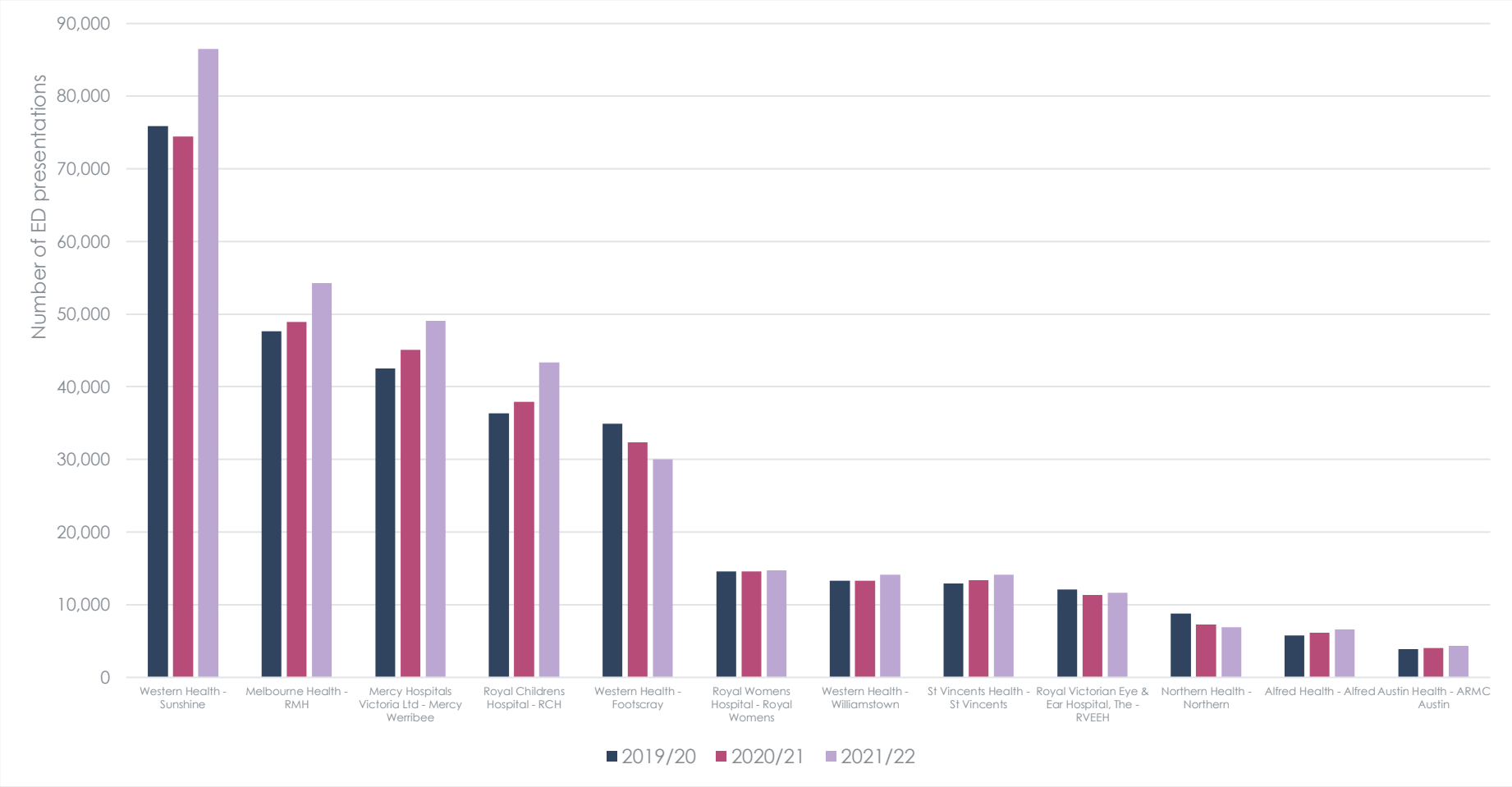
Figure 16. ED Presentations and presentation rate per 1,000 persons by LGA in WM HSP, 2021/22.



Source: Victorian Admitted Episodes Dataset, VAHI, 2021/22; Census 2021

In 2021/22, 12 hospitals accounted for more than 97 % of the 356,979 ED presentations by residents in the WM HSP region. Most hospitals experienced an increase in ED presentations in 2021/22, with the exception of Footscray Hospital and Northern Hospital.

Figure 17. ED presentations by hospital, 2021/22.

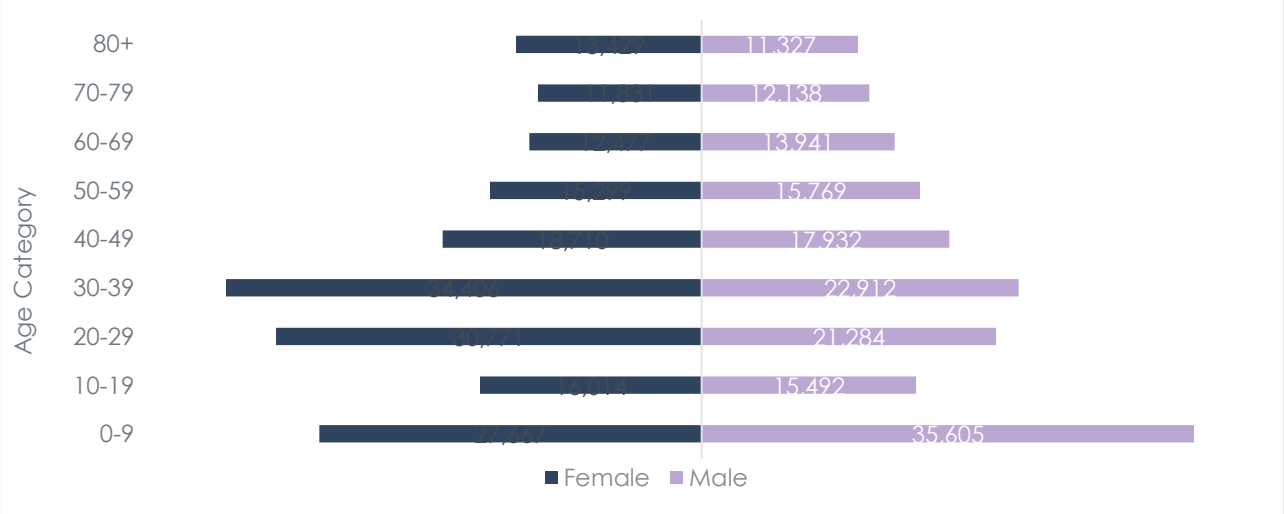


Source: Victorian Admitted Episodes Dataset, VAHI, 2021/22

Women and children

Females 20- 39 account for the greatest number of ED presentations, possibly for reasons relating to pregnancy and childbirth. Young children aged 0-9 account for the largest number of ED presentations.

Figure 18. ED presentations by age and gender, 2021/22.

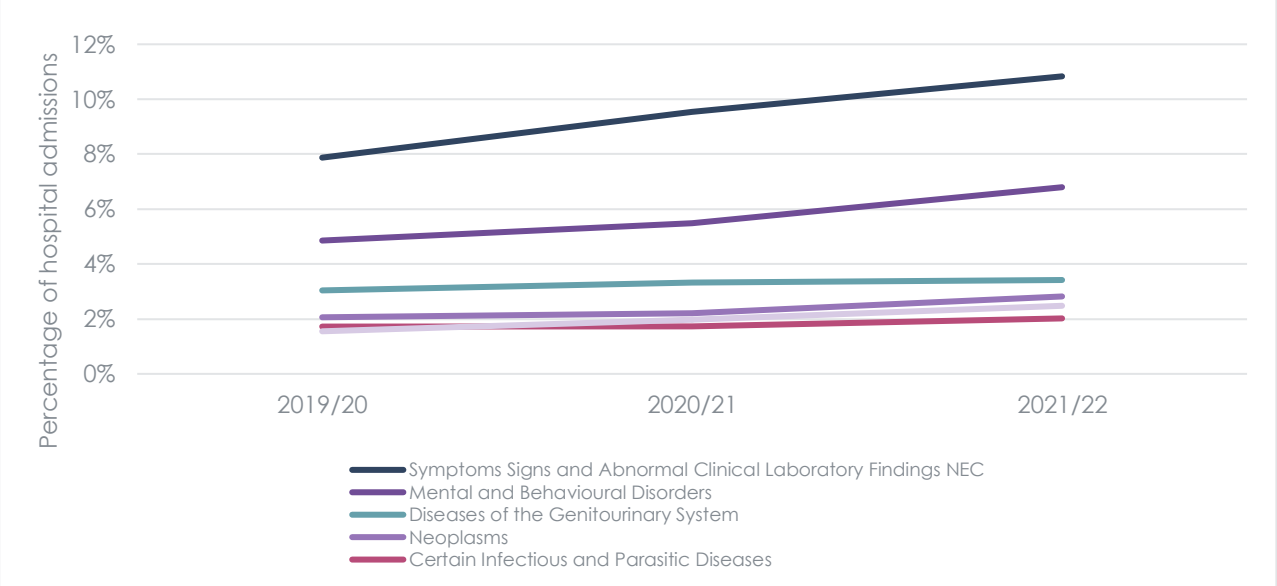


Source: Victorian Admitted Episodes Dataset, VAHI, 2021/22

Aboriginal and Torres Strait Islander people

Hospitalisations of Aboriginal and Torres Strait Islander people increased by 2 % from 2019-20 to 2021-22. While ED presentations increased by 31 % in the same period.

Figure 19. Notable changes in primary diagnoses, 2019/20 - 2021/22 for Aboriginal and Torres Strait Islander people.



Source: Victorian Admitted Episodes Dataset, VAHI, 2019/20 - 2021/22

Note: 'Symptoms Signs and Abnormal Clinical Laboratory Findings NEC,' (Figure 19) is a category in the VAED dataset that includes any symptoms, signs, or abnormal clinical laboratory findings that are not specifically classified elsewhere in the dataset. This can include a wide variety of conditions, such as fever, cough, shortness of breath, abnormal blood tests, and abnormal imaging findings.

Language other than English speakers

Language other than English (LOTE) speakers account for 41.5 % of the regions' population and 14.6 % of all hospital admissions in 2021-22.

9.1 % of ED presentations in the period 2019-20 to 2021-22 were people who prefer to speak a language other than English (LOTE).

From 2019-20 to 2021-22, LOTE speakers were:

- Significantly less likely to be diagnosed with injury, poisoning and certain other consequences of external causes.
- Less likely to be diagnosed with mental and behavioural disorders (including a reduced proportion of presentations due to psychoactive substance use).
- More likely to be diagnosed with diseases of the circulatory, respiratory, digestive and respiratory systems.
- More likely to be diagnosed with symptoms, signs and abnormal clinical laboratory findings not elsewhere classifiable (NEC).

Premature and avoidable deaths and mortality

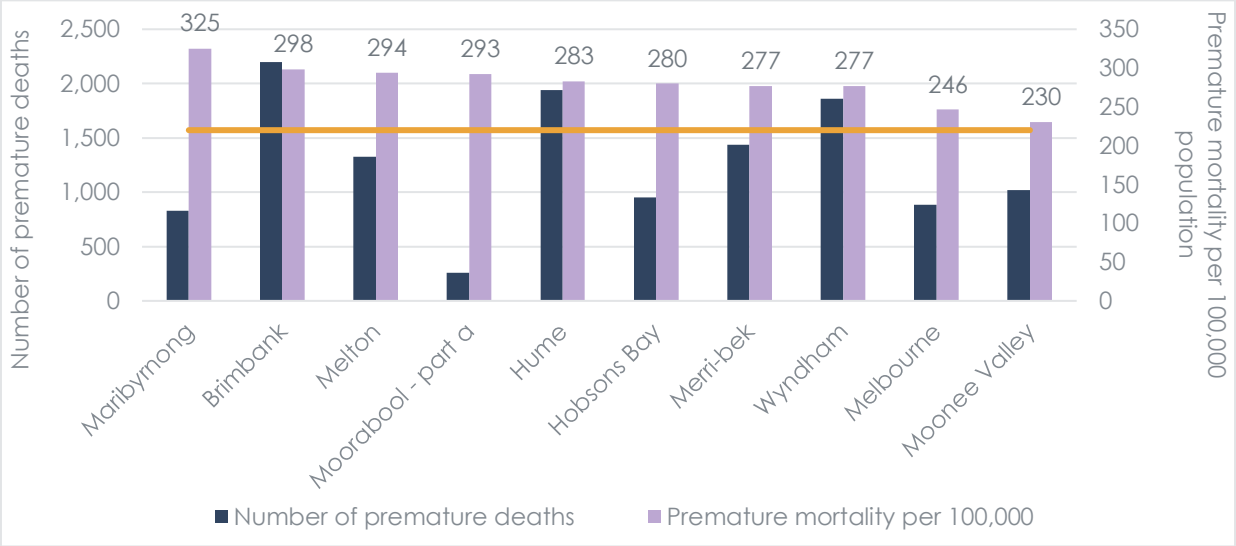
Premature death is defined as the death of a person under the age of 75. Premature mortality is the number of premature deaths in a population, expressed as a rate per 100,000 population. Avoidable death and avoidable mortality are defined as deaths that could have been prevented with timely and effective medical care. Avoidable mortality is the number of avoidable deaths in a population, expressed as a rate per 100,000 population (Public Health Information Development Unit (PHIDU), 2022).[4]

- There were 12,701 premature and 6,450 avoidable deaths in WM HSP region between 2016- 2020.
- All LGAs in the **WM HSP region had an annual premature mortality greater than Victorian** level of 220 per 100,000, and an **annual avoidable mortality greater than Victorian** level of 110 per 100,000, except for Moonee Valley.
- **Brimbank had the largest number of premature deaths**, the second largest annual premature mortality rate, the largest number of avoidable deaths and third largest annual avoidable mortality rate between 2016 – 2020.
- **Maribyrnong had the highest premature and avoidable mortality rates.** This is particularly interesting, given the relatively better health workforce availability and service utilisation compared with other LGAs in the region. However, Maribyrnong also has an ED presentation and avoidable ED rate above the WM HSP average.

[4] *COVID-19 deaths were not included in the National Healthcare Agreement: PI 16–Potentially avoidable deaths, 2020. The agreement defines potentially avoidable deaths as deaths that could have been prevented with timely and effective medical care. COVID-19 is a new and rapidly evolving disease, and there is still much that we do not know about how to prevent and treat it. As a result, it is not possible to say definitively whether any COVID-19 deaths could have been prevented with timely and effective medical care.*

- Melton, in contrast to Maribyrnong, has health workforce shortages and utilisation issues, so it is perhaps less surprising that they have the third highest premature mortality rate and second highest avoidable mortality rate. ED presentation rate was below the WM HSP average but avoidable ED presentations was higher.

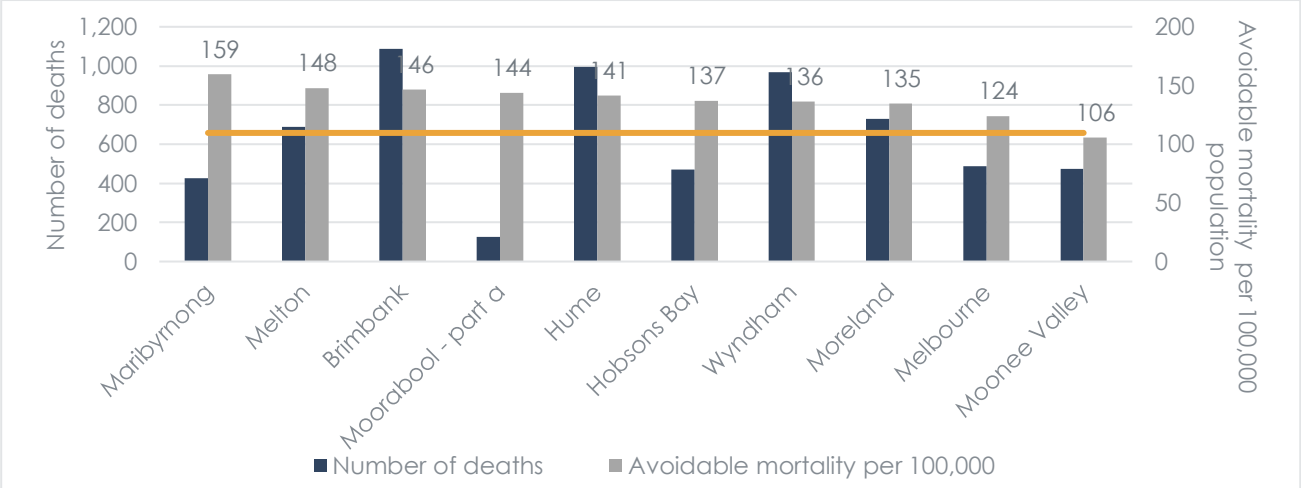
Figure 20. Number of premature deaths and average annual age-standardised premature mortality rates per 100,000 population, 2016 - 2020.



Note: The orange horizontal line indicates the average rate in Victoria (220 per 100,000 people) from 2016 to 2020. Data for Melbourne and Hume comes from the entire LGA, which includes postcodes that are not in WM HSP region.

Source: Data compiled by PHIDU from deaths data based on the 2016 to 2020 Cause of Death Unit Record Files supplied by the Australian Coordinating Registry and the Victorian Department of Justice, on behalf of the Registries of Births, Deaths and Marriages and the National Coronial Information system (Public Health Information Development Unit (PHIDU), 2022).

Figure 21. Number of avoidable deaths and average annual age-standardised avoidable mortality rates per 100,000 population (aged 0 to 74), 2016 - 2020.



Note: The orange horizontal line indicates the average rate in Victoria (110 per 100,000 people). Data for Melbourne and Hume comes from the entire LGA, which include postcodes that are not in WM HSP region.

Source: Data compiled by PHIDU from deaths data based on the 2016 to 2020 Cause of Death Unit Record Files supplied by the Australian Coordinating Registry and the Victorian Department of Justice, on behalf of the Registries of Births, Deaths and Marriages and the National Coronial Information system (Public Health Information Development Unit (PHIDU), 2022)

Quantified need based on access to health conditions and consequences

Metric 5 recognises that social position is an important factor driving health consequences (or outcomes). So, a loading is applied to health conditions, disease and premature death.

Hume–*part a* has the highest level of need related to health conditions and consequences. Wyndham, Brimbank, Merri-bek and Melton continue to have the highest need when population is adjusted for health conditions and consequences.

Table 13. Quantified need based on health conditions and consequences.

Region	LGA	In-patient hospitalisation rates per 1,000 people (2021/22)	ED Presentation rate per 1,000 people (2021/22)	% of residents with chronic health condition (1 or more)	Premature mortality	Average index	Average index as % of all LGAs	% of Projected population (2025)	Adjusted population need
Inner city	Melbourne–*part a*	0.7	0.7	0.6	1.1	0.8	0.08	11.0%	10.5%
	Maribyrnong	1.0	0.9	0.9	1.5	1.1	0.11	6.7%	7.3%
Suburban	Brimbank	1.2	0.8	0.9	1.4	1.1	0.1	14.4%	13.8%
	Hobsons Bay	1.1	1.0	1.0	1.3	1.1	0.11	7.0%	7.6%
	Moonee Valley	1.1	0.7	1.0	1.0	1.0	0.1	8.9%	9.0%
	Merri-bek	1.1	0.9	1.0	1.3	1.1	0.11	13.1%	12.7%
Growth area	Hume–*part a*	1.3	0.9	1.2	1.3	1.2	0.12	3.9%	5.1%
	Melton	0.9	0.7	0.8	1.3	1.0	0.1	12.6%	12.1%
	Wyndham	0.8	0.7	0.7	1.3	0.9	0.09	20.9%	19.1%
Peri-urban	Moorabool–*part a*	1.1	0.5	1.1	1.3	1.0	0.1	1.5%	2.8%

Table note: Quantified need based on access to health conditions and consequences is shown with in table 13 with the highest level of need displayed in dark pink. After the projected population is adjusted for health conditions, level of need is quantified with the three LGAs with highest quantified need highlighted in blue (Brimbank, 13.8%, Merri-bek (12.7%) and Wyndham (19.1%).

