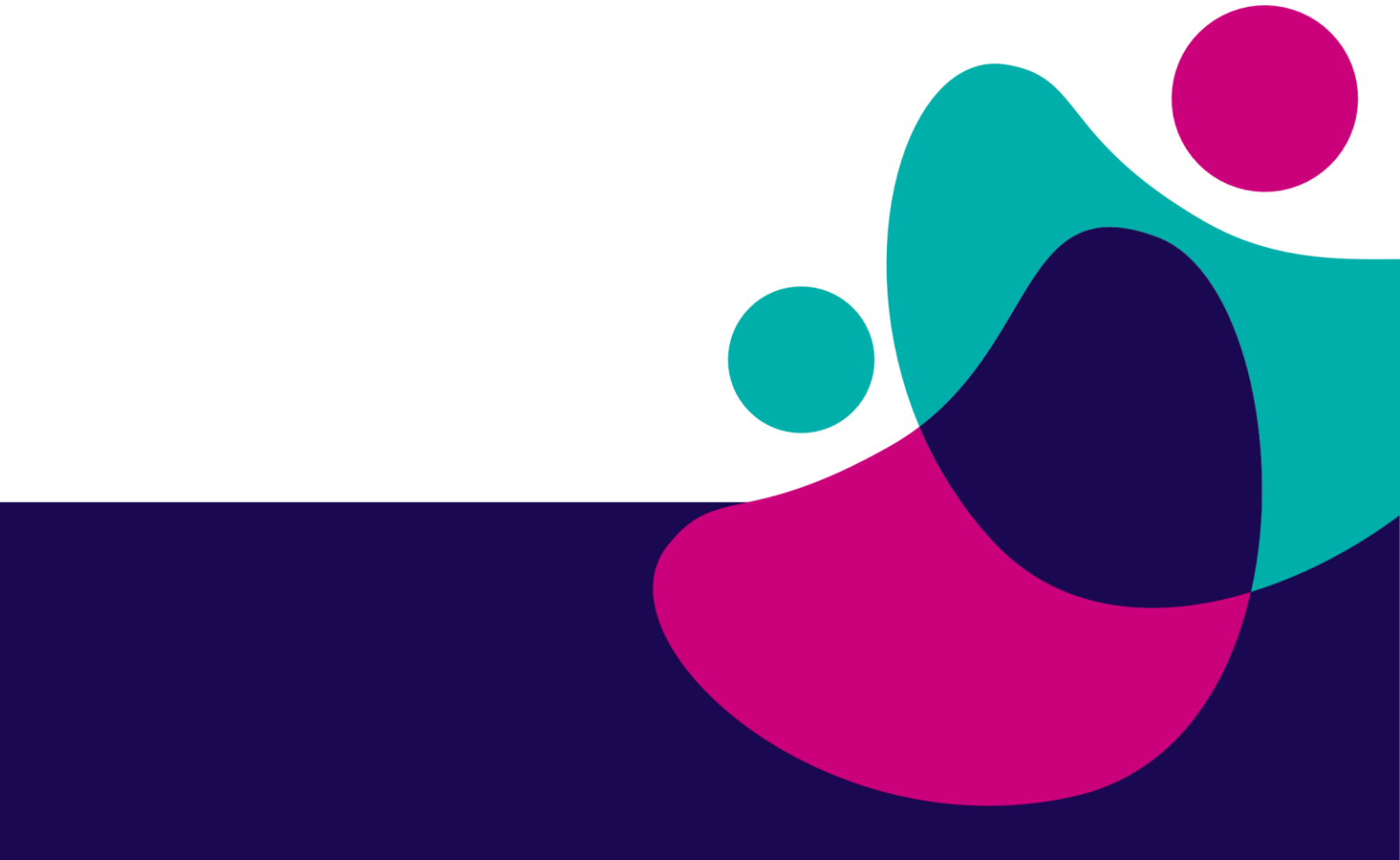
Western Public Health Unit Population Health Catchment Plan

24 July 2023



Acknowledgement

Western Health acknowledges the Traditional Custodians of the land on which our sites stand, the Wurundjeri Woi-Wurrung, Boon Wurrung and Bunurong peoples of the greater Kulin Nation. We pay respects to Elders past, present and emerging. We are committed to the healing of country, working towards equity in health outcomes, and the ongoing journey of reconciliation.

Western Health is committed to respectfully listening and learning from Aboriginal and/or Torres Strait Islander people and wholeheartedly supports their journey to self-determination.

Photo: Maribyrnong mural at Braybrook Community Hub

We would like to thank all contributors for their valuable input into the *Western Public Health Unit (WPHU) Population Health Catchment Plan*, acknowledging the contributions of all partners within the 8 local government areas (LGAs) within the catchment – Brimbank, Hobsons Bay, Maribyrnong, Melbourne, Melton, Merri-bek, Moonee Valley and Wyndham.

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Executive summary

The *Western Public Health Unit (WPHU) Population Health Catchment Plan* (the catchment plan) sets out the health priority areas and proposed actions for place-based population health promotion in the catchment for the next 6 years. Informed by a comprehensive and consultative health needs assessment, the catchment plan sets out our commitment to working in partnership with 8 local government areas and all local partners to improve the health and wellbeing of our community.

Our approach

Our approach to improving population health considers the wider determinants of health with an explicit health equity focus. Guided by the WPHU strategic aims (Figure 1) and consistent with the Victorian Government's public health vision to 'make Victorians the healthiest people in the world', WPHU will begin with a focus on primary prevention and commit to addressing health inequalities by developing an in-depth understanding of our community and the health challenges they face. We aim to build on the strengths of existing systems in our catchment to make the everyday environments in which we live, work, play and study, the healthiest they can be. Our approach is based on systems change, collective impact and value-based methodology and will deliver evidence-based interventions to the catchment. We are guided by partner and community consultations combined with extensive analysis of data from our own local populations.

Figure 1: Western Public Health Unit strategic aims

Our population

Characterised by its growth corridors and high birth rates, the WPHU catchment is home to many families with young children and youth from diverse cultural backgrounds, with a large proportion of the community speaking a language other than English at home (44.8%). Across the WPHU catchment, we have strong and thriving Aboriginal and Torres Strait Islander communities. Additionally, communities in WPHU are also socio-economically disadvantaged relative to Victoria and Australia, owing to lower income, lower levels of education or lower skilled occupations. Geography and land use within the catchment also pose challenges that affect health, with large industrial areas offset by only small areas of parkland in some regions.

Of significant concern in our catchment is the clear identification of high levels of avoidable chronic conditions such as coronary heart disease, diabetes, dental caries and cancers, and associated higher rates of premature mortality, as well as low rates of participation in cancer screening programs.

Photo: Werribee Park, Wyndham

Our focus areas

WPHU is required to target at least 2 focus areas of action drawn from the *Victorian public health and wellbeing plan 2019–2023*, as a first phase. WPHU acknowledges the breadth of significant health issues facing our catchment. After engaging in consultations with stakeholders and conducting a needs assessment and thorough data analysis, it was evident the following 3 priority areas held greatest potential for initial action:

- Improving healthier eating and food systems (healthier eating and food systems)
- Reducing vaping and tobacco-related harm (vaping and tobacco)
- Tackling climate change and its impact on health (climate change and health).

We have also proactively adopted a co-benefits approach that attributes benefit to mental health if these areas are addressed. We will additionally explore opportunities to increase participation in cancer screening programs.

Addressing risk factors early and reducing health inequities

WPHU is committed to achieving the best value for primary prevention efforts and resources, to reduce health disparities, and promote cost-effective strategies for chronic disease prevention. Addressing risk factors early in life in children and young people will maximise the potential for long-term health benefits over the life course. In addition, we will make sure consideration is given to economic disadvantage, gender equity, and cultural and diverse populations to ensure actions taken are inclusive and will reduce disadvantage and stigma.

Amplifying and innovating

We will work strategically with our local partners to leverage existing opportunities to promote, amplify and embed existing state-wide interventions into LGAs and community health practices and systems such as the INFANT program, and Cancer Council Victoria's vaping resources. We will also work to innovate and value-add through the co-design, implementation, scale-up and adaptation of initiatives to meet the targeted needs of our population.

Working in partnership

With a collective impact model, we will bring partners and other service providers together to align inter-organisational resources, skills and knowledge for the achievement of catchment priorities. Alignment and coordination will be supported through a formalised partnership structure – the WPHU Population and Preventive Health Network (the network). The network will be composed of a population and preventive health reference committee (PPHRC) and 3 action groups dedicated to the initial health priorities. The action groups will be open to all catchment stakeholders and will provide a dedicated space to share insights and evidence-based initiatives, co-design interventions and boost collective action across the catchment.

Evaluating impact

Each initiative, intervention and action led by WPHU will be monitored and evaluated using short-term (<12 months) and long-term (>12 months) outcome indicators. Short-term outcome indicators encompass areas such as capacity building, stakeholder engagement, implementation, innovation and community awareness, and will be applied across priority areas where relevant. Long-term outcome indicators have been identified specific to each priority area, and are guided by the *Victorian public health and wellbeing outcomes framework*[1]. We will identify relevant short and long-term indicators for each initiative at the planning stage. Our approach to evaluation is value-based with a focus on health equity. We aim to put an economic value on chronic health conditions avoided using data from our own catchment.

We look forward to our ongoing work with our partners and community in strengthening and building systems to tackle chronic disease prevention and contribute to healthier and more resilient communities in our catchment.

Photo: Yarra River, Melbourne

Section 1: Introduction

Western Public Health Unit (WPHU) would like to thank all local government areas (LGAs), community health services, regional and state stakeholders, and communities for their support in the development of this plan.

The *WPHU Population Health Catchment Plan* (the catchment plan) combines genuine local data and insights from our partners with a health equity focus that will help us understand the health needs of our community. It takes account of wider determinants of health and identifies priorities for place-based population health promotion and primary prevention in our catchment.

The catchment plan is a living document that will be updated every 2 years, working towards a 6-year plan. We recognise the importance of listening throughout that period to the 'hidden voices' of people in our community – those who are not usually represented in traditional data surveys – and will therefore identify new and emerging insights and weave these into the implementation of the catchment plan as they appear.

The catchment plan has been developed to meet the requirements of the Victorian Government's *LPHU Population Health Catchment Planning Framework*[2] and sets out the outcomes to measure our progress towards improving the health and wellbeing of our people and enhancing the environments where they live, work, study and play.

The introduction and embedding of a primary prevention function into Victoria's Local Public Health Units (LPHUs) represents an extraordinary opportunity to **support the public health vision that Victorians are the healthiest people in the world.** Boosting primary prevention is an approach that aims to 'keep people well' and prevents the development of avoidable chronic diseases.

We will provide a dedicated space and focus on improving primary prevention within the catchment, guided by both the *Victorian public health and wellbeing plan (VPHWP) 2019–2023*[3] and the *Victorian cancer plan (VCP) 2020–2024*[4].

The *VPHWP is* 'the primary mechanism through which we work to achieve our vision of all Victorians enjoying the highest attainable standards of health, wellbeing and participation at every age.' The plan identifies 10 priorities and 4 focus areas (Figure 2). Through a comprehensive health needs assessment and community consultation, LPHUs are required to target at least 2 of these focus areas of action as the first part of the prevention coordination journey.