2.7 Quantified population health need

This section brings together the five metrics to provide a view of overall need across the region. A summary of the identified priority issues and areas of need is also detailed.

The SDH metrics are:

Metric 1. Projected population (base need)
Metric 2. Socio-demographic factors
Metric 3. Risk factors
Metric 4. Access and geographic environment
Metric 5. Health conditions and consequences.

Based purely on per capita need, Wyndham, Brimbank, and Merri-bek have the highest level of need, whereas Wyndham, Brimbank, and Melton are the highest areas of need when adjusted for the SDH.

Population trends are quite closely associated with disadvantage; however the equity loadings do change as a function of the SDH. So **compared to solely per capita need allocation, Maribyrnong, Hobsons Bay, Hume part a, and Moorabool have a higher need allocation when adjusted for SDH**.

Table 14. Quantified population health need based on the social determinants of health.

Region	LGA	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Change	Adjusted need
Inner city	Melbourne–*part a*	11.0%	0.10	0.11	0.07	0.08	-10.6%	9.8%
	Maribyrnong	6.7%	0.10	0.09	0.08	0.11	25.6%	8.4%
Suburban	Brimbank	14.4%	0.19	0.10	0.09	0.10	-8.7%	13.1%
	Hobsons Bay	7.0%	0.10	0.09	0.11	0.11	28.0%	9.0%
	Moonee Valley	8.9%	0.04	0.09	0.10	0.10	-5.2%	8.4%
	Merri-bek	13.1%	0.08	0.10	0.10	0.11	-16.2%	11.0%
Growth area	Hume–*part a*	3.9%	0.10	0.11	0.11	0.12	108.2%	8.1%
	Melton	12.6%	0.11	0.10	0.13	0.10	-8.2%	11.6%
	Wyndham	20.9%	0.09	0.10	0.10	0.09	-32.6%	14.1%
Peri-urban	Moorabool–*part a*	1.5%	0.10	0.10	0.10	0.10	340.0%	6.4%

Table note: Blue indicates the need based only on projected population; pink highlights the top LGAs by need by metric; yellow denotes the LGAs that had the highest change in need, and purple denotes need adjusted for the SDH.

The next section outlines the key findings that emerged summarised by, geographical locations, population groups and health conditions.

Health needs by geographical location

Wyndham	**Driver of need: Population**. • Highest per capita need (based on population proportion across the region). • Highest need when adjusted for SDH. • High rate of infants born with low birthweight. • Low utilisation of Medicare subsidised services for specialists.
Brimbank	**Driver of need: Population and disadvantage**. • Second highest per capita need. • Second highest need when adjusted for SDH. • Greatest socio-economic disadvantage and area rated below average on the liveability index. • Low or very low physical activity compared to the average. • Highest for children developmentally vulnerable or at-risk in one or more domains (AEDC). • Highest rates of vaccine preventable PPHs
Melton	**Driver of need: Population, disadvantage and access**. • Fourth highest per capita need. • Third highest when adjusted for SDH. • Greatest socio-economic disadvantage and rated lowest on the liveability index. • Low bowel cancer screening rates when compared to average. • Highest rates of adults living with obesity. • Highest rates of family violence. • Low per capita GP and nurse workforce.
Hume – part a	**Driver of need: Social determinants of health**. • Second lowest per capita need given only part of the LGA is in the WM HSP region. • 112 % increase in need when adjusted for SDH. • High on most indicators (particularly children developmentally vulnerable or at-risk and per capita GP and nurse workforce). • Highest rates of chronic disease. • High rates of inpatient hospital admissions and ED presentations.
Other LGAs	• **Melbourne–*part a*** shows lower cancer screening rates and low rates of Medicare subsidised service utilisation. • **Moorabool–*part a*** shows a 324 % increase in need when adjusted for SDH, due to consistently high rates across all the SDH indicators. • **Hobson Bay** shows a 27 % increase in need when adjusted for SDH due to high rates of PPHs and high rates of avoidable ED presentations. • All LGAs have a high premature mortality compared the average, except Moonee Valley.

Health needs by population group

Children	• In 2021/22, ED presentations were one of the highest among children (0- 9). • Young children aged 0 – 9 account for the largest number of ED presentations. In 2020/21, more than half of the avoidable ED presentations were among young people (0- 29), particularly children aged 0-9 (29%). • There are high numbers of PPHs among young people (0- 19). • Vaccine-preventable PPHs more likely among younger (0- 9). • Male children (0- 9) more likely to be hospitalised than females of the same age. • Hospitalisation rate among children 0-9 is more than double that of young people aged 10-19 years, and greater than those aged 20- 29.
Older people	• 46% of cancer diagnoses were among people aged 65 or older (36% were aged 45- 65). • In 2021/22, ED presentations were one of the highest among people aged 70+. • There are higher numbers of PPHs among older people (60+). • Vaccine-preventable PPHs more likely among older people (60+) • Male older people (60+ years) more likely to be hospitalised than females of the same age. • Hospital admission rate for people aged 70+ years is significantly greater than 1 admission person per year.
Women	• Females 30– 39 account for the greatest number of ED presentations, although number and rates of avoidable ED presentations are comparable between females and males. • High level of hospitalisation among females 20-39 most likely due to reproductive and maternal services. • 67% of cancer diagnoses recorded by GPs were in women. • Females had more GP diagnoses in mental health, pain, osteoporosis, cancer and dementia, while significantly more male diagnosis were found in cardiovascular and neurodevelopmental conditions. Females had three times more osteoporosis, and nearly two times more mental health GP diagnoses than males. • In the region in 2022, 60 % of the mental health episodes of care were for female clients, which is about twice of the episodes for male clients (Primary Mental Health Care minimum dataset.) NB. These data do not provide an indicator of prevalence). • Rates of arthritis were invariably higher for females than males across LGAs. • Rates of family violence incidents are high across the region.
Aboriginal and Torres Strait Islander people	• From 2019/20 to 2021/22 hospitalisations increased by 2% and ED presentations increased by 31% (the reason for the increase is difficult to interpret, it could be that the numbers have increased or that self-identification and reporting has increased). • Almost half (47%) of PPHs were due to acute conditions (convulsions and epilepsy, dental conditions, urinary tract infections, ear, nose and throat infections and cellulitis). • Dialysis reduced from 35% to 22% of all hospitalisations during the past 3 years.
Prefer to speak a language	• 9.1% of ED presentations (2019/20 to 2021/22) were people who prefer to speak a language other than English (LOTE). • 14.6% of hospitalisations were LOTE speakers.

other than English (LOTE)	• Chronic conditions represent more than half of PPHs for people for prefer to speak a LOTE (congestive cardiac failure, iron deficiency anaemia, diabetes complications, COPD). • Vaccine-preventable PPHs increased significantly for LOTE populations - consistent with the wider population - however they represented a much greater proportion of PPH among people who prefer to speak a LOTE.

Health conditions identified as areas of need

Asthma	• Asthma was the reason for the highest number of PPHs for chronic disease among the 0- 4 and 5– 9-year-old cohorts. • 7 of the 10 LGAs have higher rates of asthma (for males, females or both) than the Victorian average.
Cancer	• 67% of cancer diagnoses recorded by GPs were in women. • 36 % of people diagnosed with cancer were aged 45-65 and approximately 46% were aged over 65 (first recording of diagnosis by GP).
Dental	• Dental conditions and iron deficiency anaemia represent the greatest number of PPHs for acute and chronic conditions respectively. Dental conditions accounted for the majority of PPHs for acute conditions among children aged 5- 9. • Dental conditions were the largest cause of PPHs for acute conditions among people aged 10-14, whereas people aged 15-19 had PPHs for a broader range of conditions.
Mental health	• Mental health and behavioural disorders drive high rates of hospitalisations, particularly with females. Anxiety and depression are higher in females than males across the region. Females almost twice as likely to be first recording of depression by GP. • There were significant increases in mental health episodes of care between 2019 and 2022 (peaking in 2021). • From 2021 to 2022, the mental health episodes of care dropped in both males and females. • In 2022, more than half of the mental health services clients were teenagers and young adults (15- 44 years old). • ED presentations relating to mental health ranked fourth among people aged 10-19, and also affected other age cohorts.
Emergency Department presentations	• 9% increase in ED presentations across WM HSP from 2020/21 to 2021/22. • In 2020/21, more than half of avoidable ED presentations were among young people (0- 29), in particular children aged 0- 9 (29%). • Other forms of heart disease are a driver of ED presentations among people aged 60+. • Circulatory, respiratory digestive and abdomen and general symptoms were key reasons for ED Presentations across all age categories. • In 2020/21, 31% of the total ED presentations were avoidable (as defined by AIHW).

PART B. DEEP DIVE INTO THE DRIVERS OF NEED

Population health quantitative data analysis and community and health service provider consultation

3.1 Overview

This section outlines the key insights derived from Stage 3 – Deep dive into the drivers of need. The first section of Part B (Section 8 - Population health quantitative data), has been informed by analysis of VAED and VEMD datasets presenting the health and wellbeing needs of the four focus cohorts WM HSP region for stage 3. Section 9 – Community and health provider engagement presents the key insights from health service users, health provider consultations and surveys.

The cohorts of interest that were identified in Part A were children (0 - 9), women and females (20 - 39), older adults (65+) and people living with cancer, who present to hospital or ED more often than the general population when their care could have been provided in the community.

Primary objectives

The primary objectives of this in-depth analysis are to understand:

- How well people understand their health needs
- How individuals assess their own health needs
- What are the perceived health needs of the community
- What are the barriers and facilitators to accessing healthcare.

We were particularly interested in understanding the differences between:

- Population cohorts based upon their place of residence and different demographic variables (e.g., age, sex, language spoken at home).
- Health needs identified by consumers and health providers.

Methods

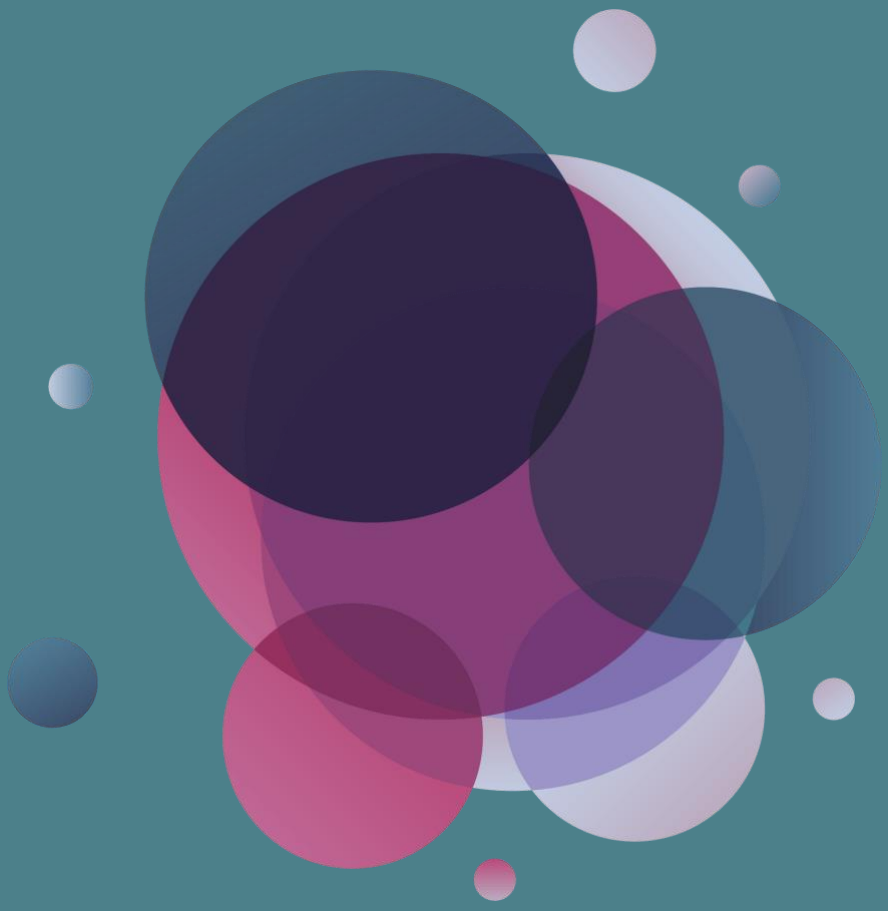
A summary of the methods is provided at the beginning of each subsection:

PART B1. Population health quantitative data analysis

PART B2. Community and health provider consultation.

PART B1. POPULATION HEALTH QUANTITATIVE DATA

Targeted analysis to gain deeper insights into the prevalence and types of potentially preventable hospitalisations (PPHs) and avoidable emergency department (ED) presentations for the focus cohorts.



3.2 Potentially Preventable Hospitalisations

This section presents key findings pertaining to the prevalence and type of potentially preventable hospitalisations (PPHs) from 2020 – 2022, analysed using the Victorian Admitted Episodes Dataset (VAED), across the focus cohorts within the West Metro Health Service Partnership (WM HSP) region.

Approach

The VAED dataset was used to examine the prevalence and type of PPHs. This section presents the number and types of PPH conditions each calendar year from 2020 to 2022 for each focus cohort. (Refer to key definitions).

Considerations for interpretation of the analysis in this section

The analysis in this section draws on more detailed data from VAED than was available at the time of undertaking the analysis in Part A (i.e., metric 4). To undertake the analysis in Part A, an aggregate, prepared file was provided by the Victorian Agency for Health Information (VAHI).

In this analysis, the reported PPH rates count only one PPH diagnosis for a single hospital presentation; the analysis does not include multiple PPH diagnoses during the same hospitalisation. The aggregated data supplied by VAHI and reported in Part A, produces slightly different outcomes although they broadly result in similar findings.

Other considerations when interpreting the analysis in this report include:

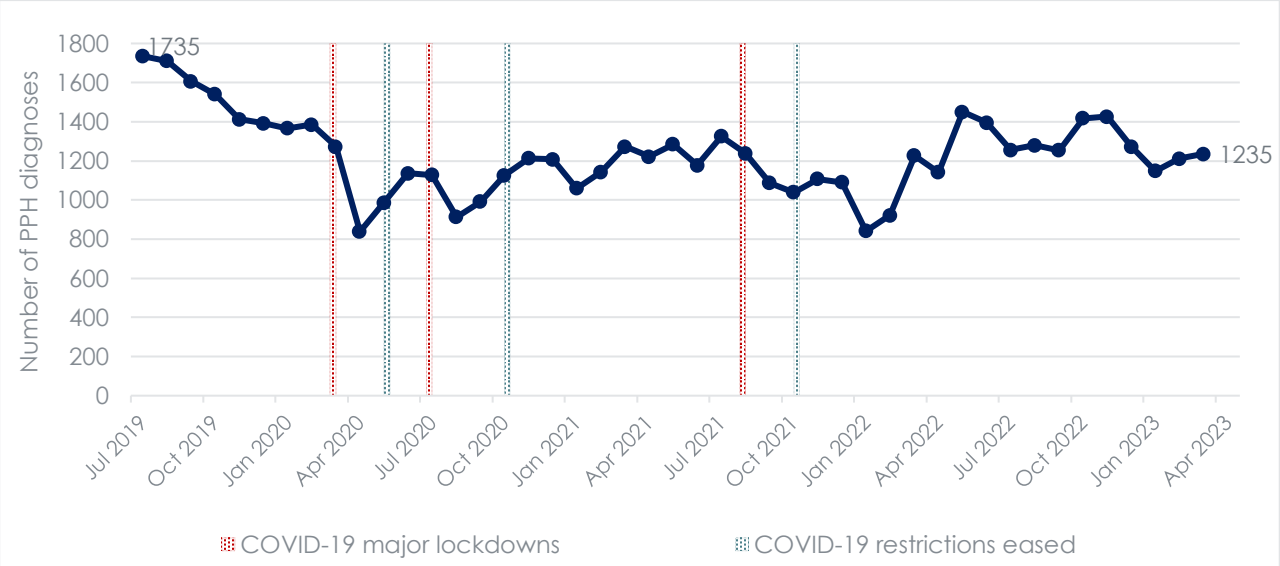
- Some PPH conditions have age restrictions, which could not be applied in children 0- 9 due to the VAED dataset's 5-year age range brackets. As a result, this may have inflated the PPH numbers in the children cohort.
- For conditions including pneumonia and influenza (vaccine-preventable) and pneumonia (not vaccine-preventable), it was not possible to exclude individuals under 2 months of age.[5] Therefore, the PPH numbers for these conditions will be slightly inflated.
- Similarly, for asthma, it was not feasible to exclude children under 4, as children 0 - 3 were included, the PPH numbers for asthma will be slightly overestimated.
- Data is presented by calendar year.
- COVID-19 is not included as a vaccine preventable PPH condition in 2020 in these analyses.

[5] The AIHW METEOR definition for PPH states under 2 months https://meteor.aihw.gov.au/content/740851.

Key insights across all the focus cohorts

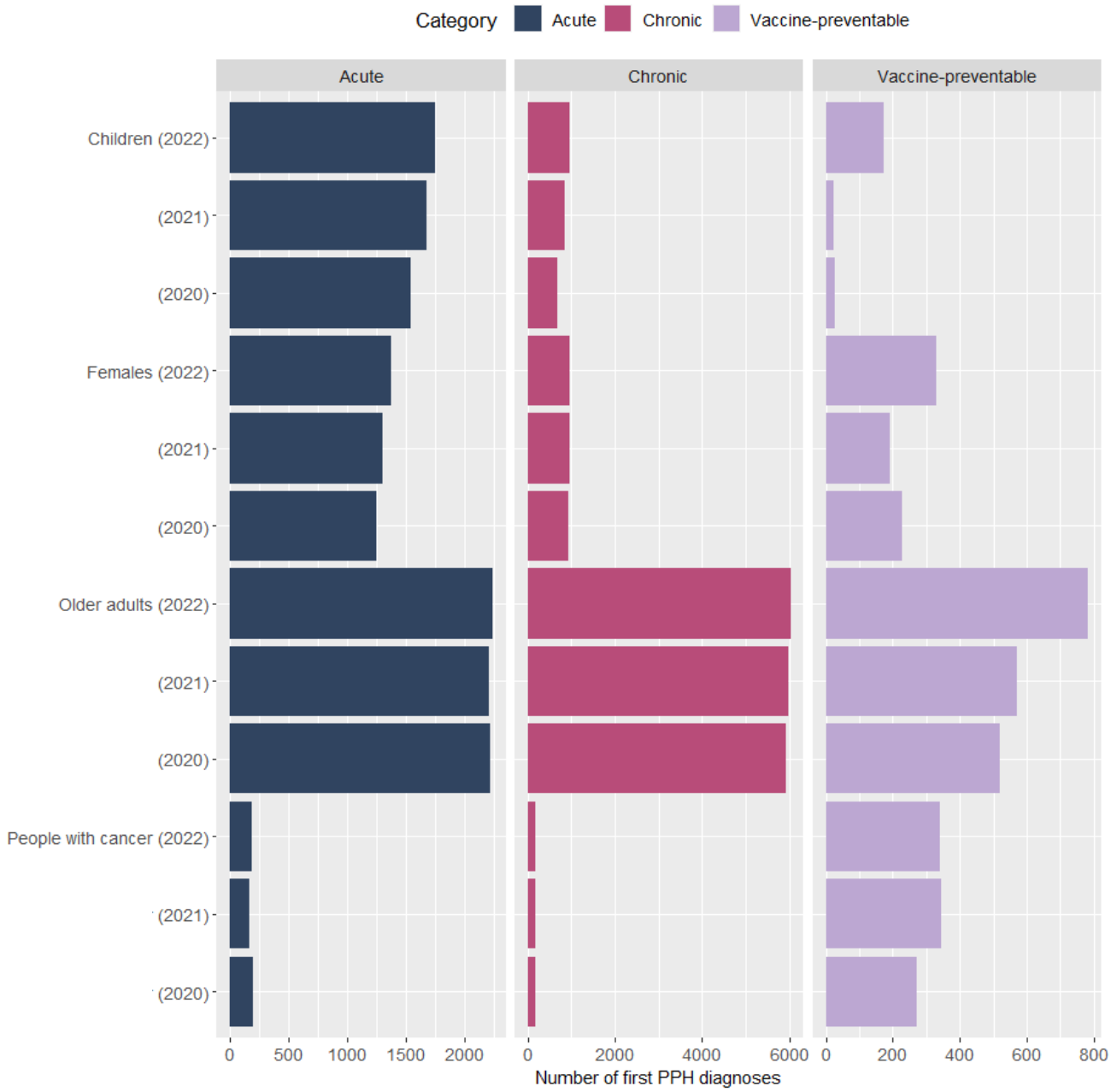
- There has been an increase in the total number of PPHs each year since 2020 for all four focus cohorts, although there are fluctuations in relation to the type of PPHs that have increased or decreased over time.
- Acute conditions account for the majority of PPHs in children and women.
- Among older adults, PPHs are primarily caused by chronic conditions.
- For individuals living with cancer, vaccine-preventable conditions are the top reason for PPHs. (The majority of other vaccine preventable conditions in the cancer cohort were due to chronic viral hepatitis B without delta agent).
- PPHs due to vaccine-preventable conditions (specifically pneumonia and influenza) steeply increased from 2021 to 2022 for children, females, and older adults.