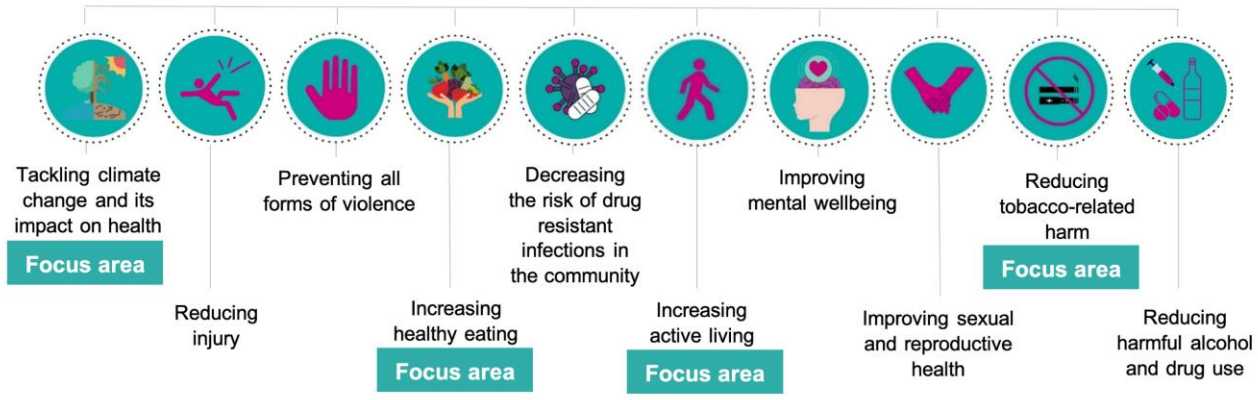

Figure 2: *Victorian public health and wellbeing plan 2019–2023* priority and focus areas

For our catchment, 3 health priorities have been selected for the first phase of action over the first 2 years and planning for the following 4 years. The 3 health priorities are to:

- improve healthier eating and food systems (healthier eating and food systems)
- reduce vaping and tobacco-related harm (vaping and tobacco)
- tackle climate change and its impact on health (climate and health).

The priorities are directly connected to avoidable chronic diseases, have the least activity in the catchment and are well suited to a focus on primary prevention. Further detail about the priority selection process will be outlined in Section 4: Health needs assessment. It is acknowledged there are other significant health issues in the catchment and these will be prioritised for action based on available resources and interventions.

WPHU: One of 9 LPHUs

LPHUs were established as a decentralised approach towards contact tracing and management of COVID-19. In July 2020, 6 regional LPHUs were established, followed by an additional 3 metropolitan units in October 2020. The metropolitan LPHUs include WPHU, South East Public Health Unit (SEPHU) and North Eastern Public Health Unit (NEPHU) (Figure 3). From July 2022, LPHU functions were expanded outside of COVID-19 management to include additional health protection and health promotion functions.

Figure 3: Victorian Local Public Health Units

WPHU's catchment is in the central, western and northern areas of metropolitan Melbourne and includes a population of almost 1.3 million comprised of the LGAs of Brimbank, Hobsons Bay, Maribyrnong, Melbourne, Melton, Merri-bek, Moonee Valley and Wyndham (Figure 4).

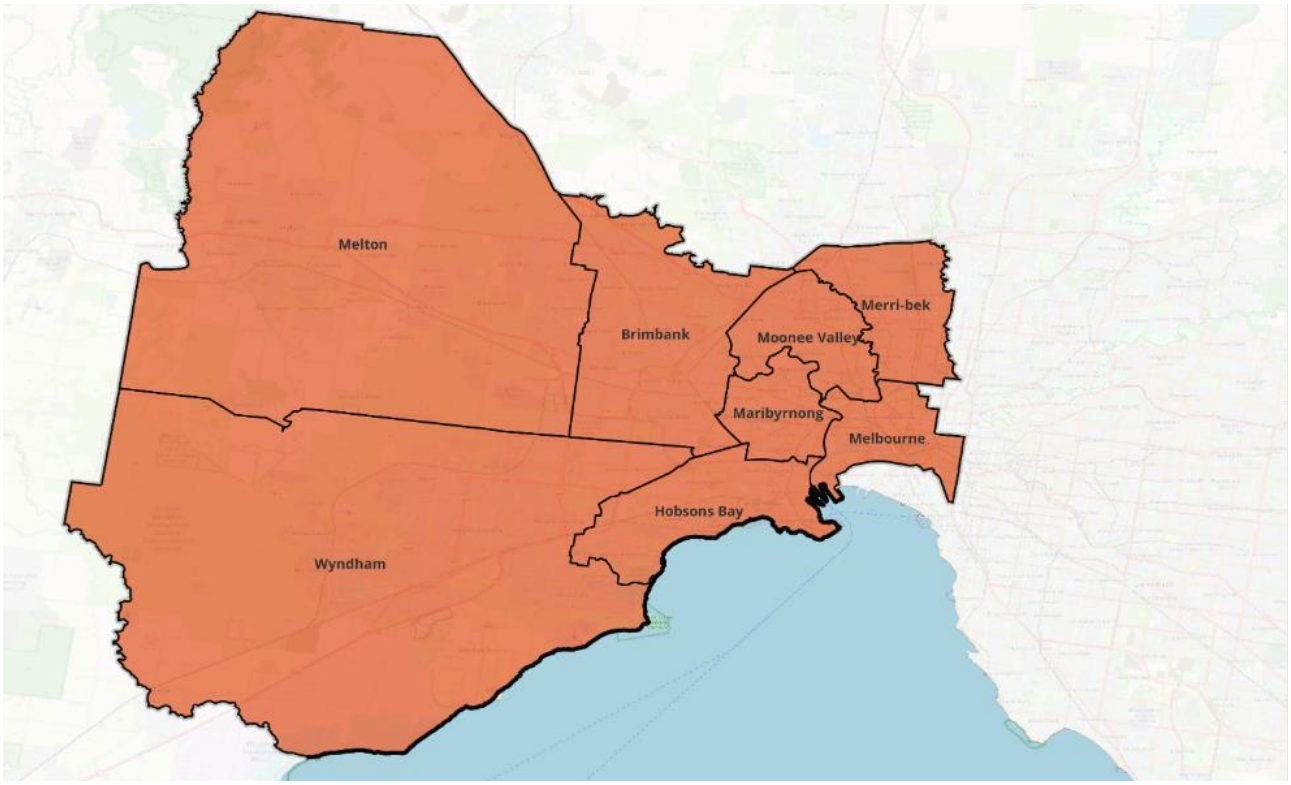

Figure 4: LGAs within WPHU

Structure of WPHU teams and resources

WPHU comprises a multidisciplinary team with expertise in public health medicine, data, epidemiology and surveillance, infection prevention, population health promotion, and community engagement. We operate as an integrated and responsive unit, considering broad public health perspectives and delivering evidence-based advice to meet the needs of our community.

Photo: Western Public Health Unit staff involved in the 2023 WPHU Population Health Promotion and Planning Forum

Photo: 2023 WPHU Population Health Promotion and Planning Forum

Section 2: Partnerships and the WPHU Population and Preventive Health Network

Local stakeholders

The 8 LGAs within the WPHU catchment are important partners and stakeholders. Additional stakeholders include 4 community health services, 3 health services and 3 specialty hospitals, Aboriginal Community-Controlled Organisations, Aboriginal health services, primary health networks, the Victorian Department of Health, cultural, charitable and social services, gender and equity organisations, health promoting organisations, key state partners, research groups, and community groups such as faith-based groups. A list of some of the WPHU stakeholders are supplied in Appendix A Table 1.

We welcome new partners who are interested in working with us to tackle chronic disease prevention in the catchment.

Creating a formal partnership structure

The WPHU Population and Preventive Health Network (the network) will be composed of a population and preventive health reference committee (PPHRC) and action groups to serve complementary functions (Figure 5). The new PPHRC has been established via an expression of interest process. Members include representatives from our local stakeholders, and other representatives such as academics, systems leaders and peak public health bodies will be invited as required. The PPHRC will provide strategic input into WPHU activities and direction in line with current and future catchment plans.

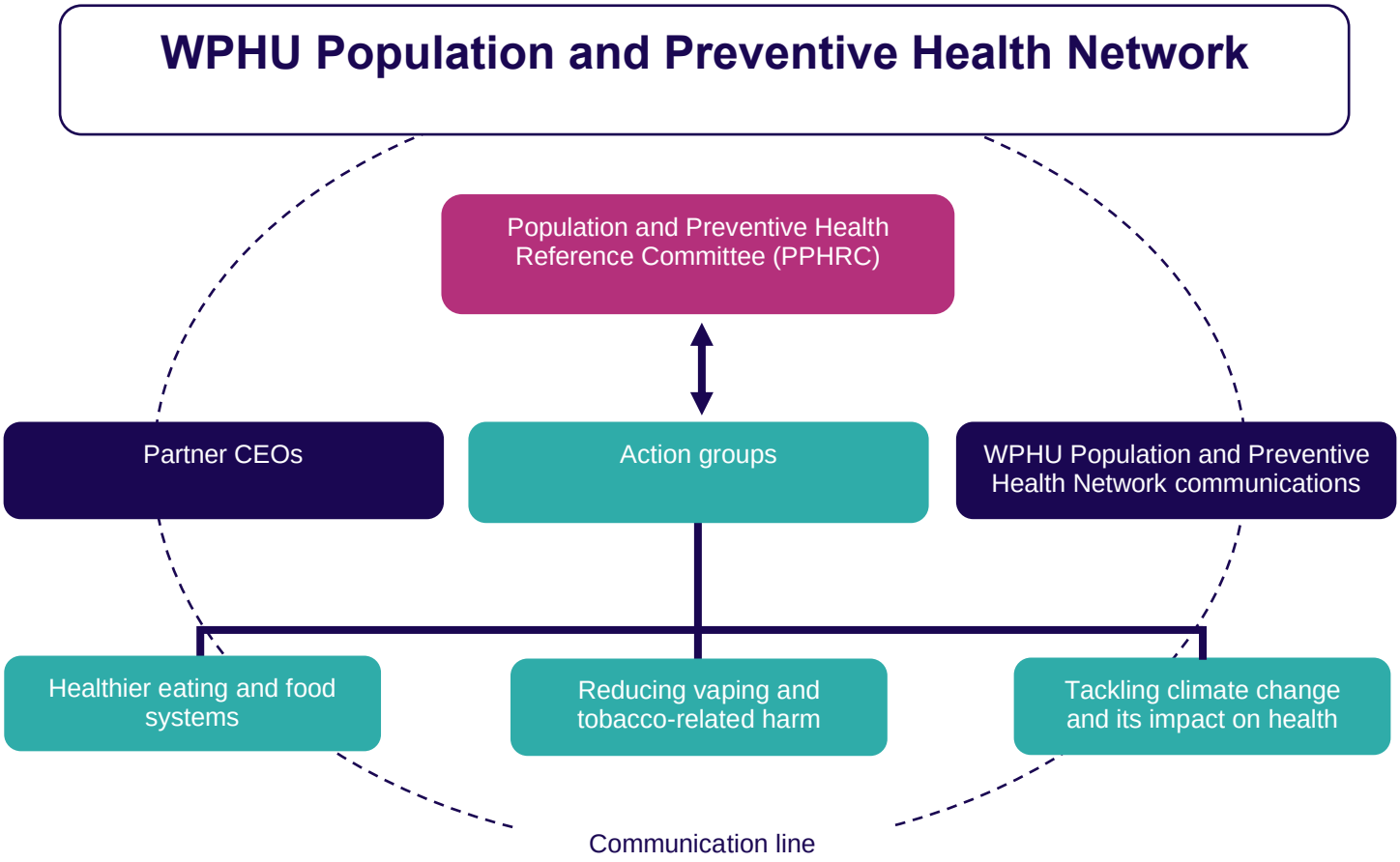

Figure 5: Formal partnership structure of the WPHU Population and Preventive Health Network

To accelerate progress, 3 action groups have been established within the network. The groups will be open to all catchment stakeholders and dedicated to the initial health priorities. Each action group will provide a dedicated space to share insights and evidence-based initiatives, co-design interventions and boost collective action across the catchment. They will also identify opportunities for advocacy and consistent approaches, minimise duplication, and work towards systems change. The network was formally announced on 30 March 2023 at the WPHU Population Health Promotion and Planning Forum.

Photo: Participants at the WPHU Population Health Promotion and Planning Forum.

Collective impact approach

WPHU continues to bring partners and service providers together to align inter-organisational resources, skills and knowledge for the achievement of catchment priorities based on a collective impact model[5] (Figure 6). Through the establishment of a formalised partnership structure, including the PPHRC and the network, we will achieve catchment priorities by operationalising each of the 5 pillars in the collective impact model; the agreement of a common agenda, shared measurement, delivering mutually reinforcing activities, continuous communication, and providing backbone support to align and coordinate the work of the catchment.

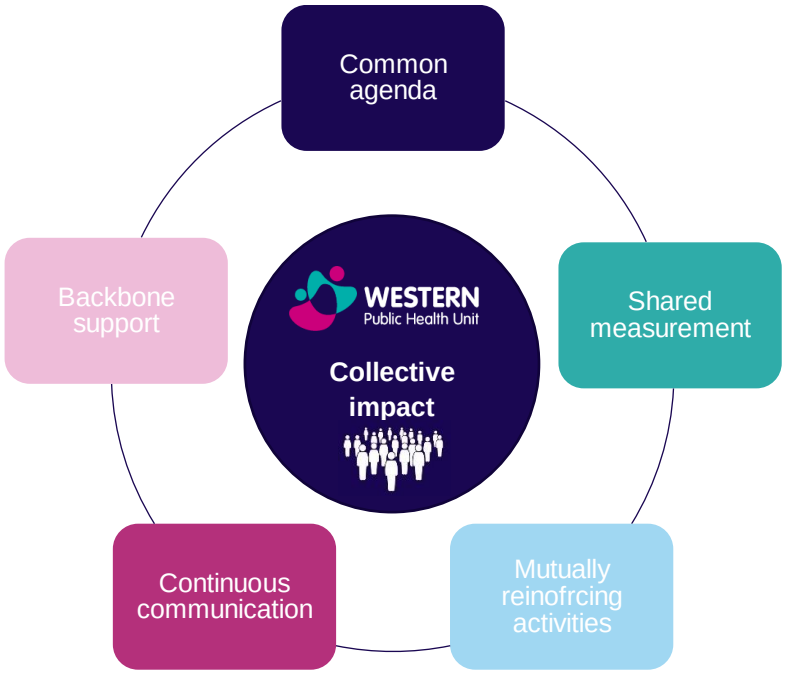

Figure 6: WPHU's collective impact model

Photo: Queens Park, Moonee Valley

Section 3: Chronic disease prevention and keeping people well

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Almost half of all Australians have one or more chronic conditions such as diabetes, cancer and cardiovascular disease[6]. Chronic diseases cause 85% of Australia and New Zealand's burden of disease[7] and cost Australia more than $100 billion per year in healthcare and human costs[6,7].

The burden of chronic disease falls heaviest on the most disadvantaged populations – who are twice as likely to have 2 or more chronic conditions[8]. A significant proportion (38%) of chronic disease burden is caused by modifiable risk factors such as inadequate nutrition, smoking, obesity and overweight, or social isolation[8]. There are substantial opportunities to reduce the prevalence and impact of chronic diseases by directly targeting modifiable risk factors. These risk factors are the focus of the *VPHWP 2019–2023* and will be the focus of work in the WPHU catchment. In Section 4: Health needs assessment, we will discuss how modifiable risk factors and morbidity from chronic diseases are at very high levels within our catchment.

Health gains to be made from targeting modifiable risk factors

Inadequate nutrition alone contributes to 49 preventable chronic health conditions including diabetes, cardiovascular disease and cancers[9]. Dietary risks contribute to 32.3% of deaths from cardiovascular disease in Australia[10] and diets that are high in ultra-processed foods have been associated with depression[11].

Tobacco is a re-emerging population health issue. While smoking rates have reduced substantially in recent decades, growth in e-cigarette use presents an emerging and significant challenge, particularly among adolescents and young people[12]. One vape has the equivalent nicotine level of 20 cigarettes[13], and exposure to nicotine in teenage years can impair brain development[14]. Adolescents who vape are 3 times more likely to later take up cigarette smoking[15,16].

Finally, acting on **climate change** can lead to improved public health outcomes, such as better mental health, lower rates of cancer and obesity, fewer heat-related deaths and less cardiovascular and respiratory disease[17].

Equity approach by WPHU

WPHU takes an equity lens to chronic disease prevention by targeting priority populations to achieve equitable health outcomes. Priority population profiles may include, but are not limited to: low socio-economic status, culturally and linguistically diverse, refugee communities, children and young people, LGTBQIA+, and Aboriginal and Torres Strait Islander communities. Our catchment is home to many communities and individuals who are part of one or more of these priority population groups. Our approach is underpinned by an understanding of how the social determinants of health impact an individual's ability to support themselves and their family's health needs. We take an adaptive and responsive approach to identifying priority populations and targets for chronic disease prevention activities based on ongoing stakeholder consultations, emerging data insights and evidence-based interventions. Focusing action and resources on populations experiencing disadvantage works to close existing gaps in modifiable risk factors, avoidable chronic diseases and mortality.

Gender equality

We will continue to engage and collaborate with specialist organisations such as GenWest, as well as internal Diversity, Equity and Inclusion Teams at Western Health to ensure WPHU-led actions incorporate a gender equality lens. We will be informed by existing state-wide strategies, legislative obligations, and organisational plans to ensure that gender equality and family violence are considered with population health planning, implementation, analysis and evaluation. Drawing on the expertise of our Data, Epidemiology and Surveillance team, we will conduct appropriate analysis of health outcomes between different population groups, including by gender. We will also conduct gender impact assessments on WPHU-led actions. In addition, we have consulted with GenWest on this catchment plan and incorporated the resulting feedback.

Our approach to health and gender equality is expanded on in Section 4: Health needs assessment, and Section 6: Implementation design and coordination.

Current pressures and important considerations in 2023 for our catchment

When engaging with key partners and community organisations, WPHU acquired valuable insights into the pressures and contexts at play when identifying and implementing primary prevention approaches that are appropriate and effective for the community. The contextual themes are presented in Figure 7, and provide a deeper understanding of the prevention work. Observations from partners were brought together with existing published evidence.

Figure 7: Current pressures and important considerations in 2023 for our catchment

COVID-19 pandemic

Published literature, as well as our community and stakeholder engagements, have documented that the past 3 years of COVID-19 restrictions and uncertainty have added additional pressures for organisations and the community they serve. These pressures were not unique to our catchment; however, they are an important consideration for our population and more broadly Australia and globally. The **COVID-19 pandemic** exacerbated modifiable risk factors for chronic disease, especially among young people and women[18]. In September 2020, many young people (aged 18 to 24) reported experiencing financial hardship (30%), ran out of money to buy food (11%), and relied on unhealthy foods to meet energy intakes (29%)[19]. One in 5 survey respondents (22%) of the *VicHealth Coronavirus Victorian Wellbeing Impact Study* reported increasing smoking due to boredom, stress or anxiety, having more free time, and feeling lonely[19]. Lockdowns and social distancing measures increased sedentary behaviours, and decreased sport and physical activity – less than 40% of young people met physical activity requirements during the pandemic[19]. Online learning, which became the norm for many students, increased children's screen time and exposure to unhealthy marketing[20,21]. In addition, women were forced to make challenging decisions about their reproductive choices due to the suspension of critical appointments such as fertility treatment[22].

Cost of living

The effects of a rise in the cost of living and impacts from that rise were a common discussion point during engagements with the community and were further supported by evidence documented in published literature. The cost of living has risen significantly in the last 12 months, with the Consumer Price Index rising 7% from March 2022 to March 2023[23]. Many families are facing rising mortgage and housing costs and increases in food prices[23]. Our community has identified that the increased cost of living has resulted in housing stress and increasing food insecurity. Gambling has also been raised as an issue of concern.

Family violence

More time was spent at home during times of COVID-related restrictions and there was an increase in the number and complexity of family violence incidents and experiences[24]. This led to challenges for frontline services to provide support and as a result, longer wait times for service users[24].

Service gaps

Access to primary services across the catchment is of concern. This was highlighted during community and stakeholder engagements as well as through the health needs assessment conducted by the North Western Melbourne Primary Health Network (NWMPHN)[25]. Universal services such as maternal and child health are short-staffed, with some local governments in the catchment reporting that they are at only 55% staffing capacity. There were reported difficulties accessing allied health services, especially for young children and individuals with special needs through both community feedback as well as published literature leading to exacerbation of health conditions[25]. There were reportedly fewer GPs bulk billing in the catchment, adding to cost of

living pressures and delays in timely treatment. Some postcodes within the catchment were identified as service and public transport deserts, leading to challenges in accessing critical services[25]. Mental health has also emerged as a critical topic for action. Priority primary care centres will assist with some of the pressures and reforms of Medicare are in progress. However, the suburbs of the WPHU catchment experience disproportionately higher primary care access problems which can affect the prevention and management of chronic diseases[25].

Community needs

Access and affordability gaps present challenges for health promotion staff to maintain a focus on primary prevention work as immediate community needs required immediate prioritisation.

Photo: Sydney Road, Merri-bek

Section 4: Health needs assessment

Approach

WPHU conducted a health needs assessment guided by the *VPHWP* focus areas. We used an evidence-informed approach to assess the health needs that were considered current priorities and initiatives of LGAs, the insights from communities via a formal engagement process, as well as analysis of available local, state and national population data Figure 8. We built on existing data currently available for the catchment, both on health status and determinants of health. Our approach to analysing health inequalities at WPHU is illustrated in the Data gathering and analysis section and provides insight into further planned analysis. Details of the methodology used for each of the components of this process are described in greater detail in the following sections.

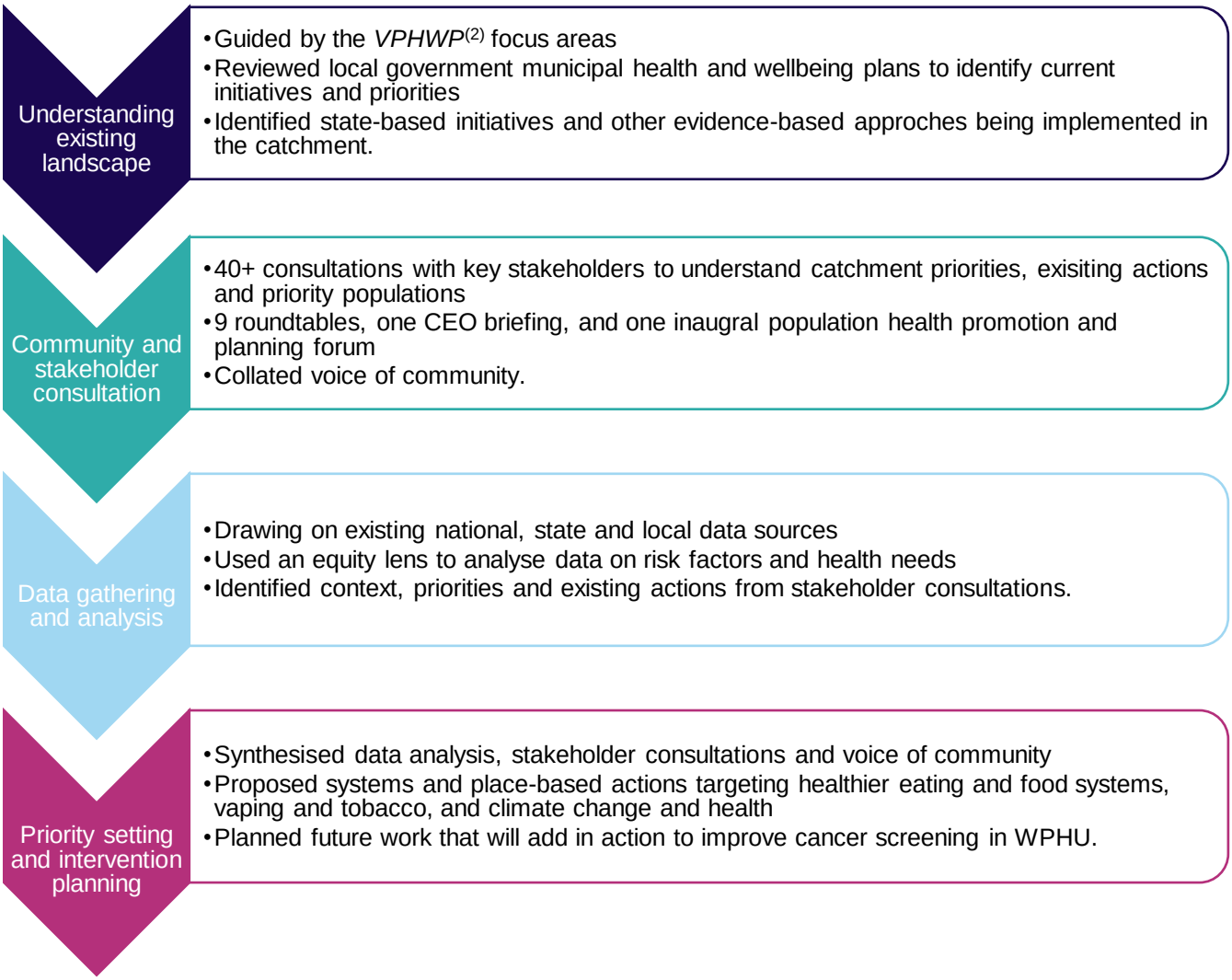

Figure 8: Methodology for undertaking a comprehensive health needs assessment in WPHU

Understanding the existing population health promotion landscape

WPHU is continuing to build an understanding of population health promotion interventions and initiatives that are being implemented within focus areas. This understanding helps to avoid duplication and amplify existing work. This is informed by:

- desktop reviews of municipal health and wellbeing plans
- ongoing consultations with stakeholders
- mapping participation in state-wide initiatives.