Figure 22. Number of admissions due to 1 or more PPHs from July 2019 - March 2023 overall for the four focus cohorts.



Source: Victorian Admitted Episodes Dataset, VAHI, July 2019 to March 2023

Figure 23. Number of first PPH diagnoses from 2020- 2022 by category and focus cohort.



Source: Victorian Admitted Episodes Dataset, VAHI, 2020 to 2022

Note: the reported PPH rates count only one PPH diagnosis for a single hospital presentation; the analysis does not include multiple PPH diagnoses during the same hospitalisation.

Key insights across individual focus cohorts

Children (0 to 9)

- Overall, PPHs remained stable except for asthma and urinary tract infections.
- Asthma ranks as the leading condition for PPHs in children.
- Asthma, pneumonia and influenza (vaccine-preventable) and ear, nose and throat infections accounted for the biggest increases in PPHs from 2020 to 2022.

- PPHs due to urinary tract infections were the only conditions that decreased year on year between 2020 and 2022.
- PPHs due to dental conditions have however decreased from 2020 to 2023 (393 versus 351).

Women and females (20 to 39)

- Overall, PPH's remained stable, except for pneumonia and influenza, which increased from 32 to 150 in 2022.
- In 2022, the majority of PPHs were due to iron deficiency anaemia (20%), urinary tract infections (18%) and ear, nose and throat infections (14%).
- Asthma was the fourth common reason for PPHs for women in 2022.
- Asthma, and ear, nose and throat infections accounted for the biggest increases in PPHs from 2020 to 2022.
- PPHs due to iron deficiency anaemia increased in 2021 before dropping below pre-COVID levels in 2022.

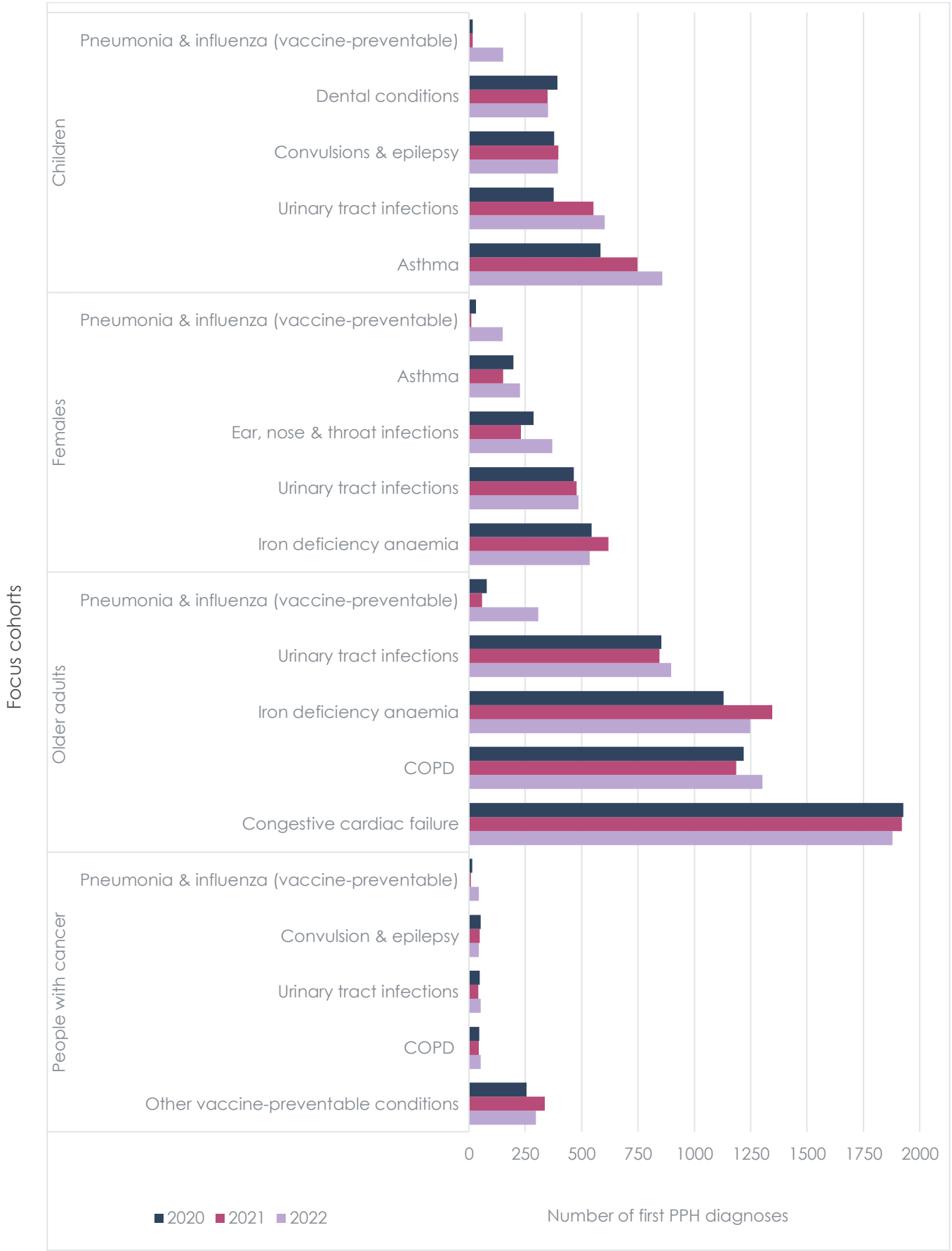
Older adults (65 and over)

- Overall, PPH's remained stable; pneumonia and influenza (vaccine-preventable), COPD, diabetes complications and urinary tract infections accounted for slight increases in PPHs from 2021 to 2022.
- In 2022, the majority of PPHs were due to congestive cardiac failure (21%), COPD (14%), iron deficiency anaemia (14%) and urinary tract infections (10%).
- Congestive heart failure has consistently remained the top reason for PPH from 2020 to 2022.
- Notable increase in PPHs due to pneumonia and influenza from 2021 to 2022.

People living with cancer

- Overall, PPH's remained stable; pneumonia and influenza (vaccine-preventable), gangrene, urinary tract infections, and COPD accounted for slight increases in PPHs from 2021 to 2022.
- Other vaccine-preventable conditions are the top reasons for PPH since 2020.

Figure 24. Number of PPH diagnoses by focus cohort from 2020 – 2022.



Source: Victorian Admitted Episodes Dataset, VAHI, 2020 to 2022

3.3 Avoidable Emergency Department Presentations

This section presents key findings pertaining to avoidable Emergency Department (ED) presentations analysed using the Victorian Emergency Minimum Dataset (VEMD), from 2020 – 2022 across the focus cohorts within the West Metro Health Service Partnership (WM HSP) region.

Approach

The VEMD dataset was used to analyse the prevalence and type of avoidable ED presentations (refer to key definitions).

The disease conditions leading to avoidable ED presentations have been categorised according to the ICD-10 chapters and blocks. The ICD-10 chapters are organised into distinct hierarchical levels, which are subsequently subdivided into blocks and categories. For the scope of this analysis, the focus is specifically on evaluating the data at the chapter and block levels.

Considerations for interpretation of the analysis in this section

The AIHW definition of avoidable ED presentations has been adopted for the purposes of this analysis; however, definitions used by hospitals may differ. Avoidable does not imply inappropriate.

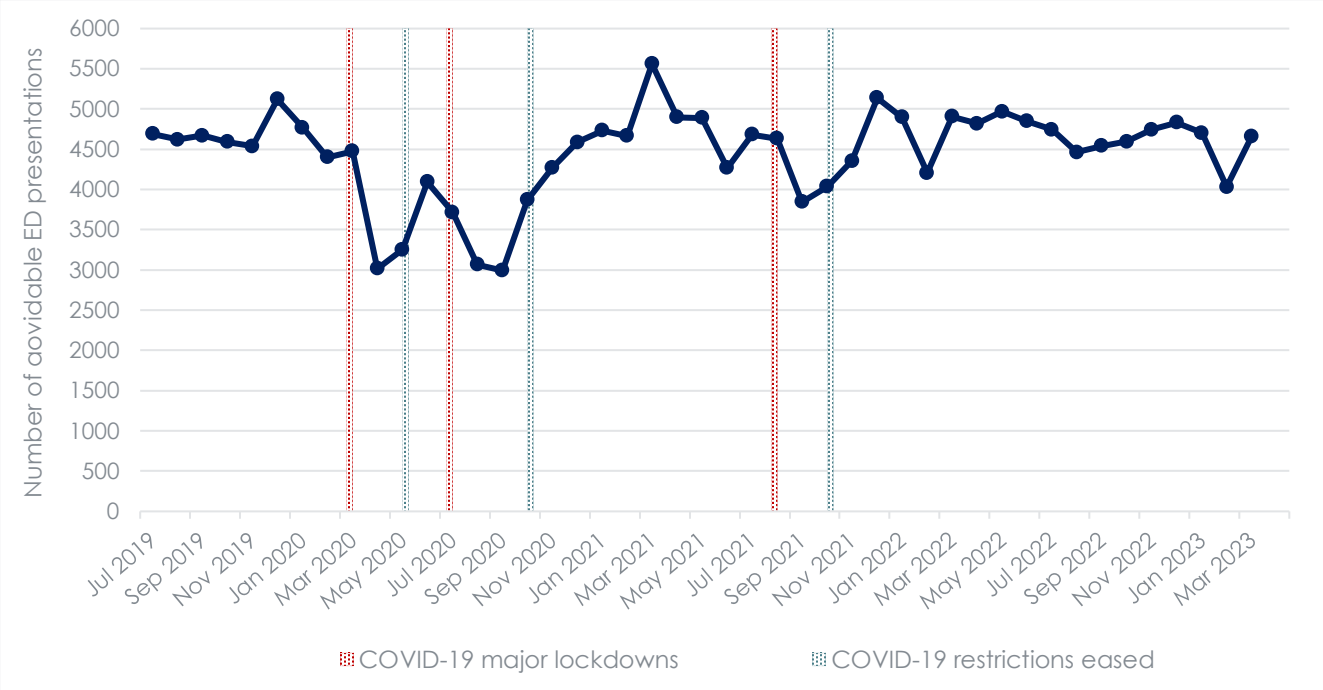
The analysis in this section draws on more detailed data from the VEMD than was available at the time of undertaking the analysis in Part A (i.e., metric 4). To undertake the analysis in Part A, an aggregate, prepared file was provided by VAHI. This means that although the numbers are not exact, they broadly result in similar findings – noting that the focus of this analysis is on the focus cohorts rather than the patterns across the region and LGAs.

Key insights across all the focus cohorts

Avoidable ED presentations were heavily influenced by COVID-19; there were substantial decreases during lockdowns, followed by spikes when restrictions eased (individual patterns of avoidable ED presentations over time are detailed in the supplementary file).

Avoidable ED presentations have increased year on year from 2020 to 2022 (19.8% increase from 2020 to 2021 and 1.6% increase from 2021 to 2022) across all four cohorts combined.

Figure 25. Number of avoidable ED presentations from July 2019 - March 2023 in all four focus cohorts.



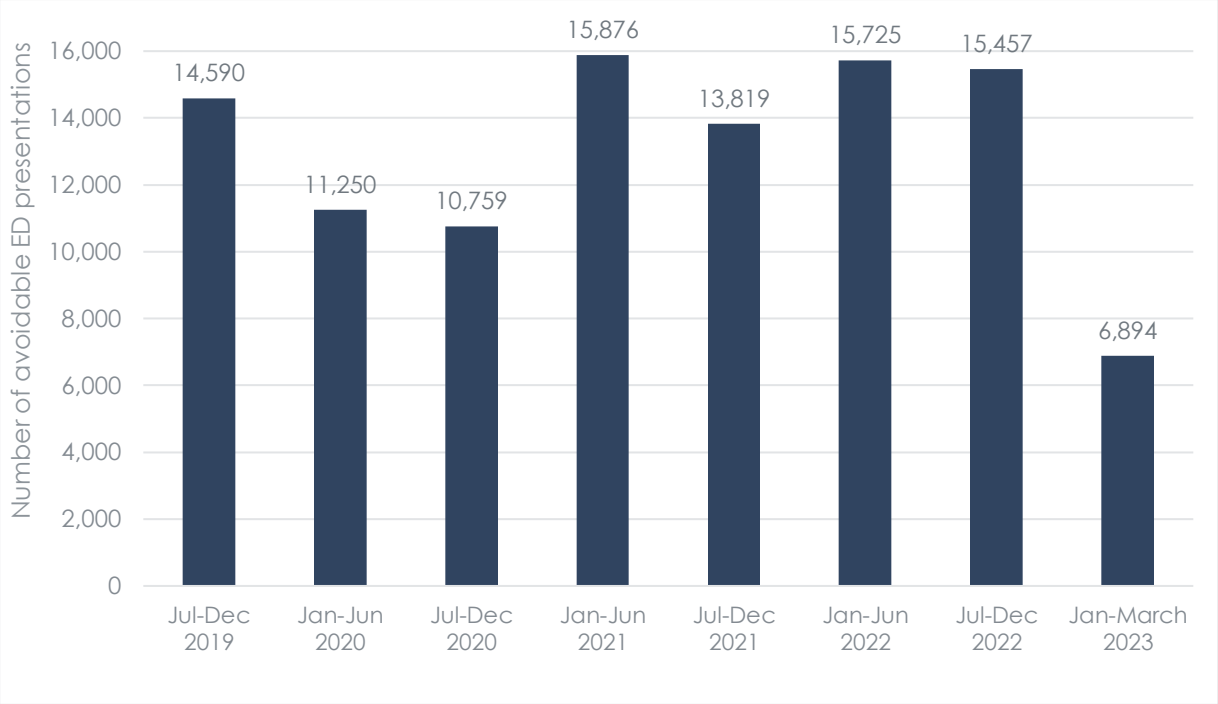
Source: Victorian Admitted Episodes Dataset, VAHI, July 2019 to March 2023

Key insights across individual focus cohorts

Children (0 to 9 years)

Avoidable ED presentations increased substantially between 2020 and 2021 (7,686 presentation increase), compared to 2021 to 2022 (1,487 presentation increase).

Figure 26: Number of avoidable ED presentations from July 2019 - March 2023 in children.



Source: Victorian Emergency Minimum Dataset, VAHI, July 2019 to March 2023

Leading causes of avoidable ED presentations in children

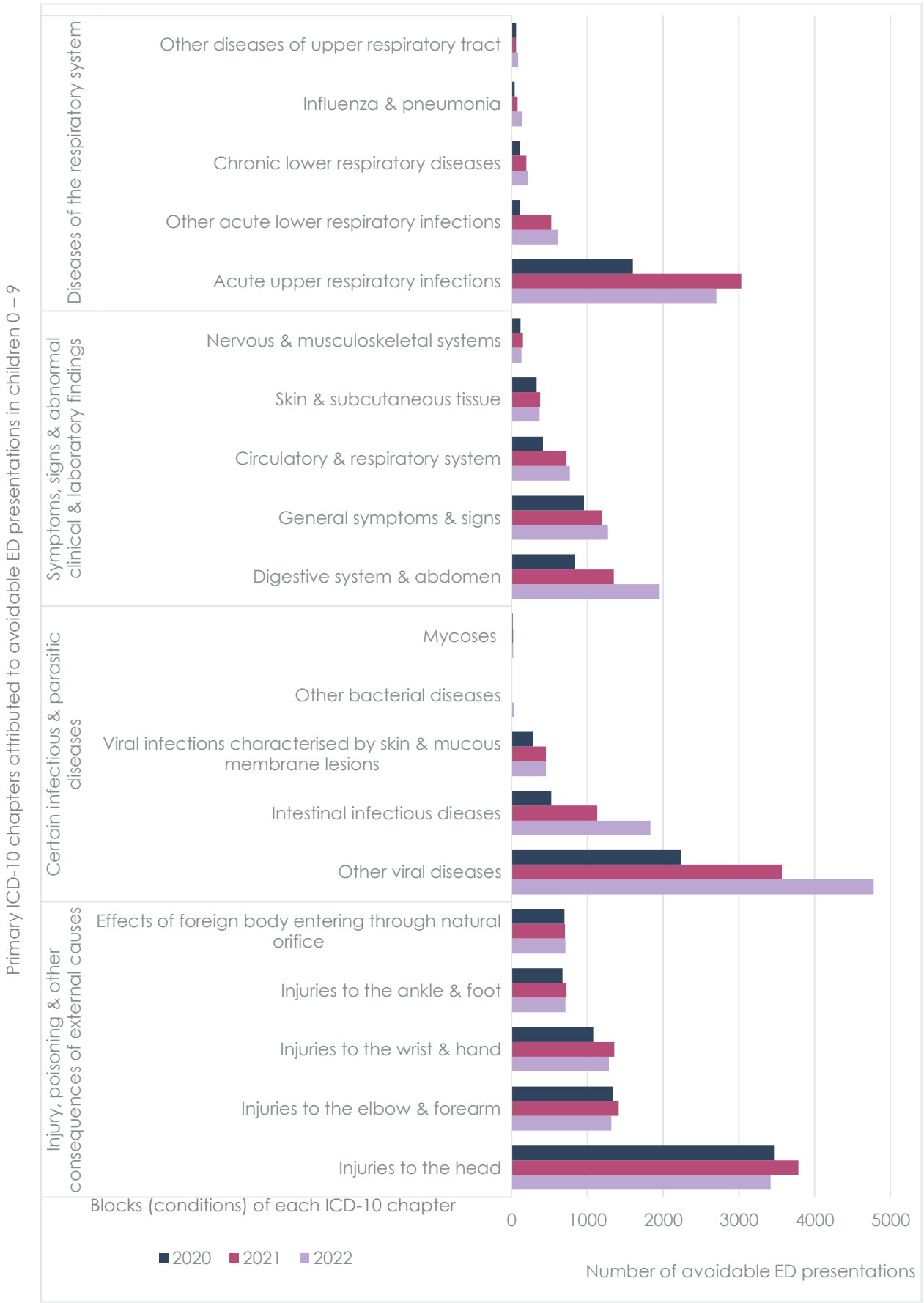
Of the top four ICD-10 chapters identified[6], the top five blocks (or conditions) within chapters are shown in Figure 27.

Injuries to the head were consistently one of the main reasons for avoidable ED presentations in this group. As too were 'other viral diseases,' but these also increased substantially each year from 2020.

Presentations for acute upper respiratory infections were also high, peaking in 2021. Whilst COVID-19 doesn't fall in the acute upper respiratory infection, it could have been a contributing factor, but the full impact is difficult to quantify without measuring if a covid diagnosis was also in the same presentation.

[6] *Refer to supplementary file for full list of ICD-10 chapters.*

Figure 27. Primary ICD-10 chapters and blocks attributed to avoidable ED presentations in children, 2020 - 2022.

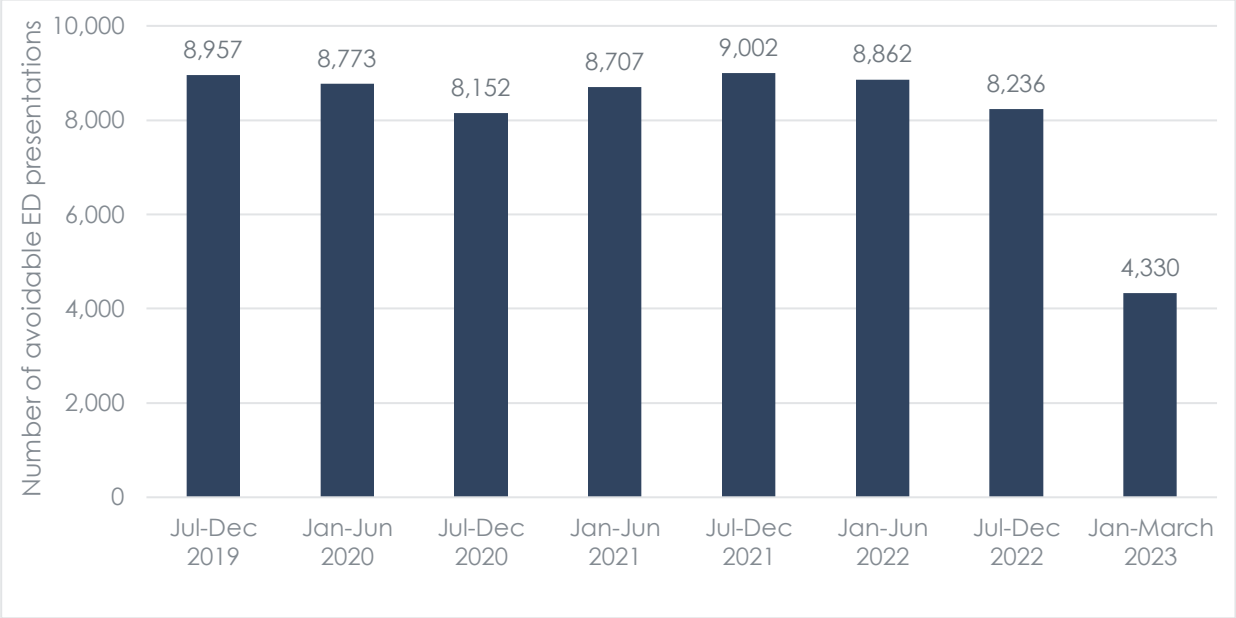


Source: Victorian Emergency Minimum Dataset, VAHI, 2020 to 2022

Women and females (20 to 39)

Avoidable ED presentations were highest in 2021 compared with 2020 and 2022.

Figure 28. Number of avoidable ED presentations from July 2019 - March 2023 by year in females.



Source: Victorian Emergency Minimum Dataset, VAHI, July 2019 - March 2023

Leading causes of avoidable ED presentations in females

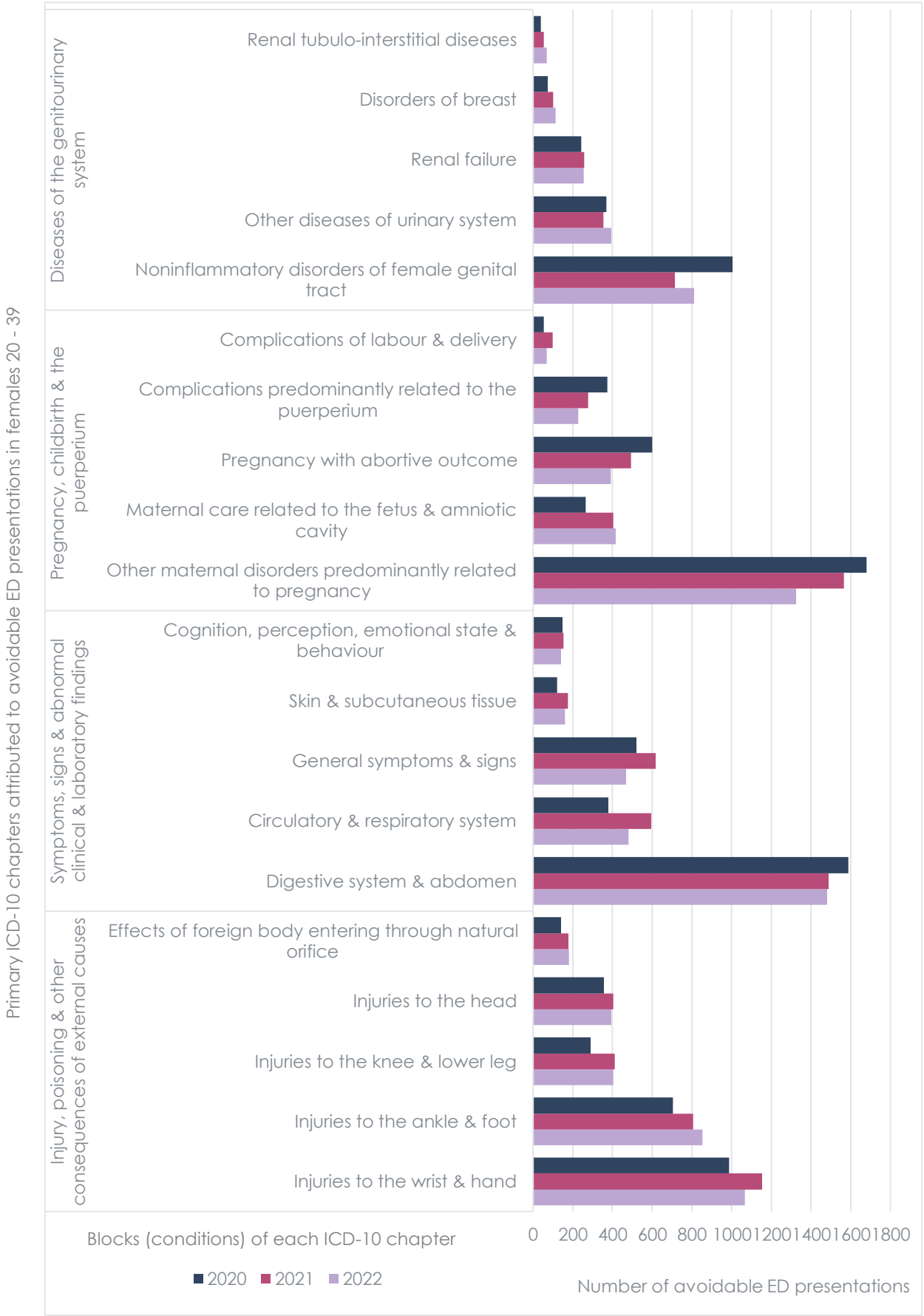
Of the top four ICD-10 chapters identified[7], the top 5 blocks in females within chapters are shown in Figure 29.

Whilst there has been a decrease since 2020, 'signs and symptoms associated with the digestive system and abdomen', as well as 'other maternal disorders' primarily linked to pregnancy, continue to be the leading causes of avoidable ED visits among females.

Since 2020, there has been an increase in all blocks within the 'injury, poisoning, and other consequences of external causes' category. This trend is potentially indicative of an increase in incidents related to family and intimate partner violence.

[7] *Refer to supplementary file for full list of ICD-10 chapters.*

Figure 29. Primary ICD-10 chapters and blocks attributed to avoidable ED presentations in females, 2020 - 2022.

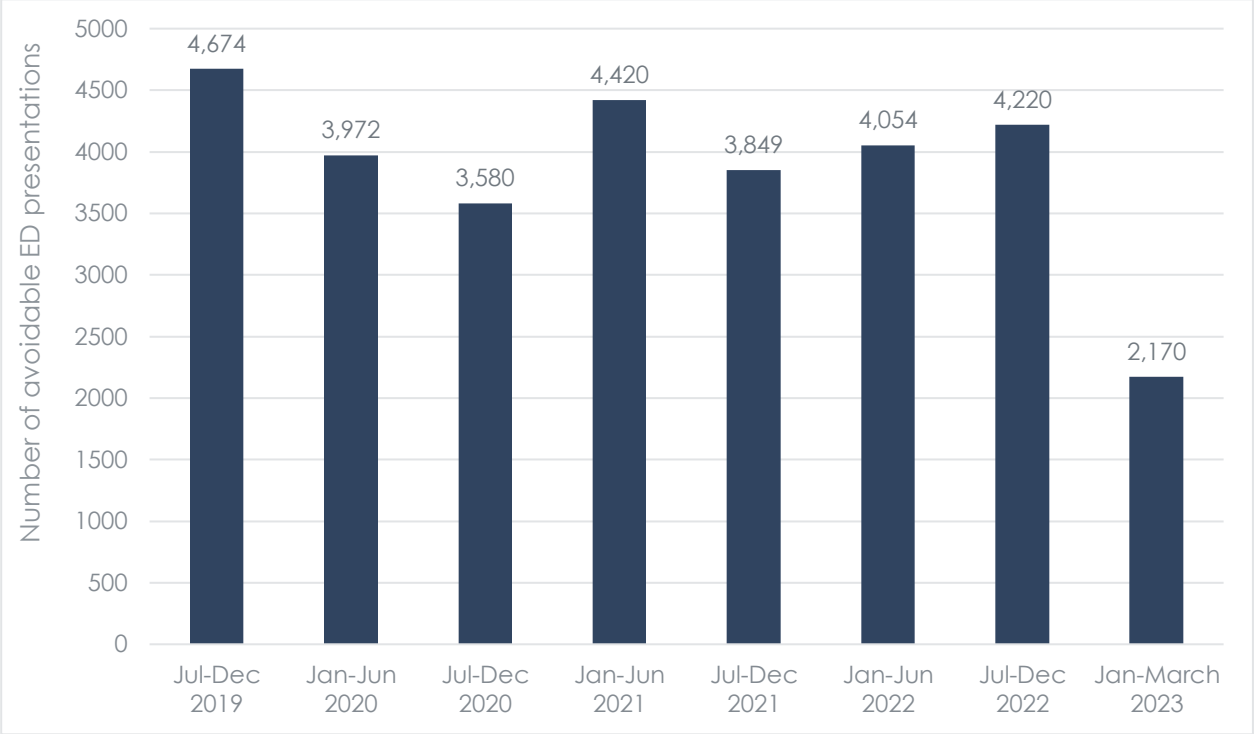


Source: Victorian Emergency Minimum Dataset, VAHI, 2020 - 2022

Older Adults (65 years and over)

Avoidable ED presentations have increased since 2020 and were slightly higher in 2022 compared with 2021.

Figure 30. Number of avoidable ED presentations from July 2019 - March 2023 by year in older adults.



Source: Victorian Emergency Minimum Dataset, VAHI, July 2019 - March 2023

Leading causes of avoidable ED presentations in older adults

Of the top four ICD-10 chapters identified[8], the top 5 blocks in older adults within chapters are shown in

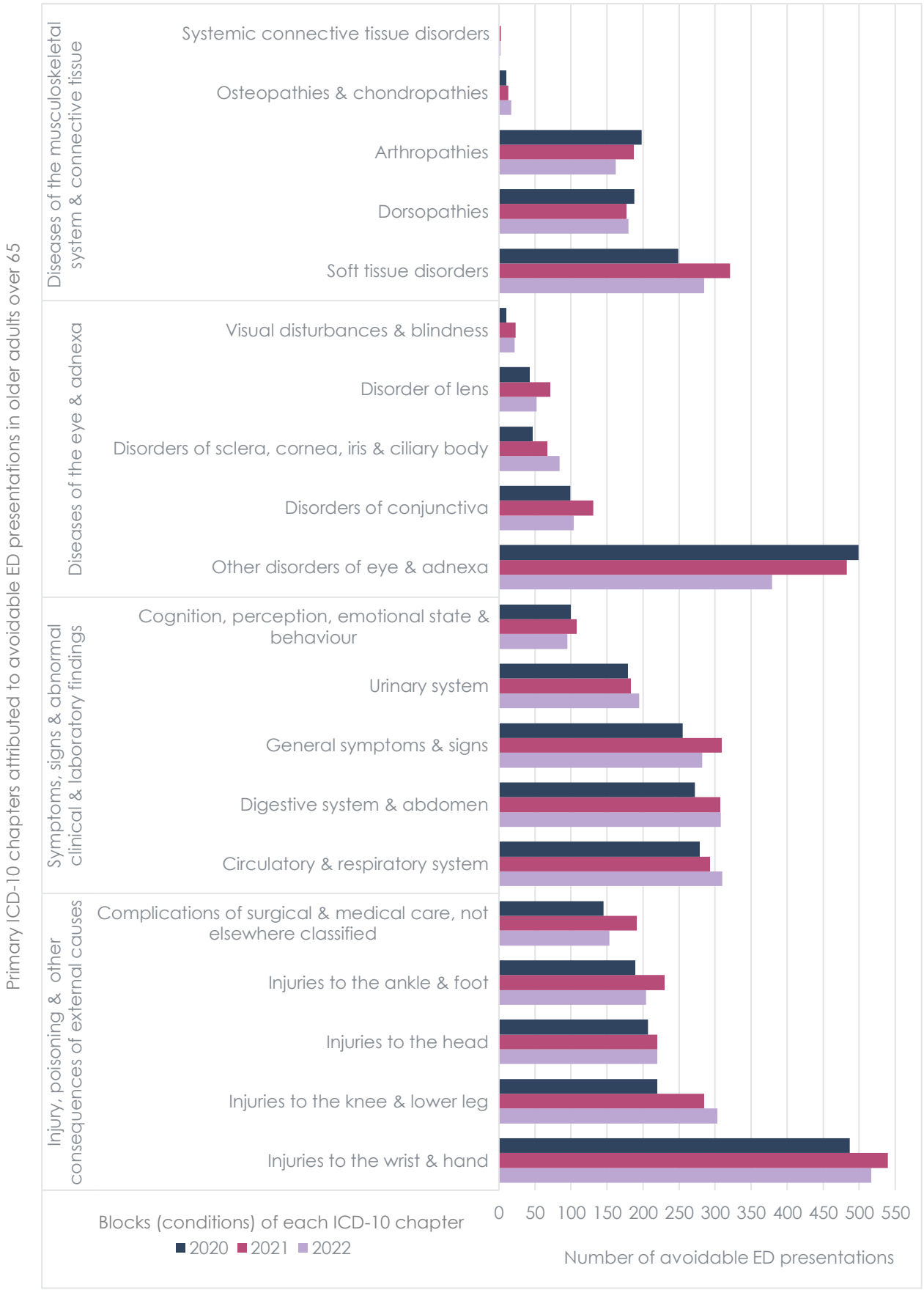
Figure 31. Wrist and hand injuries, as well as disorders of the eye and adnexa, have stood out as the primary causes for avoidable ED visits since 2020. Notably, occurrences related to the latter have decreased over time. Interestingly, blocks within ICD-10 chapters 'diseases of the musculoskeletal system and connective tissue' and 'symptoms and signs and abnormal clinical and lab findings,' appeared to remain relatively stable despite reported barriers to accessible care (including cost of private healthcare, increased waitlists following COVID-19 lockdowns) identified through consultation with older adults and health providers.

People living with cancer

The avoidable ED analysis for people with cancer was not completed due to extremely small numbers. From July 2019 to March 2023, there were a total of 85 avoidable ED presentations in the West Metro region with a cancer diagnosis.

[8] *Refer to supplementary file for full list of ICD-10 chapters.*

Figure 31. Primary ICD-10 chapters and blocks attributed to avoidable ED presentations in older adults, 2020-2022.



Source: Victorian Emergency Minimum Dataset, VAHI, 2020 to 2022

PART B2. COMMUNITY AND HEALTH PROVIDER CONSULTATION

Key findings from consultation with community and health providers to understand the potential drivers and factors that influence Potentially Preventable Hospitalisations and Avoidable Emergency Department presentations for the focus cohorts.

4.1 Overview

This section presents the key findings drawn from community and health provider consultation to understand drivers of need and experience accessing services.

Consultation with community and health providers was conducted through surveys, focus groups and interviews between May to June 2023.

A total of 85 people attended the focus groups or were interviewed and 662 responded via survey. For details, including a sample of consultation and survey questions, refer to Appendix C. Methodology Part B.

Figure 32. Understanding felt, expressed and normative need through community and health provider consultation.

The consultation questions were developed based on the Social Ecological Model (SEM) which is a theory-based framework that describes four nested, hierarchical levels; individual, interpersonal/relationship, service/program and policy/enabling environment. By adopting the SEM, the consultation questions were more targeted, exploring potential drivers and factors that influence hospitalisation or ED presentation, even when community-based care could be more appropriate. See Appendix E. Factors influencing health needs across focus cohorts in the West Metro region mapped against the Social Ecological Model (SEM)for more details.

Considerations for interpretation of the analysis in this section

- Purposeful sampling to target our cohorts of interest resulted in slightly less diversity.
- A relatively small sample size was recruited for the consultations (noting sample size is sufficient for hypothesis forming).
- There were challenges recruiting cancer patients for both the focus group and survey.
- Limited voice of Aboriginal and Torres Strait Islander consumer or health providers.
- The survey was available in English-only.
- Health provider survey respondents were mostly community health providers and may not reflect experiences of health providers in hospital settings.

- Only a small number of survey responses were received for parents/guardians of children (n = 16) and people with cancer (n = 20) noting that these findings may not be statistically significant or representative of the broader population. As such, this report integrates survey findings and qualitative data from the focus groups and interviews to provide insightful analysis.
- Whilst we have used the SEM to organise the content from the consultations, we have not undertaken a formal thematic analysis.

4.2 Key messages from community consultations

A total of 516 community survey respondents and 22 individuals participated in focus group sessions and interviews. The key findings were:

- **Navigating the health system is challenging.** Consumers described difficulty in understanding what services are available and who is eligible. This was a common barrier to receiving timely, affordable, and appropriate care. Finding health advice or services after hours was also difficult.
- **Competing priorities and responsibilities can make it difficult to access care.** Balancing family, work and caregiving responsibilities often make it challenging to find time to access care. This was especially true for economically vulnerable people, those who have limited social connections, and those who are from marginalised groups.
- **Access to local and affordable health services is a barrier.** Access to locally bulk-billed or affordable healthcare was a common challenge, exacerbated by the increased cost of essentials including transport, housing and living or family expenses. Consequently, many participants, (especially in the female and older adult cohorts) reported forgoing or delaying care.
- **Cultural and psychological safety are imperative for engaging marginalised groups and promoting positive experience engaging with health providers.** Consumers emphasised inclusivity, non-judgment, and respectful interactions with service providers throughout consultations to enable people to share their health and social concerns. However, barriers such as discrimination, time constraints, medical terminology, and limited access to interpreters or culturally competent services were all reported to hinder effective communication and positive patient experiences, particularly within CALD, migrant and refugee, people with a disability and LGBTIQIA+ communities. Negative service encounters or stigma contribute to fear, diminished trust, and hesitancy in seeking healthcare.

4.3 Key messages from health provider consultations

146 community health providers responded to our health provider survey, and 63 participated in a focus group or interview.[9] Separate consultations were held with each of the health services within WM HSP.