We plan to continue to build our understanding of current initiatives within focus areas as an ongoing endeavour, supported by local stakeholders.

Desktop review and initial consultations

We conducted stakeholder consultations and a desktop review of municipal health and wellbeing plans to understand existing interventions in the 4 focus areas of the *VPHWP*.

In addition, information was collected on activities aimed at improving mental wellbeing (a priority area in the *VPHWP*) in recognition of the significant impacts of the COVID-19 pandemic and increased concern of mental health challenges across Victoria. The interventions were then measured against the following:

1. Which *VPHWP* priorities the intervention aimed to address
2. The target population of each intervention
3. The type of intervention (i.e., program or policy)
4. Whether the intervention had been evaluated or not
5. Measured against the *Ottawa Charter for Health Promotion* priority action areas including create supportive environments, strengthen community actions, build personal skills, re-orient health services, and build healthy public policy[26].

The review found a total of 105 health promotion interventions, of which 83% addressed active living, 22% addressed mental wellbeing, 16% addressed increasing healthy eating, 7% addressed climate change and health, and 3% addressed vaping and tobacco-related harm (Figure 9). From the information available, 14% of the interventions had been evaluated. It is likely an evaluation will be planned for the future in many instances.

Details on the identified interventions are available on request by sending an email to WPHU@wh.org.au marked for the attention of the Population Health Promotion team.

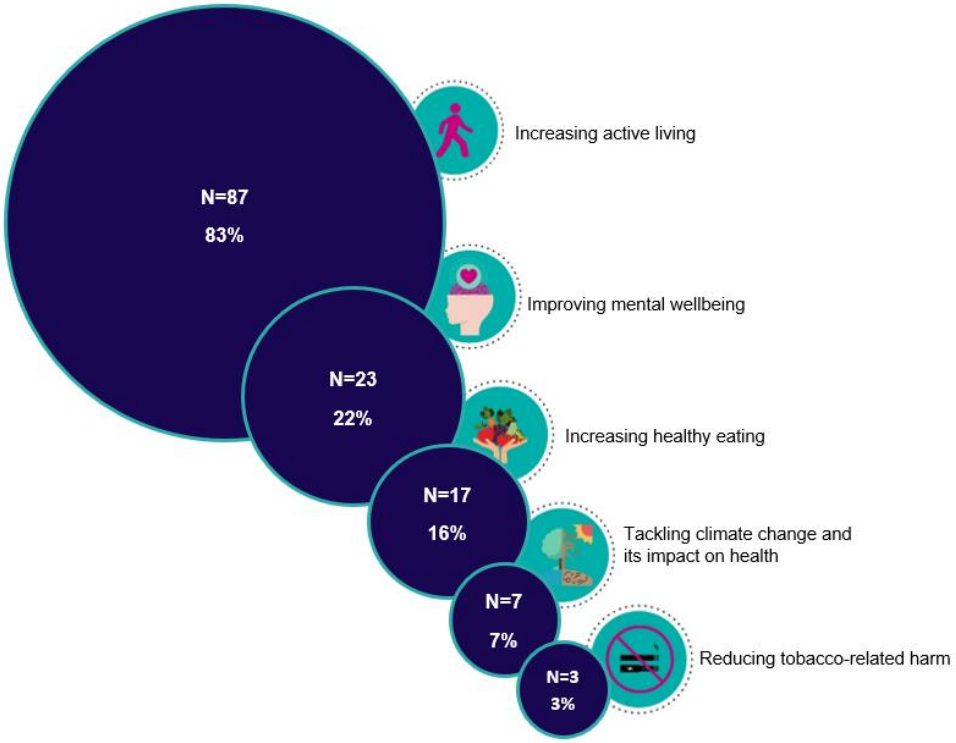

Figure 9: Proportion (%) of interventions* in the WPHU catchment targeting each priority area

*An intervention can appear in more than one category if it addresses more than one focus area.

Priorities in the catchment

We held initial consultations with the 8 LGAs and community health services to assess alignment of priority areas. Of the 8 LGAs, 7 had a focus on healthier eating and food systems, with the same number focusing on tackling the impacts of climate change on health. Six of 8 LGAs had a focus on reducing vaping and tobacco-related harm and improving mental wellbeing. All 8 LGAs identified active living as a priority. We have assessed that the substantial action already underway in active living (82.3% of local interventions) indicates a need for WPHU-supported priority action in other areas.

Identification of public health priority areas

WPHU acknowledges the breadth of significant health issues facing our catchment. After engaging in consultations with stakeholders and conducting a needs assessment and thorough data analysis, it was evident the following 3 priority areas held greatest potential for initial action:

- Improving healthier eating and food systems (healthier eating and food systems)
- Reducing vaping and tobacco-related harm (vaping and tobacco)
- Tackling climate change and its impact on health (climate change and health).

Table 1 summarises the considered factors for selection of priorities. These priorities serve as a starting point to deliver improvements in chronic disease outcomes. We have also proactively adopted a co-benefits approach that attributes benefits to mental health if these areas are addressed.

Primary prevention areas aligned with the *VPHWP*	 Healthier eating and food systems	 Vaping and tobacco	 Climate and health
Proportion of existing interventions in WPHU targeting area	16.2%	2.9%	6.7%
Number of WPHU LGAs with area as priority	7/8 (87.5%)	6/8 (75%)	6/8 (87.5%)

Table 1: Summary of considered factors to identify initial priorities

Collation of existing initiatives and participation in state prevention initiatives

Following identification of the 3 priority areas, we captured further initiatives being implemented in these areas. This additional detail will form part of the foundational work that will be part of the WPHU Population and Preventive Health Network action groups on the identified topics (see further Appendix B: Victorian Government strategies, plans and initiatives).

We also collated data on LGA participation, access to and implementation of state interventions that target modifiable risk factors for chronic disease. Data was collated on the Healthy Eating Advisory Service (HEAS), Cancer Council Victoria's Achievement Program, INFANT (INfant Feeding, Active play and NuTrition), Life!, Quitline, Smiles 4 Miles, and the Vic Kids Eat Well programs in September 2022. Participation rates provide insight into service uptake gaps, opportunities to maximise use of existing services, and enable building on existing systems to avoid duplication. While there is evidence of state-wide initiatives being used, there are opportunities for WPHU to link to and promote state-based programs across the catchment, including to improve participation rates. For example, Vic Kids Eat Well is only implemented in 8.8% of potential schools. We will support the uptake of state-wide initiatives.

Ongoing community and stakeholder consultations

Ongoing community and stakeholder engagement is fundamental for WPHU to build a strong network. Through engagement, we hear directly from the community on issues of importance, align priorities, and deepen the understanding of the expressed needs of the catchment. Insights from ongoing consultations have been used to inform priorities, actions and approaches.

"I want to tell you how really meaningful it was for us in [council] that we were heard by you [WPHU]."

Council representative, WPHU Roundtables

Bespoke roundtables

Following the identification of common priority areas through a series of bespoke roundtables, we shared with the LGAs how we can add value, gather 'on-the-ground' intelligence on needs and priorities from stakeholders with a deep understanding of the community, and collect existing 'gems of action' relating to the priority areas.

The roundtables, incorporating specific data for each LGA, were conducted by WPHU with each of the 8 LGAs and the community health services. Approximately 72 participants from 17 different external stakeholders participated. The roundtables provided us with a deeper understanding of the needs of the catchment and perspectives of important stakeholders. See Figure 10 for a summary of insights.

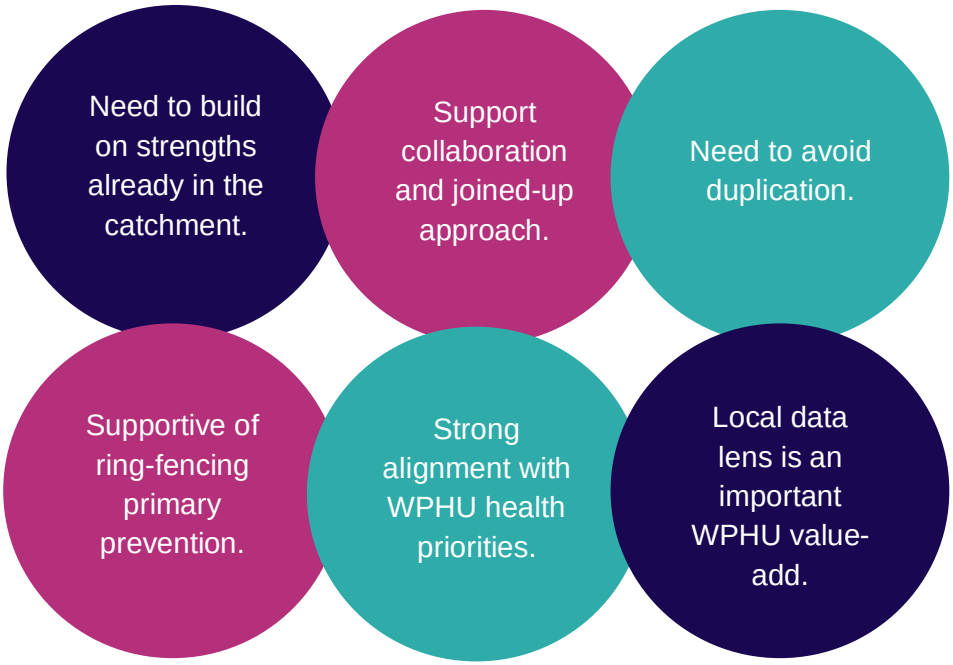

Figure 10: Summary of insights from the 9 bespoke roundtables

Following the roundtables, a catchment-wide forum was held to share and reflect on insights and learnings from partnership engagement, and to signal commencement of work on action areas together. A briefing for CEOs of the LGAs, health services and community health services was also held.

Inaugural Population Health Promotion and Planning Forum

Over 70 participants from the catchment attended the Population Health Promotion and Planning Forum (the forum). Stakeholder engagement was high. There was alignment with our approach, and enthusiasm for collective action to address chronic disease in the catchment. Participants valued our ability to deep dive into the data relevant to the catchment and connected with the examples of data analysis presented. There was keen interest to join the WPHU Population and Preventive Health Network action groups on the day with 79% of the participants signing up.

We presented collated opportunities for action within each of the 3 priority areas. Participants were invited to contribute to and identify areas of interest and where their organisation could add value. These outcomes were incorporated into the proposed actions, see Actions and interventions in Section 6. The WPHU Population and Preventive Health Network was formally launched at the forum. The outcomes of the forum have been incorporated into the priority actions developed by WPHU.

Photo: Population Health Promotion and Planning Forum

Hidden voices of our community

With the assistance of local stakeholder organisations (predominantly LGAs), we have collated surveys that highlight the priorities, concerns and needs of the local community (Table 2). In partnership with LGAs and other organisations, we will integrate results of the surveys into chronic disease prevention planning where relevant and as they emerge. Additionally, we have collected community voices through our Community Engagement team.

Capturing the hidden voices of community will be an iterative and ongoing process with new data added to the catchment plan as it becomes available. Most importantly, this emerging information will be used to inform and tailor the interventions and how they are designed and evaluated to ensure the needs and voice of all people is heard.