- **Communication and coordination between general practice, community health services and hospitals are often ad hoc**.
- **Lack of social services** including those provided by the NDIS and aged care was considered as a key driver of chronic and acute health conditions resulting in hospital care by health providers in acute and community care settings.
- **Insufficient access to specialist care in the community results in people needing hospital care.** Access to specialist care and care coordination required for chronic and complex conditions is challenging. Primary and community health care awareness and understanding of existing services, admission criteria, timeliness and how to access those services is limited.
- **Acuity in EDs is increasing and most presentations require hospital care**. Hospital providers reported that access to primary care does not appear to be a significant driver of avoidable ED presentations, particularly in metropolitan hospitals. However, this view seemed to be inconsistent with some views expressed by primary and community health providers and health system users.
- **The way hospitals operate can lead to avoidable ED presentations**. Hospital practices can contribute to avoidable ED presentations. For example, inadequate discharge planning. The absence of direct admission pathways into hospitals means that EDs are often the only way a patient can gain admission. The patients do not necessarily require emergency care but need to attend ED to gain admission.
- **Psychosocial, financial factors and COVID-19 exacerbated health issues**. These are particularly related to financial stressors, housing instability, family and intimate partner violence and reduced social connections. These factors were often linked to poor mental health and psychological distress and were further complicated by cultural diversity and limited health literacy.
- **Marginalised groups face unique and significant challenges accessing care**. Across health provider consultations, it was reported that marginalised groups experience health disparities and challenges accessing and using their services. They cited factors such as language barriers, cultural differences, discrimination, and lack of awareness of their services as main challenges.
- **The health system is overstretched.** All health providers emphasised the need for increased funding to improve health service capacity to meet increasing demand, service delivery costs and increasing complexity of consumer needs.

[9] *The majority of survey respondents were from community-based health services or organisations.*

4.4 Children 0 to 9

"Our journey's been pretty seamless. We've got a really good GP for [daughter]. I guess most of our medical needs have been able to be addressed through that clinic. The only issue has been around sort of getting an appointment, but I think that's probably across the board like he's always booked out, so it's really hard to get in."

- Parent

Key insights from consultations with parents or guardians and health providers

- There was consistency across respondent groups (health providers, GPs and consumers) about the health issues for children that drive PPHs and avoidable ED presentations: An **increase in mental ill-health** was a growing concern, with anxiety at the top. A marked increase in self-harm was also observed. **Dental health** is also a notable contributor to hospital attendance, as demonstrated above in the quantitative data, and reinforced in community service provider focus groups.
- All respondent groups reported that **psychosocial and socioeconomic factors and COVID-19 exacerbated health issues**. These are mainly related to financial stressors, including housing instability, increased family violence, reduced social connections, and complicated by cultural diversity and limited health literacy.
- **Neurodevelopmental issues** were consistently identified across respondent groups; GPs noted the high volume of ADHD and ASD presentations. Health providers observed that this increase was **driven in part by the increased awareness** of families about these issues and that **varying health literacy among parents/ guardians** can drive both unnecessary and late presentations.
- **Developmental delay**, especially speech development and fine and gross motor skills, **are prevalent**, with health providers commenting that these issues tend to "snowball" over time and are **exacerbated by lack of access to specialist services** (e.g., paediatricians, OTs, speech pathologists, psychologists).

> **I had a parent bring their child in the other day because school had told the parent they were not doing well and not eating. The parent was just using their phone the whole time and you could see the clear disconnection between the family itself. - GP**

- **COVID & "post-COVID" influences also negatively affected children's self-regulation in shared environments**, as well as contributing to delays in language and fine and gross motor skills; staffing challenges (i.e., shortages, burnout, mental ill-health, skill level) in daycare, preschools, and primary school have all played a role in negatively impacting children's wellbeing.
- According to community service provider consultations, the **lack of availability of paediatricians, the cost, and the excessive waitlist times** can be a driver of why children end up in the hospital or the emergency department. Excessive wait times and not being able to get an appointment was also the main limitation of care reported by half of the survey respondents. This finding contrasted with the health service consultations, who identified a challenge with lack of paediatric expertise in the community (e.g. GPs with paediatric training or experience), rather than paediatricians per se.
- A **lack of access to social services** was perceived by healthcare providers as another driver of ED presentations. **Behaviours of concern in children was identified as a common driver of complex ED presentations**. There was unanimity among

respondent groups (and other focus groups) that access to NDIS and difficulty navigating the health care system more broadly was a persistent challenge.

- There is a **lack of trust in community service's ability to provide specialist expertise in paediatrics** which can result in families presenting to ED to access that expertise (noted by health services and community service providers but not specifically by families).
- ED is free. **Cost of a health care is a significant barrier that can influence the decision to seek or delay care**.
- Healthcare providers noted that first-time parents/guardians and parents who had a reduced hospital length of stay post-birth were more likely to present to the ED for paediatric assessment.

> **"Sometimes I feel a bit helpless as a GP because you feel stuck on where to assist, when really what you're looking for is that extra level of care from the specialist."- GP**

- Health providers observed that **unnecessary GP referrals to hospitals** could be attributed to avoidable ED presentations. The reasons for GPs referring children to hospitals may be due to lack of time, resources, and experience. One health service estimated that approximately 30% of avoidable ED presentations were referred by GPs.
- Changes in the relationship between GPs and families over time was also identified as a potential driver of potentially avoidable referrals to hospitals. Families don't have long-term relationships with their GPs as they might have done in the past. Longer-term relationships enable a more detailed understanding of the families' medical history, building confidence in the GP.
- At the service level, engagement between community health and hospitals is ad hoc and lacks coordination. Equally, differences in funding models and approaches between geographical regions complicate the context.

Summary of parent/guardian of children survey responses (n= 17)

A limited number of survey responses from parents/guardians were collected (n = 17). Although these responses may not achieve statistical representativeness for the entire population, it is noteworthy that the insights derived from these responses align consistently with the outcomes of the consultation process.

4.5 Women and females 20 to 39

"Even if they overcome all those blockers- the financial costs, distance and childcare responsibilities stop them getting to those services in a timely manner which is when they end up in ED - when it's unmanageable or, they're like 'I need to manage this today and this is my opportunity because the friend up two flights of stairs away will mind the kids so I can go."

– Community Health Provider

Key insights from consultations with females and health providers

- Key insights from discussions with consumers and community health providers were closely aligned and centered firmly around **gender inequality** as a "deeply entrenched issue and a systemic root cause of social and economic disadvantage". Community health services described the implications which influence all levels of the SEM, including commissioner decision-making, policies and access to women's health services, **particularly sexual and reproductive health, and medical termination clinics.**
- **Psychosocial and financial factors** including caretaker responsibilities, and homelessness, were described across all respondent groups as compounding issues **preventing timely, accessible care, necessitating flexible and affordable (or free) community-based services.**
- Individuals who participated in the focus groups expressed frustration and exhaustion trying to access the right health services. They felt **burdened with "navigating the system" without support** and described uncertainty about "knowing what you're eligible for." Community health providers agreed, highlighting additional challenges for women from marginalised groups, including women with a disability needing to access NDIS. They acknowledged the lack of caseworker capacity to provide equitable access in an "overstretched system." Similarly, community health providers **described barriers to appropriate and timely referral for continuous care**, citing a limited knowledge of locally available options contributing to "women getting lost in the system".

> **The whole messy reality of family violence, particularly in the context of refugee and migrant women, but more broadly as well, would definitely be contributing to women presenting to hospital within that age group. – Community health service provider**

- Marginalised women, including those with a disability, culturally diverse backgrounds, migrant and refugee women, are particularly vulnerable to experiencing **family violence and homelessness**.
- Consultations with community health services highlighted that people from these backgrounds had more extended stays in refuge and crisis centers compared with women who were not from CALD backgrounds. Similarly, health providers identified many patients presenting to ED with very **complex social issues and circumstances.** These patients were more likely to be admitted and had an increased likelihood of **longer stays**.
- The survey and most consultations (i.e., GPs, community health providers and consumers) identified mental ill-health as a predominant health concern and reason for women accessing health services.

- Health services identified **pelvic pain** as a very common condition associated with repeated ED presentations and attributed it to limited diagnosis, symptom management, care planning and community support for pelvic pain.

> **I approached a GP in 2021 regarding mental health care and what option I had and was told 'wait until the pandemic is over as right now psychologists are already overloaded.'" – Female (20s)**

- Health services also noted hospital operations potentially contribute to avoidable ED presentations. For example, labouring women are not able to be directly admitted to the birthing suite and need to present at ED. Lack of community services, including after-hours, for women with suspected pregnancy loss was another driver of presentations to ED. Health services consulted recognised the importance of these women attending ED in the absence of any community based services, but reflected that there may be a better models of care for these patients.
- In the community focus group, women expressed feeling **unheard and unsafe when discussing their health needs**, especially around mental health.

> **Based on workflow, pregnant and labouring women currently have no other way to admit to the birth suite other than ED. They may be classed as avoidable as they aren't unwell. - Health Provider**

- **Access to culturally aware or culturally diverse providers** was perceived to be "**very rare**." A key message from one female participant was to emphasise to health providers that "*cultural sensitivity is so important to feel supported, for* health providers *to understand your circumstances and really understand the psychological complexity of race and culture*."

Summary of women and females (20 to 39) survey responses (n = 115)

- **Nearly two-thirds of females (n= 73) reported having a chronic condition that impacts their daily life.** Mental health conditions, back pain and oral/dental issues were the primary health concerns and conditions, which was consistent with health concerns raised in community and health provider consultations.
- **28% (n= 32) reported that they had been to the ED for an urgent matter.** However, 25% (n=8) respondents reported going to the ED for reasons unrelated to an emergency (cost, GP unavailable, did not know where to go).
- Of those who were 'extremely or very concerned about their physical and mental health', only approximately 50% received care always or often for these.
- Of those who were 'extremely or very concerned about their oral and dental health,' 33% rarely received care. This is consistent with findings from consultations.
- The **main perceived barriers** to accessing services was **cost, difficulties securing an appointment** or **wait time**. This is consistent with findings from consultations

4.6 Older adults 65 +

"All the ones (GPs) who are local, you need to pay at least $20 out of pocket which is not very good when you're on the disability pension."

– Older Adult (Female)

Key insights from consultations with older adults and health providers

- Older individuals described **key barriers to timely healthcare** as **cost** (primarily allied health and specialist care) and the **wait time to see a health provider** (for hospital and primary care). The pension/ disability pension was strongly perceived as insufficient to cover their healthcare needs. GPs similarly raised the issue of increased patient rebates (EPC referrals) from 5 to 10 subsidised sessions.
- Low **health literacy** and **not having a health professional to contact after hours** were other main reasons older adults chose to go to the ED, where they described a positive experience receiving health advice, treatment and "being well taken care of." Health services observed that older adults' health literacy is sometimes quite good, and they often have links to general medical management through specialists or primary carers.
- GPs described social expectations for general practice to address 'all problems', citing a **need for increased recognition of the complexity of patients being discharged from hospitals**.

> **In a low socioeconomic setting, you're unlikely to seek out or pay for additional services and with a cap of five subsidised sessions for allied health for this growing comorbid population that is nowhere near enough for the number of services they need. - GP**

GPs further described that **increased workforce capability and capacity are needed** to support people to stay out of the hospital.

- Participating GPs advised that **short consultations** prohibit holistic care and **lack of access to adequately trained nurses and aged care staff** were significant concerns and led to avoidable ED presentations.
- Health providers and GPs described how better **access to diagnostic services** in the community could help avoid ED presentations; however, GPs noted that out-of-pocket costs for diagnostics and medicines were a key barrier for older adults leading to delays in primary care and community management.
- GPs and health providers described how **a lack of social support can result in acute health conditions and increase the risk of ED presentations**, even if they have good medical care. Health providers highlighted that ED presentations are usually unavoidable.

> **"I work in a suburb that overlays the boundaries of different health services - there's such a big variety and an alphabet soup of companies and providers, and sometimes trying to figure out what services are actually available. I have no idea myself sometimes and I have to spend hours ringing around to figure out what services are available." – GP**

- Health providers identified a **lack of direct referral pathways and inability to directly admit patients** as drivers of delayed health care and avoidable ED presentations. Health providers observed that the most direct pathway for community clinicians to get a patient admitted to hospital is through an ED presentation, despite the patient not requiring urgent care. If better access points existed, then these ED presentations could be avoided.

Summary of older adult (65 years and over) survey responses (n = 99)

- **74% reported experiencing a chronic condition that impacted their daily life.** Arthritis (47%), back pain (29%) and diabetes (27%) were the most common chronic conditions reported.
- **21% (n=19) reported that had sought care at the ED**; only a minority who had been to ED 7% (n= 7) reported seeking care at the ED for non-urgent reasons.
- **Physical health and chronic disease management were greatest health concerns for older adults.** Of those who were 'extremely' or 'very concerned' about their:
    - physical health, nearly 50% inconsistently receive care.
    - their chronic condition, nearly 40% inconsistently receive care.
    - overall health and wellbeing, approximately half reported 'always' or 'often' received care for their physical and mental health.
    - **oral/dental health**, **33% report rarely receiving care**- indicative of the long public wait lists for dental care raised by health providers and consumers who we consulted.
- The main perceived barriers concerning service accessibility was wait time (79%) with 16% reporting delaying care in the past 12 months.

4.7 People living with cancer

"These patients are having symptoms not just due to their diagnosis, but side-effects to the treatment they receive. There are a lot of unknowns with a cancer diagnosis, and you can't always tell the severity of illness through symptoms only, and there can be a lot of underlying factors requiring assessment." - HCP Peter Mac

Key insights from consultations with people with cancer and health providers[10]

- **Delay in seeking care** within the past 12 months was the highest for people living with cancer compared to other focus groups, affecting the majority (70%) of people surveyed living with cancer. **Childcare duties followed by concerns about COVID-19 were the primary reasons for delaying care** and were significantly higher compared to all other groups.
- In-depth consultation with one patient with advanced prostate cancer highlighted the potential community **misconception about palliative care exclusively for end-of-life care.** Additionally, a gap in 'cancer' survivorship information and "not identifying as a cancer survivor" was another reason for lower health literacy and delay in care due to undertaking own research.

> **"As a young carer I find it challenging to be taken seriously by medical professionals. You're treated like a chaperone. I also find understanding the jargon challenging." – Carer for a cancer patient**

- A **lack of access to interpreters** was another identified **barrier to communication between health providers and patients.**
- Consultation with health providers providing care for oncology patients identified the complexity of cancer and additional challenges accessing health advice and care – especially **out-of-business hours and weekends when medical networks were often unavailable**.

  Consumers identified similar challenges, observing significant gaps in health services between the west metro and the inner eastern suburbs.
- Health providers also identified that **some GPs lacked the expertise, support, time and incentive required to understand cancer diagnosis and provide specialised care** and may refer patients to ED for symptoms or results that could have been managed through primary care.
- **Presentations to ED for people living with cancer are generally not inappropriate.** The severity of illness was described by health providers as being hard to understand through symptoms alone, requiring specialist assessment and diagnostics.

Summary of people living with cancer survey responses

Responses were gathered from a small group of people with cancer (n = 20). Although these responses may not achieve statistical representativeness for the entire population, it is noteworthy that the insights derived from these responses are consistent with the insights from the consultation process.

[10] As noted in the 'considerations for data interpretation' section of this report, only one cancer patient (male with advanced stage cancer) was interviewed, in addition to three carers, all from a CALD background. As such, qualitative findings are not considered to reflect the lived experiences of the population or West Metro community.

4.8 Opportunities and enablers to improve access to care

During the consultation process, community members and health providers were asked to share what they considered as opportunities to improve access to health services and reduce PPHs and avoidable ED presentations.

The opportunities and enablers identified have been summarised according to each level of the SEM below. See Appendix F. Detailed opportunities and enablers for more information.

Key opportunities and enablers

- Accessible (centralised) resources, as well as programs and services (online and in-person and after hours) to help empower community and individuals to make evidence informed decisions about their health through education and increased awareness. Dual perceived benefit of facilitating local and regional services and referral was highly regarded as an opportunity to improve timely, appropriate care in the community.
- Opportunities to increase capability and capacity of the existing healthcare workforce including building cultural competency, better leveraging nurses and allied health and training/upskilling to deliver safe, accessible, and timely care.
- To not "lose sight of addressing the social determinants of health" and fund services and programs or implement policies that provide equitable access to healthcare especially for marginalised groups and people and for low-income individuals/families.
- Opportunities for cross-sector collaboration and knowledge sharing to support improved communication, coordination of care and strategic alignment and allocation of resources.
- GP and community service provider consultations identified the need for multi-disciplinary teams in general practice through better utilisation of pharmacists, registered nurses, physiotherapists, podiatrists, and psychologists to support the provision of person-centred care.

Individual level

Opportunities for improving access to care in the community centered around interventions that focused on improving individual and community knowledge, skills, and attitudes about health. Key areas included education and health literacy programs (including school-based programs), building trust with communities (particularly marginalised and culturally diverse groups) and addressing social determinants of health.

While the individual level is considered essential to support people make informed decisions about their health, respondent groups we consulted emphasised that multi-level

interventions and approaches are needed to address complex factors contributing to PPH and AED.

Interpersonal level

Initiatives to increase community engagement to change dialogue around family violence and foster more inclusive societies for gender and culturally diverse communities was a key theme. Support programs for carers and family-centered programs were also identified and considered significant in creating supportive, connected, and inclusive societies to maintain and improve health.

Program and Service level

- Key recommendations and suggestions frequently raised by GPs, community providers and health providers included workforce enhancement, engaging multi-disciplinary teams in primary care, advancing community nurse training, and expanding the bicultural workforce for cultural safety.

A lack of service mapping and knowledge of local providers was a clear barrier to effective service coordination and referral with various suggestions for improving coordinated transition of care and communication between services.

Policy and Environment level

Addressing social determinants of health necessitates action at all levels of the SEM framework. Nevertheless, the policy and environment level were perceived as the most influential in addressing the root cause of health issues and conditions including poverty, inequality, and discrimination.

Opportunities identified at this level primarily centered around bolstered government funding and augmented investment in health across acute, community and primary care settings, including social/ outreach programs that support healthy living and education and secure/ affordable housing. Funding at the program/service level was considered crucial for health providers to continue meeting the increasing complexity and demand for acute, primary and community health services.

Driving change through the implementation of health-enabling laws and policies that promote health equity for focus cohorts was the next most common theme. Addressing migration policies, and access and eligibility for rebates including MBS/PBS and enhanced primary care (EPC) plans.