Organisation	Survey title
Local government areas	
Brimbank	Resilient Youth Survey*
Hobsons Bay	What Youth Want*
Maribyrnong	Annual Community Survey
Melbourne	Knowledge Bank/Neighbourhood Model*
Melbourne	Open Data Portal
Melbourne	City of Melbourne Social Indicator Survey
Melbourne	Consultation survey for Melbourne's Council Plan 2021-2025
Melton	Annual Household Survey*
Melton	Community Satisfaction Survey
Merri-bek	Community Satisfaction
Moonee Valley	Youth Survey*
Wyndham	Youth Survey
Wyndham	Population Survey
Wyndham	Community Satisfaction Survey
Community health services	
Merri Health	Needs Assessment
***Survey results are not yet publicly available**	

Table 2: Local surveys currently available within WPHU LGAs

If your organisation has surveys that will help inform our approach to chronic disease prevention in the catchment, please send them through to WPHU@wh.org.au and mark the email for the attention of the Population Health Promotion team.

Data gathering and analysis

In addition to consultation with our community stakeholders, we engaged in a comprehensive review and analysis of available data pertaining to geography, demographics, risk factors and health outcomes within our catchment. Data, sources and additional information on analysis methods used are included in Appendix C: Data and analysis.

Geography

The health of people and communities are affected by the built and natural environments in which they live. This section explores the geographic context of WPHU, the connectedness between places, and measures of access and liveability.

WPHU encompasses 8 LGAs across 1,420 km^2 in the central and western region of greater Melbourne[27]. Our catchment also includes Melbourne Airport (within the Hume LGA) due to the human biosecurity function that we provide for this important transport hub and international gateway to Victoria.

Of the metropolitan LPHUs, WPHU is the smallest geographically, but contains a wide spectrum of land types and environments (Figure 11). The catchment includes a commercial hub in the Melbourne LGA, representing 32.5% of total land within this LGA. Large industrial areas are situated in the LGAs of Wyndham, Brimbank, Hobsons Bay and Melton, while areas of relative

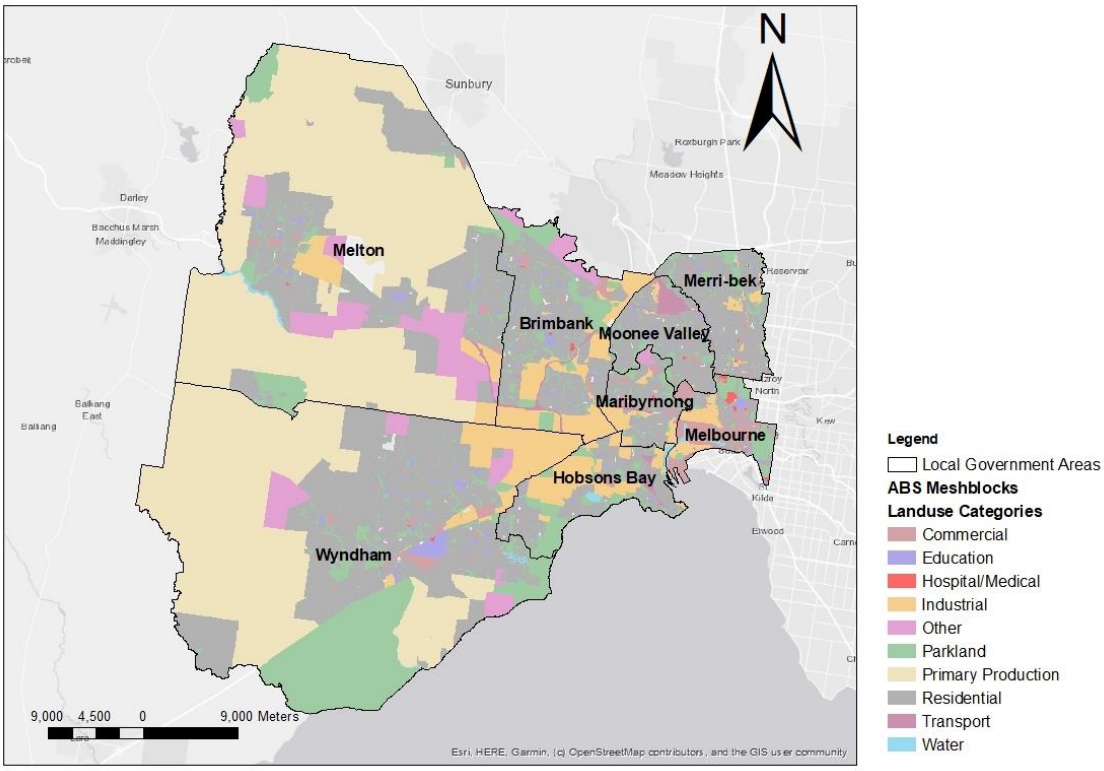

Figure 11: WPHU land type categorisation

Source: Australian Bureau of Statistics, 2021[27]

rurality are in the outer western regions of Wyndham and Melton, including 550 km^2 of primary production land area. Merri-bek and Moonee Valley consist mostly of residential zoned areas. The Maribyrnong LGA has the lowest proportional area of green space, alongside a comparatively high proportion of industrial area. The proportional land area categorisation for each WPHU LGA is shown in Figure 12. Population density within WPHU ranges from 1,548 people per km^2 in the Melton LGA to 18,187 people per km^2 in the Melbourne LGA (Appendix C Table 1 and Appendix C Figure 1).

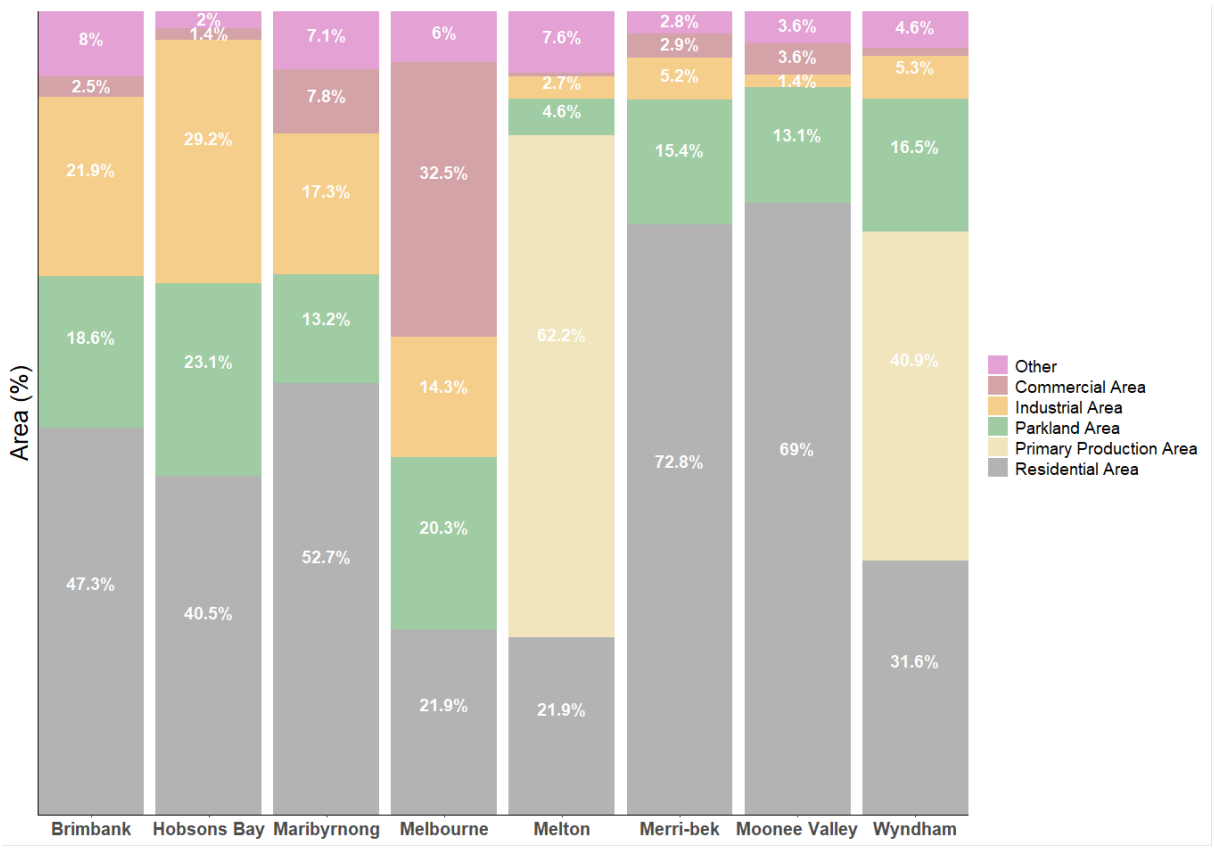

Figure 12: Proportions of land area categories by WPHU LGA

Source: Australian Bureau of Statistics. Allocation files [Internet]. Canberra: ABS; Jul 2021-Jun 2026

Demography and population: who are we?

The social determinants of health are non-medical factors that influence the health and wellbeing of people and communities. The social context in which people were born, live, work and age can shape long-term health outcomes, both positively and negatively. This section explores 'who we are' in the WPHU catchment and identifies priority populations and areas of socio-economic disadvantage.

Population

The WPHU catchment has a population of 1,284,858 people including 9,184 people who identified as Aboriginal and/or Torres Strait Islander in the 2021 Census[28]. While absolute population counts by region are an important factor to consider for determining basic per capita need, broader

measures that include elements of population growth, social context and service access must also be considered in shaping public health priorities.

Population growth

The catchment has major growth corridors. Based on estimated residential populations (ERP) from Australian Census data[28], Wyndham, Melton and Melbourne grew by 35.4%, 32.1% and 10%, respectively between 2016 and 2021. The growth in population from 2006 to 2021 for each WPHU LGA, metropolitan LPHUs and Victoria relative to their population in 2006 is shown in Figure 13. The population of Wyndham increased by a factor of almost 2.6 between 2006 and 2021, while the population of Melton increased by a factor of nearly 2.3.

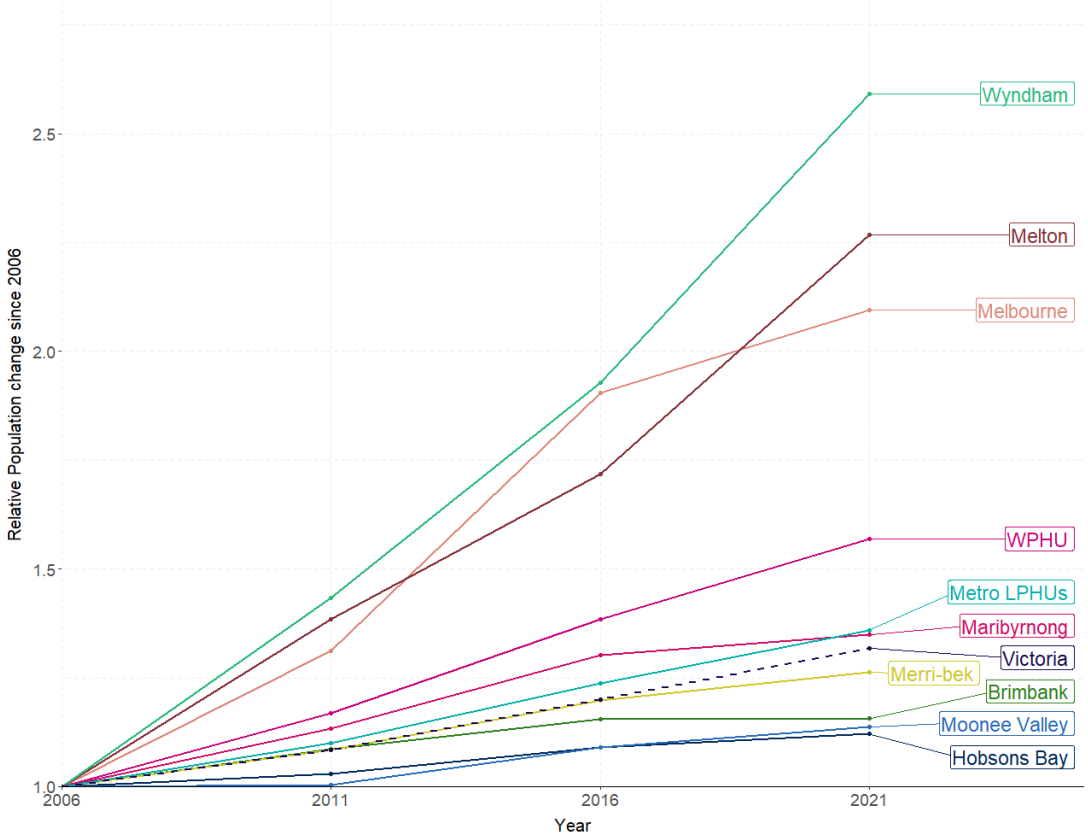

Figure 13: Relative change in population by WPHU LGA, metropolitan LPHUs and Victoria 2006–2021

Source: Australian Bureau of Statistics, Census of Population and Housing, 2021[28].