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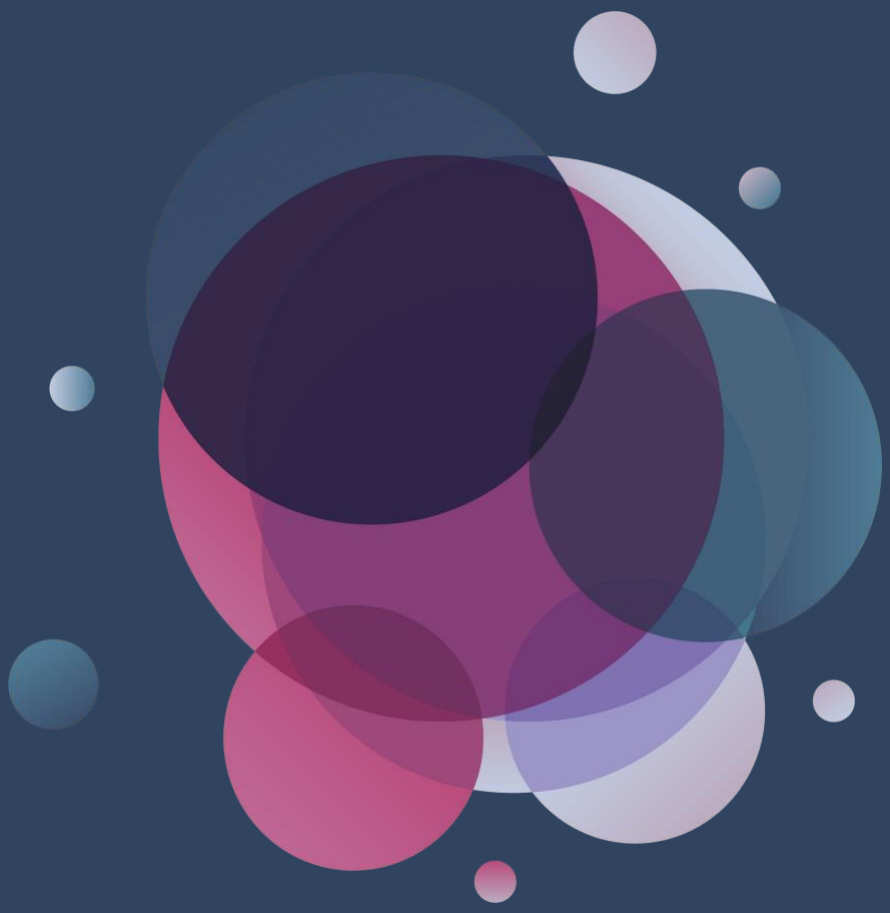

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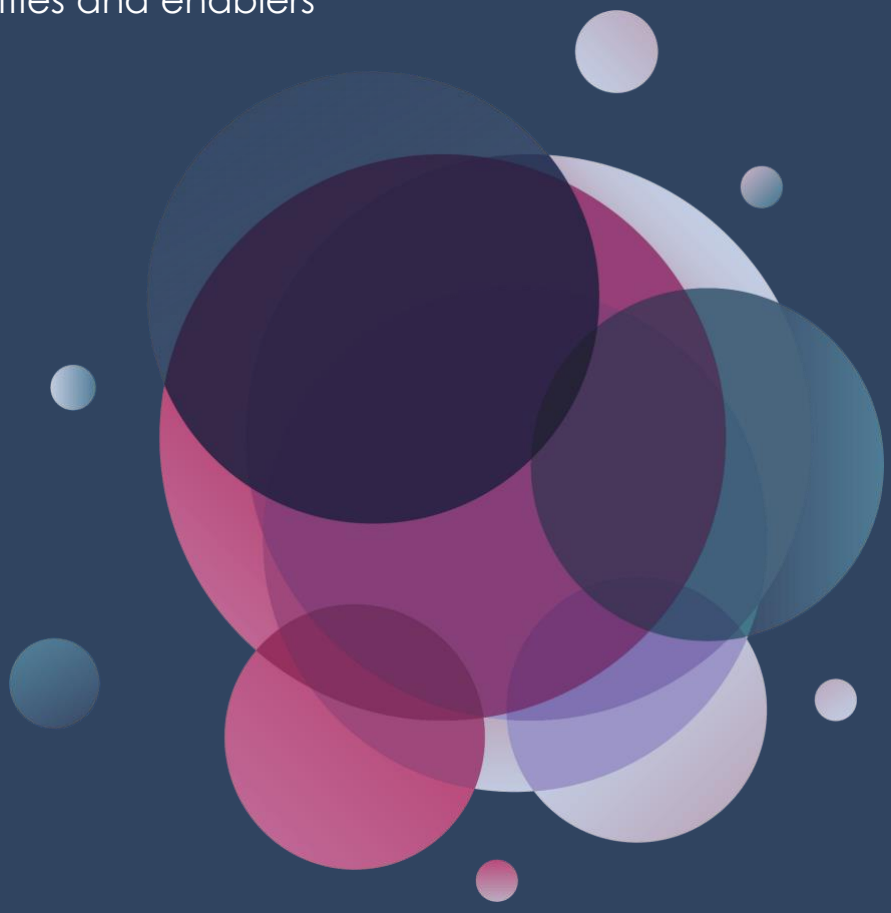
APPENDICES

A. Definition of the West Metro region
B. Methodology Part A
C. Methodology Part B
D. Avoidable ED presentation analysis
E. Factors influencing health needs across focus cohorts in the West Metro region mapped against the Social Ecological Model
F. Detailed opportunities and enablers



Appendix A. Definition of the WM HSP region

The WM HSP region includes 7 full Local Government Areas (LGA) and parts of Hume, Moorabool, and Melbourne LGAs.

The WM HSP region includes the full LGAs of Maribyrnong, Hobsons Bay, Moonee Valley, Brimbank, Merri-bek, Wyndham, Melton. It includes only part of the LGAs of Melbourne, Hume and Moorabool. Melbourne, Hume and Moorabool have therefore been defined in ABS Tablebuilder using the postcodes for WM HSP as defined by the Department of Health for the COVID Positive Pathways program (updated 27 September 2022).

Table 15. Definition of partial LGAs in the WM region (Hume, Moorabool and Melbourne)

LGA	Postcodes	Notes
Melbourne–*part a*	3000; 3003; 3006; 3008; 3031; 3051; 3052	Excludes South Yarra, East Melbourne, Carlton and North Carlton. Population (2021 URP) Melbourne: 149,615 Melbourne–*part a*: 122,242 (81.7%).
Hume–*part a*	3036; 3043; 3045; 3060; 3427; 3429	Includes Sunbury and surrounds. Population (2021 URP) Hume: 243,901 Hume–*part a*: 54,714 (22.4%).
Moorabool–*part a*	3340	Includes Bacchus Marsh and surrounds. Population (2021 URP) Moorabool: 37,632 Moorabool–*part a*: 25,335 (67.3%)

Some postcodes traverse LGA boundaries and therefore LGA has also been added to TableBuilder crosstabulations to limit results to only that portion of the postcode which is located within the LGA of interest.

Appendix B. Methodology Part A

To ensure a comprehensive and evidence-based outcome, the project utilised the NWMPHN Health Needs Assessment Framework (the 'Framework'). The Framework considers comparative need through the analysis of epidemiological data and quantities need using the Social Determinants of Health (SDH).

Comparative need uses measures to define need across a population or community. It highlights those with similar needs who are not yet receiving services.

The Framework examines comparative through analysis of epidemiological data about the health and wellbeing needs across the West Metro region. The data is grouped in the five SDH metrics.

Metric 1 constitutes the 'base need' by LGA and accounts for 40% of the overall need, recognising demand and economies of scale are important attributes of resource allocation. Metrics 2 to 5 are allocated an 'SDH equity loading' to account for the remaining 60% of need.

Table 16. The quantification of model metrics and their description

Metric	Description	Loading
Metric 1. Projected population	Determined by data projections of the population size distribution within the region.	Base need = 40%
Metric 2: Socio-demographic factors	Sociodemographic factors are recognised as important determinants of health. The ABS Index of Relative Socio-economic Disadvantage (IRSD) index is used as a proxy for disadvantage by LGA	Equity loading = 60% (Distributed evenly across the indicators)
Metric 3: Risk factors	Risk factors capture attributes, characteristics and exposures that increase the likelihood of poor health that are unevenly distributed across the population.	
Metric 4: Access and geographical environment	Recognises that the health system itself is a social determinant and plays an important role in mediating the differential consequences of illness in people's lives. Geographical maldistribution of health professionals contributes to poorer outcomes.	
Metric 5: Health conditions and consequences	Recognises that social position is an important factor driving health consequences (or outcomes).	

Criteria for selecting the indicators

The report includes a wide range of indicators and not all of them are used in the quantification of need model (See Table 18 for full list of indicators). Only those indicators which meet a set of criteria are included.

The criteria to select the model indicators is:

Criteria 1: A complete list of variables from the WM HSP HNA is developed and analysed for (a) face and content validity to determine an overall rating for data quality (yes/no), and (b) data granularity.

Criteria 2: Health impact and magnitude are assessed (adapted from the NICE Guidelines (Cavanagh & Chadwick, 2005). Each variable that meets criteria 1 is rated high, medium, low for health impact and magnitude using published evidence to guide decision-making. Consensus is determined and experts consulted where required.

Criteria 3: Once all indicators have been assessed against criteria 1 and 2, the shortlisted candidate indicators are reviewed for their potential correlation with each other. In the event two indicators are highly correlated, only 1 will be selected so as not to inflate individual issues.

Validated indicators

Table 17. Validated indicators for the WM HSP HNA (n = 27)

Metric	Validated indicators
Metric 1. Projected population	Projected % WM HSP region (2025)
Metric 2: Socio-demographic factors	% of SA1s with an IRSD index in deciles 1-4
Metric 3: Risk factors	Born LBW (%) Vulnerable 1+ domains AEDC (%) Rate of FV by 100,000 Current adult smokers (%) 2+ standard drinks (%) Low or very low physical activity(%) Obese adults (%) Children 5 years not fully vaccinated (%) Bowel cancer screening (%) Breast screening (%) Cervical screening (%)
Metric 4: Access and geographical environment	Health infrastructure index GP workforce (FTE) per 10,000 people Nurses and midwives workforce (FTE) per 10,000 people Utilisation rates (%) of Medicare-subsidised service – GP Utilisation rates (%) of Medicare-subsidised service – Diagnostic imaging Utilisation rates (%) of Medicare-subsidised service – Specialists PPH – Acute conditions rates per 100,000 people PPH – Chronic conditions rates per 100,000 people PPH – Vaccine preventable conditions rates per 100,000 people Avoidable ED presentation rates per 1,000 people
Metric 5: Health conditions and consequences	In-patient hospitalisation rates per 100,000 (2021/22) ED presentation rates per 1,000 (2021/2022) % of residents with chronic health conditions (1 or more) Premature mortality, average annual ASR per 100,000 population (0-74years), 2016-2022

Full list of indicators

Table 18. Full list of indicators

Colour scheme: Green = better than benchmark, Amber = "similar" to benchmark, Red = below 95% of target

	Indicator	Period (year)	Melbourne	Maribyrnong	Brimbank	Hobsons Bay	Merri-bek	Moonee Valley	Hume	Melton	Wyndham	Moorabool–part a	Benchmark
Metric 1: Population size	Projected population growth[1,*]	2020 to 2030	28.7	25.4	14.4	18.0	23.1	17.0	34.0	40.9	44.9	17.2	**19.1**
Metric 2: Social determinants of health	IRSD[1,€]	2016	1010	995	921	1004	1018	1014	947	994	1008	1060	**1000**
	% of population with IRSD in deciles 1-4~	2016	41.3	41.8	79.0	39.3	33.4	15.6	40.7	45.1	37.7	39.9	**43.5**
Metric 3: Risk factors	% of infants born low birth weight (data over 3 years) [1,*]	2017 to 2019	6.9	6.0	7.2	6.6	5.8	6.2	6.6	7.6	8.3	8.3	**6.7**
	% of children vulnerable on 1 or more AEDC domains[1,¥]	2021	20.6	15.4	29.3	16.4	19.9	13.4	28.7	23.8	21.8	22.0	**19.2**
	Rate of family violence per 100,000 population[*]	2022	1397.6	1178.7	1416.5	1119.9	1157.9	986.1	1491.4	1510.9	1310.6	1256.1	**1,374.0**
	Estimated rate per 100 people aged 18 years and over who are current smokers[¥]	2017 to 2018	14.0	16.5	17.9	15.7	16.1	14.0	21.8	17.7	15.6	21.7	**14.5**
	% of pregnant women who smoked during pregnancy[¥]	2017 to 2019	3.4	4.0	7.4	5.1	5.2	5.0	10.1	9.7	5.6	12.1	**6.5**
	(Estimated rate per 100 people aged 18 years and over who consumed more than two standard drinks a day[¥]	2017 to 2018	24.4	21.4	14.6	28.1	23.3	28.9	17.5	19.5	15.9	32.8	**26.4**
	% of persons 18 years and over who undertook low, very low or no exercise in the previous week[*]	2017 to 2018	63.1	68.1	76.2	67.9	65.9	60.9	75.2	73.8	72.3	67.7	**65.5**
	% of adults (18+) population who met fruit consumption guidelines[*,¥]	2017 to 2018	49.7	50.8	55.1	55.3	54.0	54.3	56.3	53.5	52.7	49.3	**51.5**

	Indicator	Period (year)	Melbourne	Maribyrnong	Brimbank	Hobsons Bay	Merri-bek	Moonee Valley	Hume	Melton	Wyndham	Moorabool–*part a*	Benchmark
Metric 3: Risk factors (cont.)	Rate of people aged 18 and above years who were obese[1, ¥]	2017 to 2018	25.9	29.0	33.0	31.6	30.2	28.1	38.0	42.0	35.4	41.6	**29.5**
	Rate of people aged 2-17 years who were obese[¥]	2017 to 2018	8.1	7.1	8.6	6.6	7.4	5.7	8.6	8.7	8.5	9.5	**7.2**
	% of 15 year olds who had received dose 3 of HPV vaccine[¥]	2018		87.3	77.0	89.3	88.0	80.1	74.3	68.5	73.8	79.1	**76.9**
	% of Children fully immunised at 1 year of age[1,*]	2018	89.0	94.3	94.4	93.9	94.1	95.1	93.1	94.0	94.2	96.5	**94.3**
	% of Children fully immunised at 2 year of age[1,*]	2018	84.2	89.8	89.8	91.9	90.3	92.2	88.7	91.7	90.7	89.2	**91.2**
	% of Children fully immunised at 5 year of age[1,*]	2018	89.2	94.8	94.8	95.1	94.7	95.5	95.0	96.7	94.8	96.9	**95.5**
	% of males aged 50-74 years who participated in bowel cancer screening[1,*]	2016 to 2017	35.1	39.8	40.0	42.1	38.1	44.1	38.2	37.4	37.8	44.4	**43.2**
	% of women aged 50 to 74 years who participated in breast cancer screening[1,*]	2016 to 2017	42.5	51.1	54.2	53.8	52.3	58.5	49.3	50.1	48.6	54.0	**54.1**
	% of women aged 20 to 69 years who participated in cervical cancer screening[1,*]	2015 to 2016	38.4	55.4	52.5	63.1	57.1	59.1	50.1	51.5	47.5	58.4	**57.1**
Metric 4: Access & geographical environment	Liveability index[1, ¥]	2021	111.3	103.7	97.6	100.6	103.7	102.3	97.1	94.4	96.6	95.4	**100.0**
	Alleged offender incidents rates[1,*]	2020	8,078	3,303	3,624	2,317	2,307	2,360	3,467	2,505	2,284	2,513	**2729**
		2021	7,553	2,685	2,784	1,967	1,938	1,903	2,609	2,011	1,773	2,167	**3410**
		2022	6,889	2,828	2,589	2,261	1,867	2,038	2,320	1,975	1,844	1,889	**2587**
	Health Infrastructure Index[1]	2021	4.1	3.6	1.6	2.6	3.2	3.0	1.6	1.2	1.5	1.3	**2.3**
	GP workforce (FTE) per 10,000 people[*]	2018	14.9	8.7	7.9	8.2	8.2	8.6	6.0	6.3	7.4	7.0	**8.4**
		2019	14.9	9.6	8.4	7.2	7.9	9.7	6.9	5.8	8.1	7.9	**8.7**
		2020	14.0	9.8	8.2	8.3	8.6	8.2	7.3	5.5	7.6	7.4	**8.7**
		2021	19.6	12.3	9.5	9.1	11.2	11.1	8.4	6.2	8.8	8.1	**10.6**

	Indicator	Period (year)	Melbourne	Maribyrnong	Brimbank	Hobsons Bay	Merri-bek	Moonee Valley	Hume	Melton	Wyndham	Moorabool–*part a*	Benchmark
	Nurses and Midwives workforce (FTE) per 10,000 people[1,^]	2020	584.1	145.3	114.4	50.9	56.4	42.1	37.9	32.9	59.5	64.4	**125.2**
	Allied health professionals (FTE) per 10,000 people[1,^]	2020	181.6	62.0	41.7	45.7	51.2	65.5	34.6	26.9	25.5	35.5	**59.5**
	Dental Practitioners workforce (FTE) per 10,000 people[1,^]	2020	27.2	9.0	4.8	4.6	6.2	6.2	3.7	4.1	4.5	2.2	**7.4**
	Medical Radiation Practitioners workforce (FTE) per 10,000 people[1,^]	2020	30.4	9.5	4.8	4.6	6.2	6.2	3.7	4.1	4.5	2.2	**6.0**
	Average distance (km) to Bulk-billed GP clinic[1,*]	2021	0.6	0.7	1.1	1.0	0.7	0.9	1.5	1.7	1.1	1.4	**1.1**
	Mental health services Episodes of care rates per 10,000 people~	2021	54.8	61.0	70.7	64.8	51.5	48.1	123.9	65.7	58.1	75.8	**62.5**
	PPH – Acute conditions rates per 10,000 people~	FY21 to FY22	63.6	87.7	86.0	101.1	97.1	90.8	111.1	84.8	119.5	90.8	**82.3**
	PPH – Chronic conditions rates per 10,000 people~	FY21 to FY22	51.4	83.7	113.5	112.3	119.5	122.8	148.8	103.9	85.5	122.8	**94.6**
	PPH – Vaccine-preventable conditions rates per 10,000 people~	FY21 to FY22	22.1	42.7	69.3	49.5	43.7	22.1	45.5	46.2	35.1	22.1	**40.8**
	Avoidable ED presentation rates per 1,000 people~	FY21 to FY22	78	68	49	133	68	80	22	88	64	23	**65**
Metric 5: Health conditions & consequences	In-patient hospitalisation rates per 1,000 people~	FY21-FY22	269	386	470	449	452	451	526	367	327	419	**387**
	Emergency department presentations rates per 1,000 people~	FY21 to FY22	277	211	188	338	223	263	379	332	249	182	**260**
	% of residents with chronic health condition (1 or more)[*]	2021	17.3	25.2	24.4	27.0	27.8	26.9	32.1	23.0	19.1	31.4	**27.4**
	% of residents with chronic health condition (2 or more)[*]	2021	3.7	6.7	7.8	8.1	8.0	8.0	10.7	6.8	5.2	10.6	**8.6**
	% age-standardised rate per 100 of people aged 18+	2017-2018	10.3	13.7	16.2	13.2	13.1	10.5	19.2	15.1	14.0	13.8	**12.9**

	Indicator	Period (year)	Melbourne	Maribyrnong	Brimbank	Hobsons Bay	Merri-bek	Moonee Valley	Hume	Melton	Wyndham	Moorabool–*part a*	Benchmark
	years with high or very high psychological distress based on K10 #												
	Premature mortality; average annual ASR per 100,000 population (0-74 years)*	2016-2020	246	325	298	280	277	230	283	294	277	293	**220**
	Avoidable mortality; average annual ASR per 100,000 population (0-74 years)*	2016-2020	124	159	146	137	135	106	141	148	136	144	**110**
	Rate of notifications of Hepatitis B rate per 10,000 population*	2021	5.9	4.0	5.9	1.0	1.1	1.5	N/A	2.4	3.3	N/A	**2.0**
Metric 5: Health conditions & consequences	Rate of notifications of Chlamydia rate per 10,000 population*	2021	107.3	37.9	24.2	21.4	32.8	19.4	N/A	28.4	20.6	N/A	**26.5**
	Rate of notifications of Gonorrhoea rate per 10,000 population*	2021	62.5	22.3	11.7	10.9	21.4	11.8	N/A	12.3	7.5	N/A	**10.9**
	Rate of notifications of Syphillis rate per 10,000 population*	2021	17.3	5.0	3.6	2.5	4.5	3.0	N/A	4.5	2.6	N/A	**3.4**
	Rate of notifications of HIV rate per 10,000 population*	2021	1.7	0.2	0.4	0.3	0.4	0.1	N/A	0.3	0.1	N/A	**0.25**
	Rate of notifications of Gonorrhoea rate per 10,000 population*	2021	62.5	22.3	11.7	10.9	21.4	11.8	N/A	12.3	7.5	N/A	**10.9**

[1] Criteria 1 met
€ Benchmark is the IRSD index base of 1000 for Australia (5th decile)
Benchmark is Australia
* Benchmark is Victoria
¥ Benchmark is Greater Melbourne
^ Benchmark is NWMPHN
~ Benchmark is WM HSP

N/A: Data not available; Note: for notifiable conditions (Hepatitis B, Chlamydia and Gonorrhea), data was only available for males and females. Therefore, an average was calculated for the indicator.

Appendix C. Methodology Part B

Epidemiological, qualitative, and comparative methods are used to describe the health issues of the region and identify inequalities in health and access to services.

Recruitment

Leveraging already established relationships with NWMPHN/HSP members and key stakeholders/service providers in the region drove initial recruitment for in-depth interviews and focus groups were. Key stakeholders/service providers and consumers were also identified using a combination of professional networks, existing consumer engagement mechanisms (e.g., reference groups), NWMPHN's People Bank, publicly available contact information, and word-of-mouth.

Pre-existing relationships with key stakeholders/service providers (e.g., Peter MacCallum Cancer Centre, Multicultural Centre), were asked to advertise the project on our behalf (e.g., on their intranet, emails, announcements at meetings, word-of-mouth). By using a "snowball sampling" methodology, participants will be asked to recommend other potential key stakeholders/service providers.

Distribution channels for the consumer survey included:

- NWMPHN newsletters
- Multicultural Centre
- Victorian Government (Office of Multicultural Affairs, Department of Health)
- Local governments
- General practices
- Social media

Five consumers who participated in the survey were randomly selected to win one of five $100 gift cards as recognition of time taken to complete the survey.

Additionally, participants were offered reimbursement for their time and participation in the consumer focus groups or GP in-depth interviews, using the rates as described in the NWMPHN stakeholder reimbursement policy (e.g., $60/hr for community members and $145/hr for health providers).

Purposive sampling was chosen as an appropriate strategy to maximise comparative potential in the data from different perspectives from individuals with shared characteristics to draw inferences.

Population

Inclusion and exclusion criteria

The population of interest included four cohorts (children (0 to 9 years), women and females (20 to 39 years), older adults (65 years and over) and people living with cancer living within the WM HSP region (see Table 19).

Table 19. Inclusion and exclusion criteria for community consultations.

Community members		Health providers	
Included	**Excluded**	**Included**	**Excluded**
People living within the region area. **Must be aged above 16 years.**	Anyone less than 16 years (however, parents can complete survey on behalf of children aged 0-9 years).	Health providers which deliver services (face-to-face or telehealth) to people who live in the WM HSP region.	Health providers which only deliver services to people who live outside of the WM HSP region.

Demographics

Community and Health Provider Survey

A total of 648 surveys were completed, including 502 consumer surveys and 146 health provider surveys[11].

Table 20. Demographics of consumer survey respondents across the four focus cohorts.

Characteristic	Children (0- 9) (n=16)	Women (20-39) (n=115)	Older adults (65+) (n=99)	People living with cancer (n=20)
Definition	People who selected they are answering the survey as a parent, guardian or carer for a child under 16 and child was 0-9 years old	People who responded as female and aged between 20-39	People who responded as aged above 65	People who selected they are currently living with cancer
Age	50% between 0 – 4 50% between 5 - 9	33% between 20-39 67% between 30-39	61% between 65-74 32% between 75-84 7% over 85	35% between 20-39 60% between 40-64 5% over 65
Gender	67% Female 33% Male	N/A	82% Female 12% Male 4% Non-binary/trans/gender-fluid 2% Prefer not to answer	75% Female 20% Male 5% Non-binary/trans/gender-fluid

[11] *1,194 surveys initially, 442 surveys removed due to invalid entries. Of the 752, 250 excluded due to living outside HSP region areas, leaving 502 surveys for analysis.*

Characteristic	Children (0- 9) (n=16)	Women (20-39) (n=115)	Older adults (65+) (n=99)	People living with cancer (n=20)
Aboriginal &/or Torres Strait Islander	13% Aboriginal &/or Torres Strait Islander	12% Aboriginal &/or Torres Strait Islander	5% Aboriginal &/or Torres Strait Islander	25% Aboriginal &/or Torres Strait Islander
Born overseas/ Australia	80% Australia 7% Overseas 13% Prefer not to answer/ unknown	77% Australia 19% Overseas 4% Prefer not to answer	66% Australia 31% Overseas 3% Prefer not to answer/ unknown	75% Australia 20% Overseas 5% Prefer not to answer
LGBTQIA++ Status	13%	34%	9%	15%

Table 21. Specialist service areas of health providers survey respondents[12]

Specialist areas where health providers provided services	Number	Percentage
General practice	**67**	**45.9%**
Mental health	**31**	**21.2%**
Allied health	**18**	**12.3%**
Aged care	**16**	**11.0%**
Nursing	**15**	**10.3%**
Alcohol and other drugs (AOD)	13	8.9%
Aboriginal or Torres Strait Islander health	8	5.5%
Specialist services	8	5.5%
Pharmacy	7	4.8%
Maternal and child health	6	4.1%
Medical specialty	5	3.4%
Paediatrics	5	3.4%
Dentistry	4	2.7%
Complementary health (e.g. yoga, acupuncture)	4	2.7%
Emergency medicine	3	2.1%
Homelessness	2	1.4%
Social work	2	1.4%
Community care/community nursing	2	1.4%
Academia	1	0.7%
Community Engagement / Health Promotion	1	0.7%
Emergency treatment, education & forward planning	1	0.7%
Palliative Care	1	0.7%
Refugee & Asylum Seeker Health	1	0.7%
Service Planning	1	0.7%
Sexual Health	1	0.7%
Sexual Health, Men's Health Trans and Gender Diverse Health, LGBTIQ Health	1	0.7%
Women' Health Promotion and Prevention, Family Violence Prevention	1	0.7%
Youth Services	1	0.7%
Consultant	1	0.7%

[12] Survey respondents could select multiple answers

Table 22. Local government areas where health provider survey respondents work[13]

LGA	Number	Percentage
Brimbank	**35**	**23.8%**
Melbourne	**35**	**23.8%**
Merri-bek	**29**	**19.7%**
Maribyrnong	**25**	**17.0%**
Yarra	**25**	**17.0%**
Hume	24	16.3%
Melton	22	15.0%
Moonee Valley	22	15.0%
Wyndham	20	13.6%
Hobsons Bay	19	12.9%
Darebin	14	9.5%
All these listed LGAs	8	5.4%
Moorabool	5	3.4%
Macedon Ranges	4	2.7%

Focus groups and in-depth interviews

A total of 85 people (22 consumers and 63 health providers) were consulted over 23 consultations. The consultations sessions included 11 focus groups (5 consumer and 6 health provider) and 12 in-depth semi-structured interviews (1 consumer, 8 health provider and 3 GP).

Table 23. Consumer consultation sessions.

Focus cohort	No. of consultations	No. participants
Children (0 to 9 years)	1 focus group	3 parents/guardians
Women and females (20 to 39 years)	1 focus group	4 consumers
Older adults (65 years and over)	1 focus group	4 consumers, 1 carer
People Living with Cancer	1 focus group	1 consumer, 3 carers
Culturally and Linguistically Diverse	1 in-depth interview	1 consumer (and 1 interpreter)
LGBTIQIA+	1 focus group	4 consumers
Total	**6 consumer consultation sessions** (5 focus groups, 1 interview)	**22 consumers** (including 7 carers, parents/guardians)

[13] Survey respondents could select multiple answers

Table 24. Health provider and GP focus groups and in-depth consultations.

Focus Cohort	No. consultations	Health provider Representatives	
Children (0 to 9 years)	1 health provider focus group 1 in-depth interview (GPs)	2 Your Community Health 3 GPs 1 City of Hume	3 DPV Health 2 City of Wyndham, Youth Services 3 Royal Children's Hospital clinicians
Women and females (20 to 39 years)	1 in-depth interview (GPs) 1 community health provider focus group	1 Women's Health in the North 1 Good Shepherd 1 IPC Health	3 City of Moonee Valley 1 City of Darebin - Maternal and Child Health 1 GP
Older adults (65 years and over)	1 in-depth interview (GPs) 1 health provider focus group	4 GPs 1 Elder Rights Victoria 2 Bolton Clarke	2 City of Merri-bek 1 City of Hobsons Bay
People living with cancer	1 in-depth interview (health promotion)	1 Cancer Council	
Aboriginal and Torres Strait Islander People	1 health provider health provider focus group	1 CoHealth 1 IPC Health 1 VAHS	
People experiencing marginalisation Refugee/ migrant and/ or homelessness	1 community health provider focus group 1 in-depth interview (medical and oral)	1 Asylum Seeker Resource Centre 2 Merri Health 1 Maribyrnong City Council	1 RCH (Frontyard Youth Services) 2 Cohealth
LGBTQIA++	1 community health provider focus group	2 Switchboard Victoria	
WM HSP / WPHU consults	6 health provider in-depth interview	4 Royal Children Hospital (clinician and management) 3 Royal Melbourne Hospital clinicians 1 Royal Women's Hospital clinician	3 Peter MacCallum Cancer Centre clinicians 5 Western Health clinicians 2 Werribee Mercy Hospital Clinicians
Total	**17 consultations**	**63 health provider representatives**	

Data collection

Community and Health Provider Surveys

The consumer survey included a range of closed-ended questions which focus on understanding perceived health needs of the community and barriers and facilitators for accessing healthcare. A range of demographic data was also collected, along with the respondent's place of residence (postcode) in order to identi people who live in the WM HSP region. The purpose was to gain the perspectives of a broad range of people through a large number of responses and disaggregate by proxies for disadvantage status. Surveys were completed online using Survey Monkey.

The health provider survey included the same concepts and research questions as the consumer survey but from the perspective of the provider, again the focus was on breadth rather than depth.

Focus groups and in-depth interviews

Semi-structured 60 – 90-minute interviews and focus groups were undertaken between May – July 2023 by representatives from NWMPHN and WM HSP and WHPU. An interview protocol outlining questions, as well as an online presentation to guide consultation sessions was developed. The protocol contained open-ended questions and probes around the SEM to encourage participants to reflect on their experience relevant to the research questions.

To increase participation (through increased accessibility and reduced cost to participants and facilitators), online consultations were conducted. Pre-consultation information was provided to participants about the purpose of the project. A plain language version was produced for consumers.

Participants' personal information was not recorded in any documents or publications to protect individual identity. Consultations facilitated by NWMPHN were recorded and transcribed verbatim. Verbal permission to record and transcribe sessions was sought prior to sessions, informing participants about confidentiality, data storage and destruction.

Data analysis

Qualitative data analysis - Focus groups and in-depth interviews

Consumer and some health provider consultations (n=17) were audio-recorded and transcribed verbatim using Microsoft Teams. A scribe attended all consultations and recorded notes using a template.

NWMPHN was responsible for the data analysis and cleaned and coded the transcripts. Deductive analysis was used to group excerpts based on the SEM.

Thematic analysis of consumer in-depth interviews and focus groups was synthesised with quantitative survey data to provide nuanced insights into felt and expressed health needs across the region. Findings were analysed by focus cohorts; key findings are discussed in the Part B of this report.

Reflexive strategies to reduce facilitator bias included facilitator debrief sessions (for some sessions) and question refinement. Key themes and quotations were selected to share with participants and for discussion with key stakeholders (WM HSP).

Quantitative data analysis - Community and Health Provider Surveys

Quantitative survey data was analysed using descriptive statistics (count and percentage of responses). Both the community and health provider surveys were quality checked to ensure no duplicate responses or invalid entries were included in the analysis.

Analysis was broken up into four sections:

- Demographics for the community, health provider and the patient characteristics.
- Current health conditions, level of concern about health conditions and receiving care for health conditions. A sub-group analysis was applied if there were 15 or more responses to the higher-level ratings of concern ('Extremely or very concerned') and if respondents received care for conditions of concern to them.
- Hospitalisation and emergency department presentations (community survey only).
- Current access to health care and limitations or barriers to seeking care.

Victorian population health data set analysis

The Victorian Admitted Episode Dataset (VAED) and Victorian Emergency Minimum Dataset (VEMD) were used to inform the hospital data in WM HSP region from July 2019 to March 2023. The VAED comprises of de-identified demographic and clinical details for admitted episodes of care occurring in Victorian hospitals. The VEMD contains de-identified demographic and clinical data detailing ED presentations at Victorian hospitals.

Data quality checks were undertaken to ensure PPHs, and avoidable ED presentations were correctly identified. Descriptive statistics (number and percentage) and time series plots were conducted to analyse PPH data from VAED and avoidable ED data from VEMD for each of the four focus cohorts. PPHs were grouped into conditions and categories and avoidable EDs were grouped into ICD-10 chapters and blocks for analysis.

PPH analysis for each cohort was broken up into:

- Time series plot of all four cohorts from July 2019 to March 2023
- The number of PPHs by category in 2020, 2021, 2022
- Number and percentage of PPH conditions in 2022
- Top 10 PPH conditions in 2022 and the yearly changes from 2020 and 2021

Avoidable ED presentations analysis for each focus cohort was broken up into:

- Time series plot of all four cohorts from July 2019 to March 2023
- Number of avoidable ED presentations in six-month periods from July 2019 to March 2023
- The top 10 reasons for avoidable ED presentations by ICD-10 chapters in 2022 and the yearly changes from 2020 and 2021
- A deep dive method was applied after identifying the top four ICD-10 chapters in 2022. We measured the number of avoidable ED presentations due to the top five ICD-10 blocks within the four chapters.

Important considerations (caveats) for interpretation of the analysis are documented in Part B of this report.

Appendix D. Avoidable ED Presentation Analysis

The data in the tables below, supports the analysis in Part B1 3.3 - Avoidable Emergency Department Presentations (Figure 27, Figure 29 and

Figure 31).

Avoidable EDs in children (0 to 9) in WM HSP region

Table 25. Number of avoidable ED presentations in children (aged 0 to 9) by ICD-10 Chapter in 2022.

AED condition – ICD 10 Chapter		Count	Percentage
1	Injury, poisoning and certain other consequences of external causes	9197	29.5%
2	Certain infectious and parasitic diseases	7143	22.9%
3	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	4594	14.7%
4	Diseases of the respiratory system	3844	12.3%
5	Diseases of the skin and subcutaneous tissue	1033	3.3%
6	Diseases of the digestive system	977	3.1%
7	Diseases of the ear and mastoid process	945	3.0%
8	Codes for special purposes	809	2.6%
9	Factors influencing health status and contact with health services	681	2.2%
10	Diseases of the genitourinary system	633	2.0%
11	Diseases of the eye and adnexa	488	1.6%
12	Diseases of the musculoskeletal system and connective tissue	291	0.9%
13	Diseases of the circulatory system	212	0.7%
14	Certain conditions originating in the perinatal period	156	0.5%
15	Mental and behavioural disorders	48	0.2%
16	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	42	0.1%
17	Diseases of the nervous system	42	0.1%
18	Endocrine, nutritional and metabolic diseases	29	0.1%
19	Neoplasms	9	0.0%
20	Congenital malformations, deformations and chromosomal abnormalities	<9	0.0%
21	Pregnancy, childbirth and the puerperium	<5	0.0%

Source: Victorian Admitted Episodes Dataset, VAHI, 2022

Avoidable EDs in women and females (20 to 39) in WM HSP region

Table 26. Number of avoidable ED presentations in women and females (20 – 39) by ICD-10 Chapter in 2022.

AED condition – ICD 10 Chapter		Count	Percentage
1	Injury, poisoning and certain other consequences of external causes	3873	22.7%
2	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	2809	16.4%
3	Pregnancy, childbirth and the puerperium	2494	14.6%
4	Diseases of the genitourinary system	1669	9.8%
5	Certain infectious and parasitic diseases	852	5.0%
6	Diseases of the digestive system	690	4.0%
7	Factors influencing health status and contact with health services	625	3.7%
8	Diseases of the musculoskeletal system and connective tissue	609	3.6%

AED condition – ICD 10 Chapter		Count	Percentage
9	Diseases of the skin and subcutaneous tissue	600	3.5%
10	Diseases of the ear and mastoid process	599	3.5%
11	Codes for special purposes	532	3.1%
12	Diseases of the eye and adnexa	527	3.1%
13	Diseases of the respiratory system	525	3.1%
14	Mental and behavioural disorders	234	1.4%
15	Diseases of the nervous system	179	1.0%
16	Diseases of the circulatory system	141	0.8%
17	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	61	0.4%
18	Endocrine, nutritional and metabolic diseases	52	0.3%
19	Neoplasms	21	0.1%
20	Congenital malformations, deformations and chromosomal abnormalities	<5	0.0%
21	Certain conditions originating in the perinatal period	<5	0.0%

Source: Victorian Admitted Episodes Dataset, VAHI, 2022

Avoidable EDs in older adults (65 years and over) and over in West Metro region

Table 27. Number of avoidable ED presentations in older adults (aged 65+) by ICD-10 Chapter in 2022.

AED condition – ICD 10 Chapter		Count	Percentage
1	Injury, poisoning and certain other consequences of external causes	2080	25.1%
2	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1343	16.2%
3	Diseases of the eye and adnexa	689	8.3%
4	Diseases of the musculoskeletal system and connective tissue	646	7.8%
5	Diseases of the ear and mastoid process	629	7.6%
6	Diseases of the genitourinary system	500	6.0%
7	Diseases of the skin and subcutaneous tissue	411	5.0%
8	Diseases of the digestive system	407	4.9%
9	Factors influencing health status and contact with health services	360	4.4%
10	Certain infectious and parasitic diseases	283	3.4%
11	Diseases of the circulatory system	278	3.4%
12	Diseases of the respiratory system	202	2.4%
13	Codes for special purposes	161	1.9%
14	Diseases of the nervous system	79	1.0%
15	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	59	0.7%
16	Endocrine, nutritional and metabolic diseases	59	0.7%
17	Mental and behavioural disorders	46	0.6%
18	Neoplasms	<46	<0.6%
19	Pregnancy, childbirth and the puerperium	<5	<0.6%

Source: Victorian Admitted Episodes Dataset, VAHI, 2022

Appendix E. Factors influencing health needs across focus cohorts in the West Metro region mapped against the Social Ecological Model (SEM)

Table 28. Factors influencing health needs in children 0 -9 in the West Metro region, mapped against the SEM.

 Individual Level	 Interpersonal Level	 Program/ Service Level	 Policy & Environment Level
Indicators of disadvantage Housing and financial stress, non-English speaking background, access to affordable transport (health care secondary concern) **Health literacy** Affects capacity to make informed decisions, lack of knowledge about preventative health measures, exposure to vulnerability; lack of awareness of what services are available (especially refugee/migrant); high health literate families can present with greater expectations leading to increase ED presentations for respiratory issues in particular. **Parent concerns** Stigma (relating to mental illness concerns especially in some cultural groups), lack of trust in local medical services -> directly to hospital; worried parents, potentially influenced by media messaging. **Child behaviours** Issues adjusting to post-COVID – ability to self-regulate in shared environments	**Family dynamics** Domestic violence – where safety is an issue – increased ED presentations (family & referral) **Social support** Parents with fewer social connections – can lead to greater stress and uncertainty about course of action; COVID-19 increased stress for families with a sick child (restricted numbers -> no support for the family member). The lack of social networks and supports is particularly missing for children/ families dealing with mental health issues and behaviours of concern.	**Cost** Families willing to wait in ED rather than pay GP or allied health professional. **Access challenges** Lack of access to health prevention, management & planning of chronic health conditions (e.g., asthma -> ED presentations) **Inclusivity** Lack of cultural competence, sensitivity, and awareness; lack of availability of care in language **COVID effects** Missing out of Key Ages and Stages appointments – other services no line of sight. **Staff shortages & competency** Lack of paediatric specialists – families go straight to hospital to access specialists; virtual consults don't allay parent fears; GPs referring children to ED due to lack of experience, time or willingness to treat. **Waitlists** Health conditions deteriorate & can result in hospitalisations (e.g., a patient waiting to see a paediatrician regarding constipation ends up needing emergency care) **Referral process** Accept & reject – poor comms, no transparency on wait-time.	**Complex funding models** Funding models don't necessary account for specific needs of children; hospital get funding yet no capacity to do some of the work community services are better placed to do (e.g., outreach programs) **Infrastructure** Still building hospitals and increasing bed capacity rather than supporting community services (hospitals – expensive to build & fund) **System navigation** Challenging to understand the complex system. **Poor primary/secondary system access** Missed diagnoses leading to increasing morbidity over time. **NHMRC Clinical Practice Guidelines** Guidelines for ADHD have increased public awareness & interest -> driver of service use/supports

Table 29. Factors influencing health needs in females 20 -39 in the West Metro region, mapped against the SEM.