Population growth trends are expected to continue. By 2030, the population is projected to increase by 388,772 across the catchment; a 28.3% increase from 2020[25]. Of note, the greatest projected increases are in Wyndham (45% increase by 2030 which is the largest projected increase of all Victorian LGAs) and Melton (41% increase by 2030). Wyndham and Melton combined represent 50% of the projected growth in WPHU by 2030. The projected population and percent population increase for each WPHU LGA, Victoria and Greater Melbourne are shown in Appendix C Table 2.

Age and gender profiles

In 2021, 69.9% of WPHU residents were of working age (15 to 64 years)[27]. This is similar to Victoria overall (66.8%) and the combined metropolitan LPHU region (65.2%) (Appendix C Table 3). The WPHU catchment has a larger proportion of its population in the young adult (20 to 44 years) age groups than both Victoria and the metropolitan LPHUs, and a smaller proportion of older people. This is more pronounced when the catchment is compared to Victoria than the metropolitan LPHUs (Figure 14).

Only small differences are seen in proportions of gender across the catchment; Moonee Valley has a slightly greater proportion of women (51.3%), which may be due to gender differences in life expectancy alongside a slightly older population within that LGA.

Taken together, the high population growth and younger aged population seen in the WPHU catchment have significant implications for health planning and public health. Considerable opportunity exists for success in interventions that drive early, consistent reduction in risk factors for chronic disease.

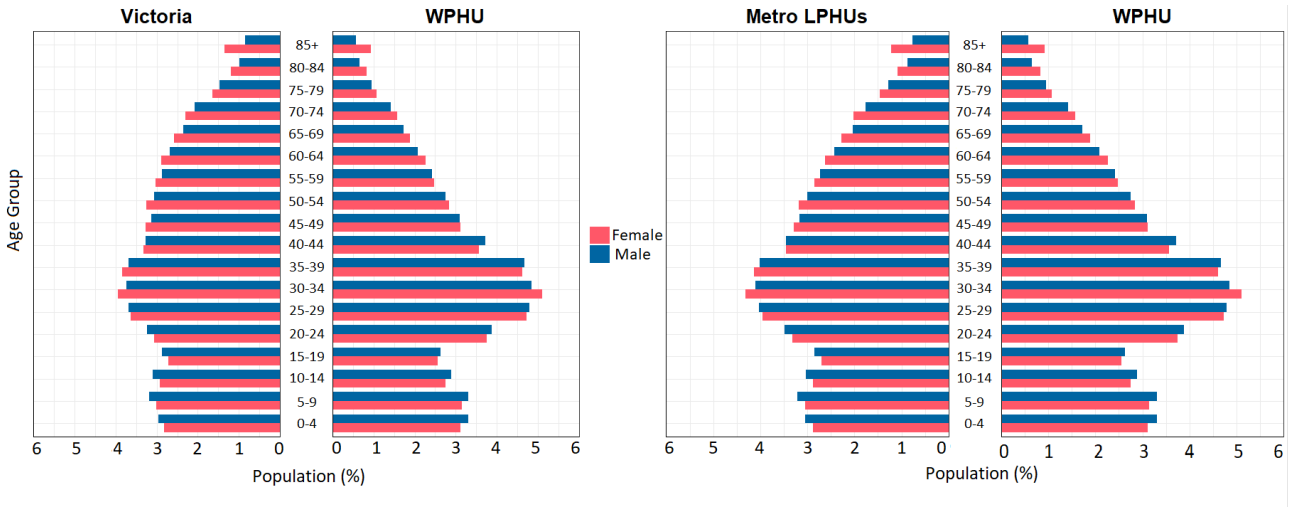

Figure 14: Comparison of estimated resident population by age group and sex for WPHU vs Victoria (left figure) and Metropolitan LPHUs (right figure)

Source: ABS Census of Population and Housing, 2021

There are notable variations in age profiles within the LGAs in the catchment. Appendix C Figure 2 illustrates the age profiles of each WPHU LGA (right side of each tile) against the overall profile of the WPHU catchment (left side of each tile). Broadly speaking, Brimbank, Hobsons Bay and Moonee Valley have an even distribution across age groups, whereas Merri-bek and to a lesser extent Melton and Wyndham, have a more typical suburban pattern with slightly higher proportions of middle-aged adults and children. Wyndham is notable for the proportion of children and young families and lower proportion of older people, whereas the City of Melbourne consists largely of young adults but very few children. There are notable differences between Melbourne, Brimbank and Moonee Valley and the overall WPHU catchment age distribution.

The age dependency ratio is the ratio of dependents (people younger than 15 or older than 64 years) to working age adults (defined as people 15 to 64 years of age) and is a useful indicator of population stresses that flow from age distribution. In our catchment, Wyndham and Melton have very high youth dependency ratios with 37.9 and 36.6 people under 15 for every 100 people of working age respectively (Appendix C Table 3). None of the WPHU LGAs have substantially higher old age dependency ratios than the Victoria average, although old age dependency ratios for Moonee Valley (25.9), Hobsons Bay (24.7) and Brimbank (24.5) are higher than metropolitan LPHUs (22.5) (Appendix C Figure 3).

Photo: Brimbank Park, Brimbank

Births

The WPHU catchment has the highest crude birth rate among all Victorian LPHUs with a 10-year average of approximately 14 live births per 1,000 people per year[29] (Appendix C Table 4). The high crude birth rate in the catchment is largely driven by 3 LGAs: Wyndham (16.3 births per 1,000), Melton (15.5 per 1,000) and Maribyrnong (13.4 per 1,000) (Appendix C Table 5). These 3 LGAs ranked first, second and sixth for crude birth rate across all Victorian LGAs.

In 2021, there were 17,000 registered births to mothers who resided in the WPHU catchment: an increase of 76 (0.45%) from 2020 and 1,730 (11.3%) from 2011 (Appendix C Table 6). Wyndham had the highest number of births, representing 28% of births within the catchment in 2021, followed by Melton (17%), Merri-bek (14%) and Brimbank (13%).

While the crude birth rate remains high relative to greater Melbourne, it decreased across all WPHU LGAs between 2011 and 2021, owing to a considerable decrease in fertility rates (the number of children born to each woman on average) over this period. Of note, 22.5% fewer births were registered in Brimbank LGA between 2011 and 2021, corresponding to a 24.5% decrease in crude birth rate.

In the WPHU catchment, there were 475 babies born to Aboriginal families between 2019 and 2021, the majority of which were born to families in Wyndham (43%), Melton (26%) and Brimbank (13.7%). Wyndham and Melton had the second and ninth highest births respectively within Aboriginal families of all LGAs across Victoria[29].

Priority populations

Inequity is felt disproportionately in populations that experience more difficulty engaging with mainstream services. This could be due to language or cultural barriers, discrimination, or lack of services in areas of socio-economic disadvantage. Here we explore available data pertaining to populations at risk of inequity within our catchment, which we have termed ‘priority populations’ for purposes of public health action.

Socio-economic disadvantage

Pockets of socio-economic disadvantage exist within all WPHU LGAs. Brimbank has the greatest proportion of residents living in suburbs categorised in the bottom 10% of the index of relative socio-economic disadvantage (IRSD) in Australia, corresponding to 40% of its total population.

IRSD combines data about the economic and social conditions of people and households within an area as a measure of relative disadvantage; a lower score indicates that an area is relatively disadvantaged compared to an area with a higher score[30].

Photo: Altona Theatre, Hobsons Bay

The population distribution by IRSD in the LGAs is illustrated in Figure 15. The x-axis of figure 15 shows the IRSD score. The height of the bars indicates the proportion of the population shown that lives in areas with the corresponding score. Areas in the bottom 10% of IRSD in Australia (those with the most disadvantage), are shown in the left shaded areas on the graph. Areas in the middle 20 to 90% of IRSD in Australia are shown in the unshaded section, and areas in the highest 10% of IRSD in Australia (those with the least disadvantage) are shown in the right shaded section.

Figure 15 shows that across Victoria, the population distribution is skewed towards the right side, corresponding to areas of less disadvantage. However, the population distribution of disadvantage varies across WPHU LGAs. Every LGA has areas with considerable socio-economic disadvantage (bars in the left side shaded areas). The suburbs (and corresponding LGAs) in the catchment that fall in the lowest 30% of IRSD scores in Victoria, including 15 in the bottom 10% are shown in Appendix C Table 7.

Compared with Victoria, the WPHU catchment has a larger proportion of its population in the lowest 10% of IRSD (10% vs 8%), as well as a lesser proportion in the top 10% of IRSD (5% vs 9%) (Figure 15).

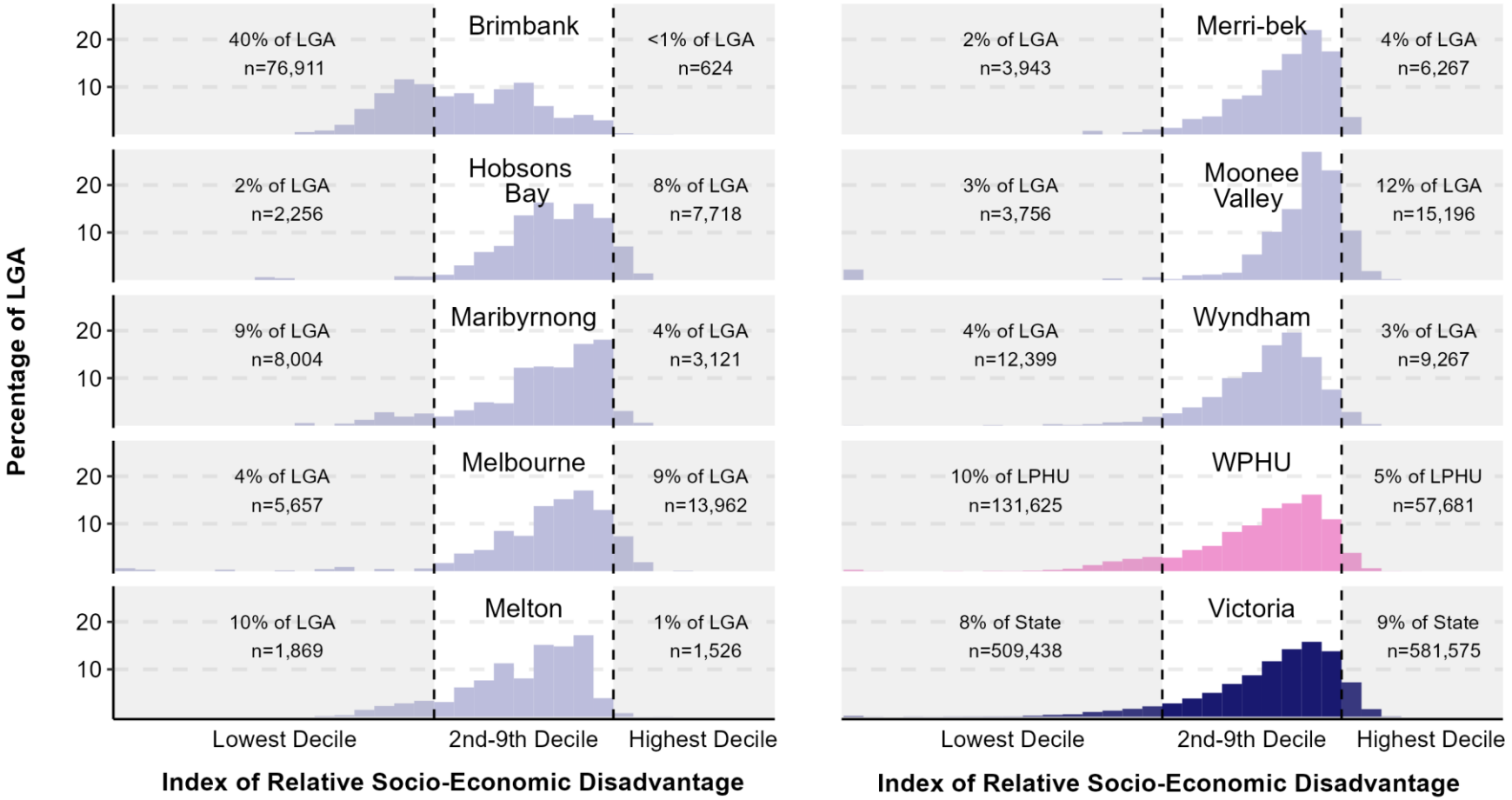

Figure 15: Proportion of population by IRSD Decile – lowest, middle 8 and highest – WPHU LGAs, all WPHU catchment and Victoria

Source: Census of Population and Housing: Socio-economic indexes for areas (SIEFA), 2021[30].

Aboriginal and Torres Strait Islander communities

The WPHU catchment has a population of 9,184 people who identified as Aboriginal and/or Torres Strait Islander in the 2021 Census[28].

Language and cultural diversity

The WPHU catchment is diverse in culture, race and language. Approximately 39% of our population were born overseas, compared to 34% within the metropolitan LPHUs overall. Excluding Australia, the top countries of birth of WPHU residents are India (7.4%), Vietnam (3.6%), China (2.6%) and New Zealand (2.0%)[28].

Additionally, 44.8% of residents within the catchment speak a language other than English at home, compared with 33% across the metropolitan LPHUs. The number of people who speak a language other than English by postcode is shown in Figure 16. Notably, Wyndham has 141,000 residents who speak a language other than English at home, representing 48.5% of Wyndham's total population and approximately 11% of the total WPHU population.

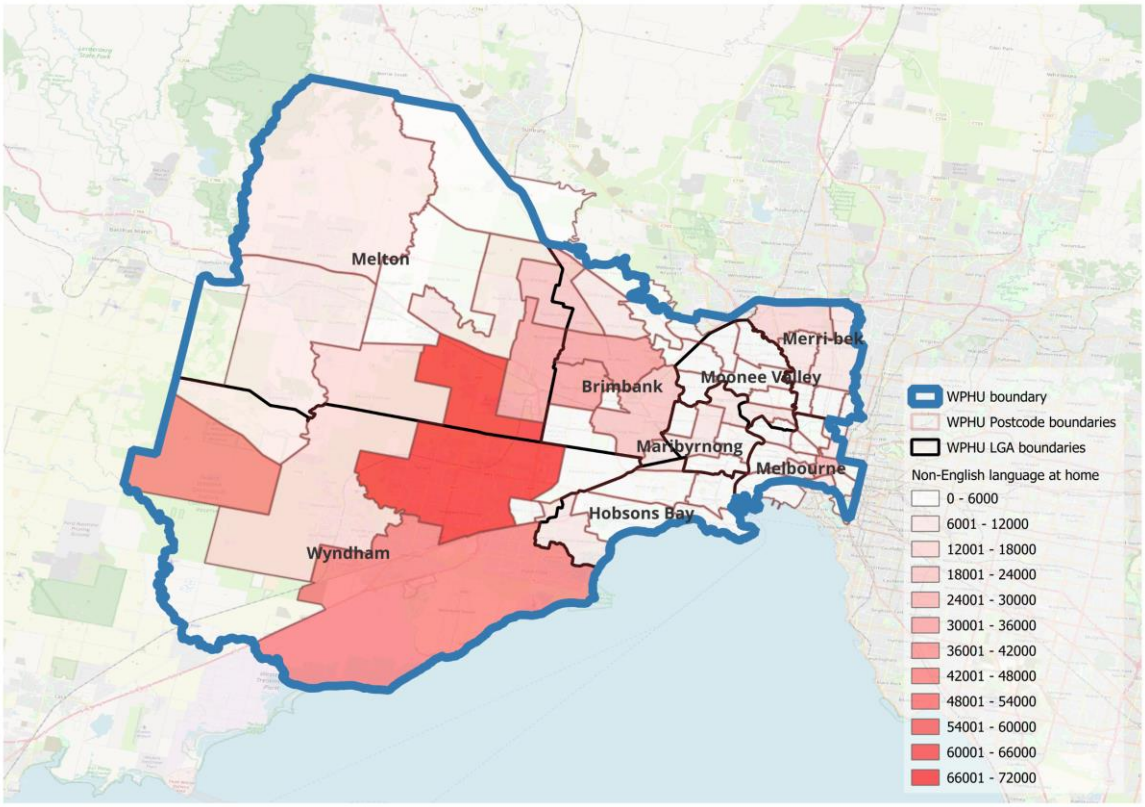

Figure 16: The population of WPHU who speak a language other than English at home by postcode
Source: Based on Australian Bureau of Statistics (2021) Census of Population and Housing[28].

The top languages other than English spoken at home within the catchment are Vietnamese, Mandarin, Punjabi, Italian, Arabic, Hindi, Greek, Cantonese and Urdu (Appendix C Table 8)[28].

There are identifiable communities within the catchment based on language spoken and country of birth. Many residents in the west of the catchment speak a language from the Indian subcontinent, across the centre of the catchment are many Vietnamese speakers and, in the eastern part of the catchment (corresponding to the city centre), there are many people who speak Mandarin.

In the 2021 census, 83,593 residents (6.5%) who spoke a language other than English at home reported speaking English 'not well' or 'not well at all (Appendix C Table 9). Brimbank has markedly more residents with low English proficiency (n=26,514, 13.6%). Of the top languages spoken, people who speak Vietnamese and Mandarin at home are least likely to report that they speak English well.

Gender diversity and sexual orientation

A report from the *2017 Victorian Population Health Survey* estimated the proportion of adults who identified as LGBTIQ+ within each LGA[31]. Of the WPHU LGAs, estimates of LGBTIQ+ populations for Melbourne (9.2%; CI 6.5–12.8) and Merri-bek (9.9%; CI 7.0–13.8) were significantly above the estimate for Victoria (5.7%; CI 5.2–61). Only 2 WPHU LGAs – Brimbank and Wyndham – were below the estimate for Victoria.

People with a disability

A total of 68,447 (5.3%) residents report living with a severe or profound disability, and 118,234 residents aged 15 years and over report providing regular assistance to someone with a disability[28] (Appendix C Table 10). The proportion of the population living with a disability are similar to Victorian rates (6.1%) in all WHPU LGAs other than Brimbank where 8.1% of the population (nearly 15,000 people) report living with a severe or profound disability (including people in supported residential facilities). The proportion of people reporting caring for someone with a disability was 12.9% state-wide and similar or lower in all WPHU LGAs other than Moonee Valley, where 14.3% of residents aged 15 years and older report caring for someone with a disability.

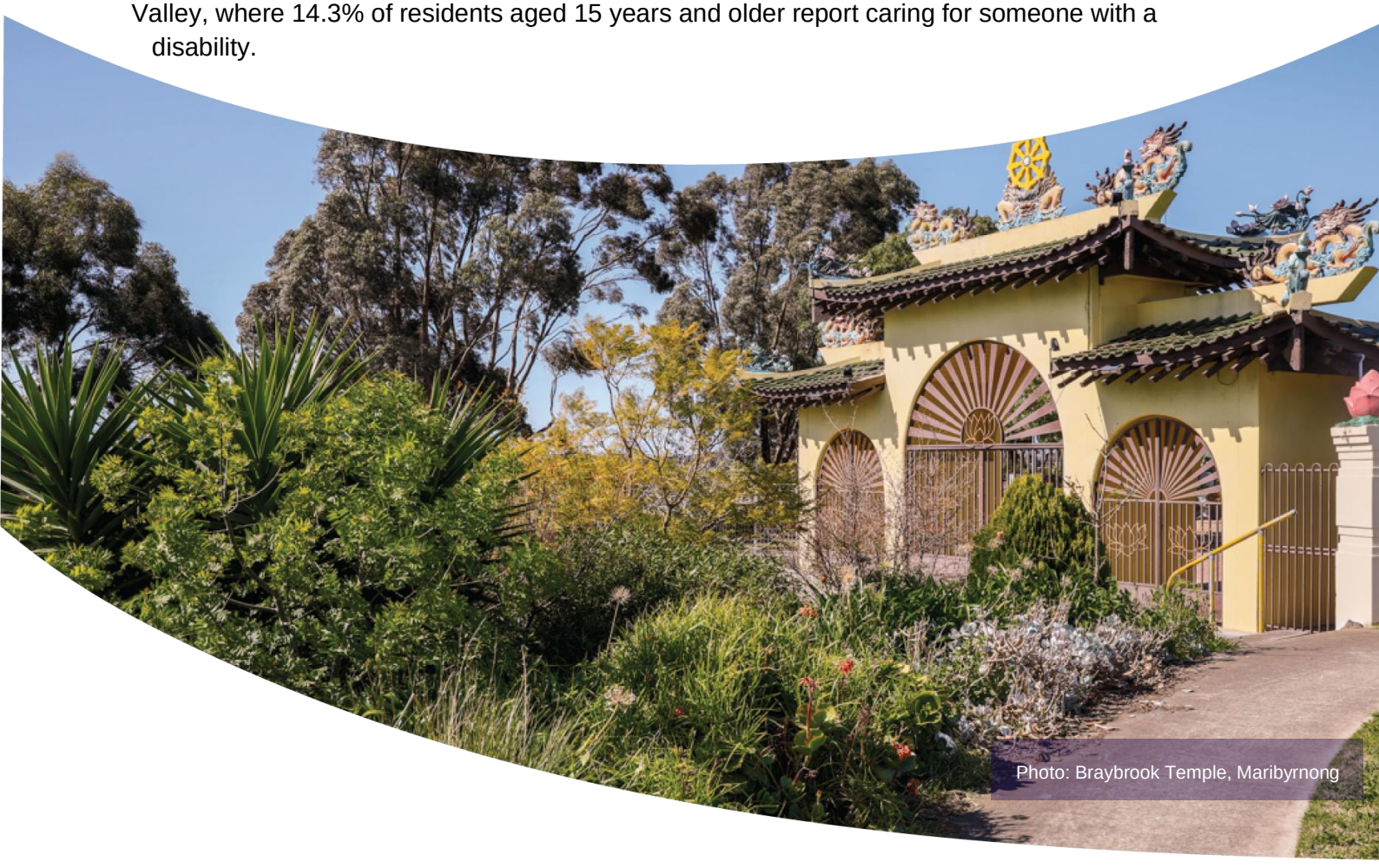

Photo: Braybrook Temple, Maribyrnong

Liveability

The liveability index combines domains of social infrastructure, walkability, public transport, public open space, housing affordability, and local employment[32]. Broadly correlating with proximity to the Melbourne city centre, the inner city and suburban LGAs of Melbourne, Maribyrnong, Hobsons Bay, Moonee Valley and Merri-bek have high liveability indices, while the growth areas of Melton, Brimbank and Wyndham have lower liveability (Appendix C Table 11). Brimbank, while classified as suburban, has a liveability index that more closely resembles growth areas. Melton, Wyndham and Brimbank are particularly disadvantaged when compared with the average scores across greater Melbourne in areas of social infrastructure, walkability, distance to nearest GP and health food stores. Maribyrnong and Melbourne have higher than average levels of housing affordability stress (15.6% and 26.1%).

We note that within an LGA there will be differences in liveability – in keeping with the distribution of socio-economic disadvantage – and that pockets of lower access to services and lower liveability are likely to be present in all WPHU LGAs.

Risk factors and protective actions: opportunities for prevention

Modifiable risk factors, such as healthy eating, physical activity, smoking, and alcohol consumption can worsen or improve health outcomes such as obesity, cardiovascular disease, cancer and diabetes. Cancer screening improves the early detection and treatment of some cancers. This section explores the prevalence of modifiable risk factors in WPHU populations.

For much of this analysis, we used the Victorian Population Health Survey. This survey is conducted at state, regional and LGA levels, collecting self-reported information about the health and wellbeing of adults aged 18 years or older. A sample size of approximately 34,000 enables estimates to be calculated for LPHUs and LGAs. Throughout this section, we report data from the survey as prevalence or percentages, though it should be noted that these are calculated estimates based on a sample of each region.

In 2020, some questions of the Victorian Population Health Survey were modified or excluded, while new measures were added to monitor the effects of the COVID-19 pandemic. Affected questions included physical activity (modified), fruit and vegetable consumption (modified), alcohol consumption (modified), sugar-sweetened beverage consumption (excluded) and snack food consumption (excluded). The most recent LGA level data directly assessing compliance with selected guidelines is presented here, using data from the *2017 Victorian Population Health Survey*.