 Individual Level	 Interpersonal Level	 Program/ Service Level	 Policy & Environment Level
Complex mental health needs Increase in complex mental health. presentations (parental anxiety, trauma, personality disorder, self-harm)- linked to financial determinants. **Health literacy and knowledge of services** Lack of knowledge about preventative health and available services including financial services. Women with a disability often don't access NDIS. *"Confusing and exhausting – it takes so much effort to find information." – Consumer* **Lack of knowledge/fear** Pelvic patients often present and represent to ED seeking diagnosis/ answers or surgery. **Geography** Distance to services is a barrier if there is no public transport. Even with a car, may not be able to afford petrol or have time due to responsibilities.	**Primary caretakers** Women often the primary caretaker, impacting ability to access services; tendency to place dependents' needs before own health and wellbeing – juggling work, caring and other priorities. **Community cultural expectations and stigma** Place community responsibilities before own (some cultural groups). Lack of confidentiality for women from CALD communities with few available translators / bicultural workers. **Intimate Partner /Family Violence** High rates of family violence, coercive control especially in Western region is a major burden of disease and key driver of injury in this group. Migrant and refugee women most vulnerable and endure financial / visa abuse from spouse and family in fear of children/self being deported. CALD/ marginalised women stay in crisis housing significantly longer than other women. **Over-policing of women** Women often misidentified as perpetrators in family violence – especially Aboriginal and Torres Strait Islander women, women of colour. May not trust or disclose abuse to health services in fear of child removal.	**Complexity of care** Services are evolving to meet diverse and complex needs – (e.g., MCH provide care and assessment of childhood milestones but also screening and support for family violence and parent safety). Community services unable to provide specialist care needed (e.g., mental health) **Service Gaps** Medical termination clinics, refuge centres, female GPs, sexual and reproductive hubs, dental and allied health services. Homelessness, mental health, and financial support services most sought. LGAs with highest demand/need and fewest access to options/services. **GP capability in women's health** GPs without women's health expertise don't have the skills/knowledge to manage complex pelvic pain patients and may refer to ED. **Inappropriate/non-existent care pathways** Early pregnancy/ miscarriage requires medical care which could be supported in an after-hours pathway. Lack of direct admissions to birthing suits makes up a large proportion of ED presentations. **Referral and coordination of care** Lack of service knowledge about existing local and culturally appropriate services. Lack of support for primary care to link patients with the acute care other than ED. Conditions exacerbated on long wait lists. **Service flexibility** Responsibilities, higher priorities, and health literacy (finding a job, housing, fear of engaging services) leads to no-shows at appointments. Especially for CALD and Aboriginal and Torres Strait Islander women. Lack of case-worker capacity to re-engage women. Recurrent 'no shows' often not accepted by services.	**Health policy and legislation** Policies and legislation that address social determinants - childcare rebates, and social housing. **Insecure visa status** Refugee and migrant women identified as most vulnerable – not eligible for government social support. **Targeted funding - women's health** For women's health services (e.g. S&R health, health promotion campaigns targeting gendered violence and inequality **Gender inequality** Influences social attitudes including condonement of gendered violence, pay disparity, traditional gender roles and expectations. At a service level – biases towards men in research, availability of women's health services including sexual and reproductive, medical termination clinics. **COVID-19 impact.** Covid increased pressures on women – added flexibility has had some benefits but also increased stress, mental health burden being expected to juggle caretaking and other responsibilities at the same time. **Health System Issues** Information/ documentation not always communicated/ transferred between hospitals- no system to know what has been received.

Table 30. Factors influencing health needs of older adults 65+ in the West Metro region, mapped against the SEM.

 Individual Level	 Interpersonal Level	 Program/ Service Level	 Policy & Environment Level
Comorbidities More likely to have one or more chronic diseases than general population. Mobility issues may also hinder access to health services and are a falls risk (AED) especially if living alone. **Perception of aged care** Fearful attitudes towards aged care leads to treatment delay. **Uncertainty about health needs** Low level health literacy about own health needs and conditions and low awareness of health services / evidence-based information leads to people seeking timely care and trusted advice in the ED. **Transport** Getting to and from health services is a barrier for older adults. Adults in aged care may depend on facility transportation.	**Social values of older adults and elderly** Western culture has a lower regard of older adults and elderly compared to some cultures. Elder abuse (physical, financial, emotional) is prevalent, perpetrated by family, carer or aged care facilities. **Social isolation and support network** May live alone or dependent on a carer/ family member for transport, financial support. May care for another older/ elderly spouse. Social network is generally less health literate. Older LGBTQIA++ people generally don't have as strong social supports. **Discrimination & stigma** Previous experience influences willingness to engage with health services. Strong preference for culturally safe community-controlled healthcare that often liaises with mainstream services. **Trust of GPs/ nurses and Health providers** Trust health advice from health providers especially with a preferred/ known GP or specialist. Strong preference for continuous care.	**Cost of health services** Cost of private healthcare and non-bulk billing GPs a barrier. Public waitlists are too long. Have to travel far to get to a bulk billing clinic. **Community service capability & maturity** Outreach services, aged care and mental health services are still in infancy and aren't big and robust enough to respond to demand and complexity of health needs of older population. Staff ratios to patients is an issue. **Community nurses** Lack of access to aged care facilities and adequately trained staff (especially nurses) in experienced community nurses to manage complex needs. **Premature discharge from hospital** Unrealistic/ misaligned expectations of management in primary care. Patient out-of-pocket costs (medicines and procedures) in the community is a barrier to timely care and factor in ED readmission. **General Practice Home Visits** GPs (especially female GPs) feel unsafe providing home care. Litigation risk and insurance perceived too high by practice managers, reduced access for most vulnerable.	**Government funding** Funding models such as Commonwealth Home Programme (CHSP) may not adequately address long-term care needs/ access issues. Funding to increase GP consultation time to address complex issues. **Pension / Disability Pension & Rebates** Older adults on a pension or disability pension describe it as insufficient to cover costs their healthcare. **Patient rebates for EPC referrals** Cap of 5 subsidised sessions is not meeting the needs for older, comorbid population to access allied health services they need to prevent hospitalisations. The out-of-pocket gap for mental health care is still a barrier for older adults, especially for marginalised groups. **Complexity of primary care disease management** Lack of societal recognition about the complexity of health (ageing/ co-morbidity in the community. Expectations that GPs can "fix everything."

Table 31. Factors influencing health needs of people living with cancer in the West Metro region, mapped against the SEM.

Individual Level	Interpersonal Level	Program/ Service Level	Policy & Environment Level
Geography Distance to community health services is challenging – Western region is lacking compared to inner Eastern suburbs which are "flooded with them". **Lack of knowledge – health information** Understanding and knowing what information and services (outside the hospital) is difficult- consumers spend hours trying to find the right services. Health information about symptom management may lead to delay in seeking care in between appointments. **Fear and worry** Oncology patients may feel more nervous or worried about their symptoms alongside their cancer diagnosis.	**Lack of knowledge / fear** Disease complexity can be confusing for family/carers who described it as a "steep learning curve upon a cancer diagnosis." Health providers identified this as a potential reason for ED presentation. Patients/family said health providers jargon was a barrier to understanding health information about their diagnosis and treatment plan. **Carers experience with health providers** Caring for someone with cancer has a physical and mental tole. Respite services and referral to caring support groups/services and being acknowledged by health professionals as an individual. **Young adults' beliefs about vaping** Vaping believed to be a safer option than smoking by community. Cheap and accessible to children/ young people. Low level of community awareness about long-term health impact. 15% increase in young people vaping in the last 2 years. **Stigma / discrimination – obesity** Obesity major disease burden (PPH) – consumers experience shame/ stigma which influences health provider engagement and GPs don't feel equipped to talk about weight loss. Cancer and mental health are difficult to talk about in some cultures leading to delay in care.	**Access to afterhours cancer care** Medical support networks are limited after hours which may lead patients to seek care at ED where oncology expertise may be limited. SURC provides specialised / appropriate cancer care but limited by location, access, and operational hours. A 24-hour nurse-led hotline/telehealth services one potential opportunity to improve access to advice and early intervention if needed. **Home screening kits & GPs** Bowel cancer second most common cancer where 20% detected in ED → late & poor diagnosis. Bowel and cervical sampling kits can be done at home. Is "low hanging fruit" with great impact to reduce AED. **Community Engagement & Peer-led sessions for cultural safety** Health advice is trusted from family and community members in some cultures - health and community services need to make improved effort to partner with CALD communities to meaningfully provide opportunities for education and provides safety to talk about cancer and related psychosocial issues. Some services better at engaging consumers than others (noticed by community). **GP knowledge and referral to Quit** GPs need to play a larger role in referring to Quit- best chance in getting smokers to quit. GP software a barrier. Integration of Quit is the "biggest value add" to reduce surgeries and AED. Peter Mac – 70% of patients not utilising opportunity for Quit intervention. **Interpreters/ consumer-centric information and communication** Gap in advanced cancer care and consumer-centric information (especially for people with English as a second language). Need to increased access to interpreters.	**Covid-19 and cancer screening** Lockdowns a barrier for people not seeing their GP and attributed to ~3800 missed cancers in the last 2 years (breast, bowel, cervical cancer) based on data up to mid-2022. "*A crisis out there.*" **Health policy** Policies to target supply of vapes in 2023 is welcomed by Cancer Council and health providers – but there is currently lack of services/ awareness campaigns to prevent nicotine addiction in a young and large population. Rates of smoking increased for the first time in two decades for young people. **Government funding** Increased government funding needs to be directed to prevention – particularly smoking and obesity. Additionally, funding services out-of-hours and weekends such as SURC, will improve workforce capacity to support demand and extend hours to potentially reduce ED presentations.

Appendix F. Detailed opportunities and enablers

During the consultation process, community members and health providers were asked to share their ideas on opportunities to improve access to health services and reduce potentially preventable hospitalisations and avoidable ED.

Note: The tables below reflect the suggestions made by the individuals in the focus groups and interviews. When suggesting opportunities and enablers the community members and community health providers were asked to indicate which target cohort was most likely to be impacted by their suggestion. This resulted in them often discussing it in relation to one cohort despite it potentially also applying to other focus cohorts as well.

Individual level

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
Greater focus on education and health literacy (e.g., through school programs and increased focus on the first 1000 days). Ensuring translated materials get to the right people.	Increased levels of health literacy and education/awareness in the population from a young age positively influence health behaviour. Better understanding of symptoms and where to find support may reduce unnecessary hospital visits.	✓	✓	✓	
Building trust with community	Particularly important for engaging Aboriginal and Torres Strait Islander people and other 'hard to reach' communities.		✓	✓	
Addressing social determinants of health	May reduce health care costs and enable communities to make informed decisions about their health and wellbeing.	✓	✓	✓	✓
Creating culturally safe practices and spaces	Facilitates strong patient-provider relationships, enable timely, appropriate interventions and positive experience.		✓	✓	

Interpersonal level

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
Family-centered care that builds health literacy and focuses on addressing barriers (e.g., financial, awareness, transport) Telehealth has been effective to facilitate timely access to care for families.	Improved health knowledge of health issues, prevention, and management.	✓			
Support programs and information for carers	Address carer burnout and improve health and wellbeing; reduce isolation.			✓	✓
Community dialogue changing attitude around family violence.	Help to support social change and acceptance of family violence/ reduce incidence and isolation.		✓		
Promoting paid work for women / gender equality.	Foster a more inclusive and equitable society and bridge gender disparity.		✓		
Expand peer-led support networks and lived experience/ expertise	Key facilitator to building a culturally competent and accessible workforce; peer-support networks may also supplement gaps in services/ workforce shortages.	✓	✓	✓	✓
		LGBTQIA+, CALD communities across all cohorts			
Promoting reliable, user-friendly health information and improved convenience of health services (that include face-to-face options)	May enhance the experience of obtaining accurate health information.		✓		

Program and service level

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
Workforce capacity and capability					
Increase GP capacity by involving a multi-disciplinary team in general practice.	Better leverage multi-disciplinary skills in the community to support primary/ acute health services (especially in areas of GP workforce shortage)			✓	
Increase community nurse training	Improve nurse capability to provide care for more complex community health needs.			✓	
Increase bicultural workforce	To promote psychological and cultural safety; may help facilitate workforce capability and knowledge of cultural safety and help adopt "unconditional positive regard" for the patient. Help		✓		

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
	strengthen engagement with marginalised communities.				
Build knowledge/capability of health services	Facilitates strong patient-provider relationships, enable timely, appropriate interventions and positive experience.		✓		
Holistic care is supported through better use of allied health (e.g., pharmacists, registered nurses, physios, podiatrists, psychologists) and social services	Address complex health issues and improve health outcomes through provision of preventative, rehabilitative and supportive services.	✓	✓	✓	
Increase promotion and public awareness of Priority Primary Care Centers	Improve access to timely, free (including those without Medicare) primary care and help reduce hospital and ED burden.		✓		
Referrals and coordinated transition of care and continuous care					
Core primary care training and clear follow up care plan (for hospital clinicians) to reduce premature patient discharge (e.g., older adults with complex conditions and/or comorbidities) from hospital into primary care.	May reduce hospitalisation readmissions (especially for those with lower social support networks and low SES); may reduce risk of complications (e.g., falls/ medication errors)			✓	
Develop models of care/ programs based on successful examples (e.g., Vaccination referral hub in SE Melbourne supports better coordination and follow up for childhood vaccinations)	Proven effectiveness means increased likelihood of positive outcomes including better resource allocation/ cost-efficiency, evidence-based practice, improved efficiency, and patient outcomes.	✓			
Central repository of health information and local service providers/ programs	Local, timely, coordinated, and appropriate care that supports the interconnected issues of health and social support.		✓	✓	
Focused attention on referral pathways at transition points e.g., where can a service send a child who has aged out of 0-12 age bracket.	Improved continuation of care and prevention of unnecessary delays.	✓			
Dedicated hospital discharge team to provide patient follow-up (with certain risk factors e.g., multiple co-morbidities)	May identify (and collect data on) premature patient discharge and reduce hospital readmissions			✓	
The extension of hospital in-reach and Hospital in the Home (HITH) services must include input from GPs and nurses experienced in community health.	Consulting with GPs and community health services will help provide insights that lead to development of holistic and more effective services.			✓	

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
Improve quality of discharge summaries from hospital / and referrals to hospital (e.g., use existing examples that are successful RWH), templates, Health Pathways to standardise care	Drawing on successful examples like RWH and implementing/using templates improves/standardised processes to improve patient care and health outcomes, improve transition of care and promote streamlined sharing of patient information across different health providers.			✓	
Program/ service flexibility					
Out of hours support (health information and/or services) e.g., SURC	Can reduce ER presentations/burden by a) providing individuals with information/guidance on if their condition can be managed by other services or support			✓	✓
Services that can be delivered virtually/use social media	Improves access to individuals regardless of location, improves convenience (especially for people with caretaking roles, community commitments) and allows for flexibility.		✓		
Cross-sector cooperation					
Government and PHNs focus on a consistent approach across regions and regions as health providers often span multiple regions and regions.	Consistent and shared approach will help reduce fragmentation in healthcare delivery/ gaps in services (or overlaps/duplication of effort)		✓		
Health services can and should work with education providers to ensure better understanding of health issues and in turn better support for children and young people.	Better aligned organisational strategies/ approaches and utilisation of community resources	✓			
Funding of services for LGBTQIA++ health, Aboriginal health, CALD health is currently siloed. This does not consider the intersections of people's identities.	Intersectional funding supports the development of culturally competent care and services respond to the unique needs of marginalised populations. Reduces/minimises harm including discrimination.	Aboriginal and Torres Strait Islander people, LGBTIQIA+, CALD communities across all cohorts			
Research, monitoring and evaluation					
Poor data collection and biased research impact women's/ marginalised and LGBTQIA+ people's outcomes and access to services, highlighting the need for improved data collection and evaluation to inform policy interventions.	Improving data collection and research rigour (female participants/ female focused research in health issues) will help to ensure that experiences, needs and challenges of women, marginalised groups and LGBTQIA++ individuals are accurately represented, promoting equity in policy development and reduce health disparities/ improved health outcomes.		✓		

Policy and environment level

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
Funding					
Increase current patient rebates (for EPC referrals) from 5 to 10 subsidised sessions for older adults with complex multi-morbidities	Increase access to timely, community health care for older adults with complex morbidities require greater no of sessions and financially vulnerable.			✓	
Fund pharmacy costs for asylum seekers who do not have access to Medicare, or provision of access to Medicare.	Free access to Medicare/ pharmacy costs is important for providing equitable access to health care regardless of their situation/legal status and reducing/preventing disease progression and supporting overall health and wellbeing.		✓		
Fund of vaccination "catch up" programs to address vaccination gaps and enable early intervention for other health needs	Helps ensure that children (particularly those who may have missed vaccinations due to financial or access barriers), receive equitable access to essential preventative measures.	✓			
Government funding of dental vouchers enables the public dental system to provide eligible people with access to timely, appropriate care through the private dental system.	Supports equitable access to oral hygiene/dental care reduced wait times (and therefore disease progression) and reduced ED visits.		✓		
Fund longer GP consultations to improve time and quality to assess complex / co-morbidities or psychosocial issues and provide holistic care	Allows GPs to provide a comprehensive / holistic assessment (important for increasing complexity of cases, comorbidities, and psychosocial issues) and allow for more effective management and care plans. Will provide increased GP satisfaction to be able to provide quality patient care.		✓	✓	
Expand hospital in-reach / HITH services to include GPs and nurses trained/ experienced in community health	Receiving care at home through HITH services can be more convenient and comfortable for patients (especially elderly patients, patients with mobility issues or don't have good social networks) – can improve experience and enable timely care.			✓	
Funding of assertive outreach programs	More likely to engage people who are vulnerable or experiencing marginalisation or who may be unable to navigate/ engage health system or don't have social supports due to language, homelessness, who are from low SES, women with a disability, Aboriginal and Torres Strait Islander.		✓		
Incentivise more registrars to enter general practice, ensuring they are skilled and able to communicate effectively and understand	Help to address the workforce issues in primary care /improve access to GPs.			✓	

SEM level /Area(s) for opportunity	Perceived community benefit	Children 0 - 9	Women 20 - 39	Older adults 65 +	People living with cancer
that older people have lots of needs.					
Increase funding for preventative care.	Increased funding for preventative care (e.g., Quit line, bowel cancer and cervical cancer screening, healthy eating and physical activity) can reduce pressure on health care system by preventing hospitalisations through preventing/ reducing cancers and smoking-related illnesses saving costs to the healthcare system.				✓
Policy/legislation					
Set a minimum nurse-to-patient ratio in aged care with better funding / minimum requirements for more experienced nurses & supervision of junior nurses	Improve quality of care in aged care settings and a more efficient, safer and patient-centered health care system. Also, likely to reduce economic costs by reducing hospital admissions/ readmissions and complications due to better preventative care.			✓	
Nurses underutilised – MBS to reflect nurse-led procedures	Reflecting nurse-led procedures in the MBS perceived to offer numerous benefits by GPs, community health providers including improved access to integrated and coordinated care models, improving patient education, leveraging nurse skills/expertise to address complexity of care. Updating nurse-led procedures recognises the role/ skills nurse's play.		✓	✓	
Health promotion and advocacy	Improve sociocultural attitudes, beliefs, and behaviours.		✓		
Health promotion campaigns (at all levels) to target homophobia/transphobia, gender inequality, racism, and other forms of discrimination	Explicit identification of LGBTQIA++ people as a focus cohort in legislation has had a positive impact on the quality improvement of aged care services.		✓	✓