Physical activity and nutrition

Regular physical activity and healthy nutrition are important lifestyle factors that modulate lifelong health, through the maintenance of a healthy body composition, normal growth and development and enhanced cognitive function, mobility and physical performance. Regular physical activity and optimum healthy nutrition offers protection against the development of metabolic and cardiovascular disease, including diabetes, metabolic syndrome, heart and kidney disease, as well as some forms of cancer. In Australia, guidelines for healthy eating and physical activity for adults and children are described in key documents from the Australian Government's Department of Health and Aged Care[9,33].

Results from the *2019 Victorian Population Health Survey* shows that only 50.6% of adults within the WPHU catchment (approximately 720,000 people) meet the Australian guidelines for physical activity (CI: 46.9, 54.2). The proportion of adults who meet physical activity guidelines are lower than those for Victoria overall for 5 out of 8 LGAs (Appendix C Table 12)[34]. These are Brimbank, Maribyrnong, Melbourne, Merri-bek and Wyndham that have greater proportions of the population with insufficient levels of physical activity compared with Victoria.

Within the WPHU catchment, 3.2% of adults achieve guideline recommendations for fruit and vegetable consumption (CI: 2.2, 4.7)[34]. Adults in our catchment are less likely to meet the recommendations for physical activity or nutrition, compared to the Victorian population (Appendix C Table 12 and Appendix C Table 13). An estimated 11.2% (CI: 9.7, 12.9) of people aged 18 years and over within the catchment, consume sugar-sweetened beverages (SSBs) at least once per day. Consumption of SSBs in WPHU is higher than Victoria overall and the WPHU catchment has the highest rate among metropolitan LPHUs[35].

Proportions of adults with complete sedentary behaviours are the highest in Brimbank (7.8%), Moonee Valley (4.7%), Melton (4.3%) and Wyndham (2.5%) which are all at, or worse than, Victoria overall[34]. Interestingly, Moonee Valley has both high proportions of residents meeting guidelines as well as those who are sedentary compared to Victoria overall, indicating possible 'pockets' of disadvantage within this LGA, relating to this measure.

Photo: Melton Library, Melton

Food security

Food insecurity exists 'whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable food in socially acceptable ways is limited or uncertain[36]. Evidence shows correlations between food insecurity and negative physical and mental health outcomes, including significant links to obesity[37], chronic disease[38,39] and dental caries[40]. Some populations are known to be at greater risk of experiencing food insecurity including people unable to work or who are unemployed, Aboriginal and/or Torres Strait Islander people, and low-income households[37].

In the *2020 Victorian Population Health Survey*, a measure of food insecurity was the proportion of adults who ran out of money to buy food in the last 12 months[41]. Within the WPHU catchment, approximately 6.3% (CI: 5.2, 7.5) of adults experience food insecurity measured in this way, which is marginally higher than Victoria overall (5.9%; CI: 5.4, 6.4) (Appendix C Table 14). Food insecurity is greater than Victoria in 4 of the 8 WPHU LGAs; 10% of adults in Brimbank, 8% in Maribyrnong, 7.1% in Melton and 6.7% in Moonee Valley could not afford to buy food at some point within the previous 12 months (Appendix C Table 14).

Obesity

Overweight and obesity are terms used to describe the excessive accumulation of fat within the body that presents a risk to health. Obesity and overweight has significant health implications, including increased risk of developing metabolic and cardiovascular disease[42].

The *2017 Victorian Population Health Survey* includes self-reported measures[35]. Overall, the proportion of adults who are living with overweight or obesity in the catchment is 48.9% (CI: 46.4,51.4) (Figure 17). This is lower in comparison to Victoria overall (51%; CI: 50.0, 52.0). However, there is considerable variation within the LGAs; rates of adults living with overweight or obesity range from 35.5% to 64.5% (Appendix C Table 15), with 2 LGAs – Brimbank and Melton – higher than Victoria overall. The prevalence of adults who are living with overweight or obesity is particularly high in Melton (64.5%; CI: 58.6, 70.0), where estimates are statistically significantly different from Victoria overall.

In 2017–2018, a quarter of Australian children and adolescents (aged 2 to 17 years) were living with overweight or obesity[43]. The rates of obesity and overweight are higher among Indigenous populations, with 38% of Aboriginal children and adolescents reported as living with overweight or obesity in 2018–2019[43]. While rates of obesity and overweight have plateaued in Australian children and adolescents overall since 2007–2008, rates are still increasing in Aboriginal children and adolescents, with a 6% increase between 2012–2013 and 2018–2019.

There are clear inequalities between rates of obesity across socio-economic areas, with children living in lower socio-economic areas more than twice as likely to be living with obesity than those from areas of higher socio-economic status (11% vs 4.4%)[43]. Data on childhood obesity and overweight is not currently available at an LGA level.

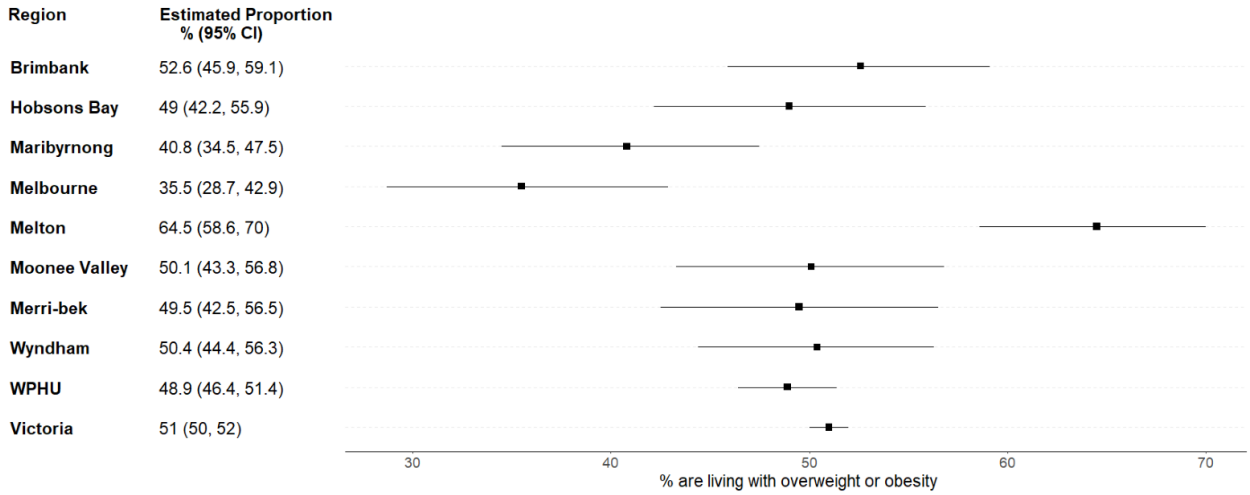

Figure 17: Estimates of the proportion of adults who are living with overweight or obesity by WPHU LGA

Whiskers indicate upper and lower 95% confidence intervals.
Source: Victorian Population Health Survey, 2017, cited by Victorian Population Health and Wellbeing Outcomes Framework Dashboard.

Smoking

There are 5 metrics available for smoking status in the *2017 Victorian Population Health Survey*: daily smoker, occasional smoker, current smoker (daily and occasional), ex-smoker and non-smoker[35]. Within the WPHU catchment, 12.5% of adults smoke daily (CI:11.0, 14.3), which is higher in comparison to Victoria overall (12.0%; CI: 11.4,12.7) (Appendix C Table 16).

There is considerable variation across the 8 LGAs for smoking status. Daily smokers range from 7.9% to 17.2%, and daily or occasional from 12.5% to 21.8% (Figure 18).

Proportions of daily smokers are above Victorian proportions in Brimbank, Hobsons Bay, Melton and Wyndham, and are statistically significantly higher in Brimbank (17.2%; CI: 12.7, 22.9) in comparison to Victoria overall (12.0% CI: 11.4, 12.7).

The proportion of mothers who smoke in the first 20 weeks of pregnancy is estimated between 2.7% (Melbourne) to 9.7% (Melton)[44]. In Melton, this equates to approximately 270 pregnancies each year affected by smoking. In Brimbank and Melton, smoking in the first 20 weeks of pregnancy is higher than Victoria overall (7.7%). In Wyndham, where there are more births, an estimated 6.5% of mothers smoke during pregnancy. Although the rates in Wyndham are lower than Victoria, this equates to more than 300 pregnancies affected by smoking in this LGA each year[44].

Data on childhood smoking and second-hand smoke is only available at national and state levels.

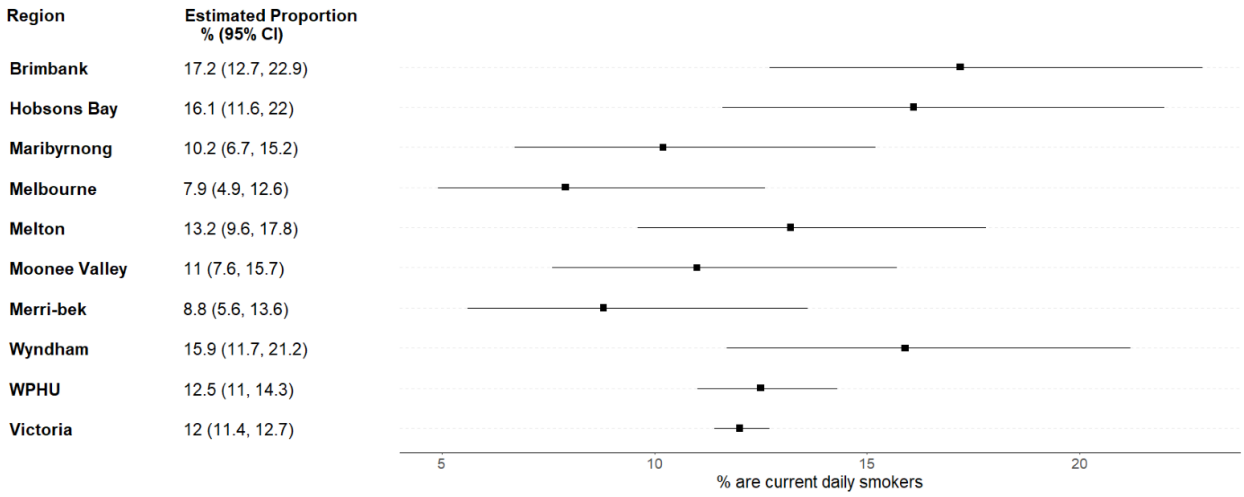

Figure 18: Estimates of proportion of adult population who are current daily smokers by WPHU LGA

Whiskers indicate upper and lower 95% confidence intervals
Source: Victorian Population Health Survey, 2017[35], cited by Victorian Population Health and Wellbeing Outcomes Framework Dashboard.

Vaping

Current e-cigarette use has doubled among Victorian adults in the last 3 years (from 154,895 (2019) to 308,827 (2022))[12]. It's estimated that 77,200 individuals who never smoked, currently vape in Victoria. Of those who vape, 58% use nicotine-containing vapes. In 2017, 14% of 12 to 17-year-old adolescents had tried an e-cigarette[15].

There is no local WPHU data available for vaping rates and trends. WPHU bicultural workers and community engagement officers are collecting the 'hidden voices' on vaping behaviours and trends among young people through their interactions with the community. Figure 19 highlights some lived experiences from community members, which is creating an informal community intelligence to understand the needs of the catchment in this area.

Figure 19: Quotes from local community engagement regarding vaping

Health needs

The burden of disease within a community is indicative of the cumulative effects of the environment, social position, risk factors and extent of preventative health actions. This section explores the health status of the WPHU catchment, with particular attention to preventable chronic health conditions.

The following section presents incidence, prevalence and mortality rates using a range of statistical methods including direct and indirect age-standardised rates and ratios. The choice of method used depends on a range of factors including data availability. Each require careful interpretation and have distinct applications.

Appendix C: Data and analysis provides important interpretation guidance on age-standardisation, rates and ratios, applicable to this section.

We report cancer separately due to important intersections between screening, incidence, and health outcomes.

In 2021, the Australian Census for Population and Housing asked, for the first time, about long-term health conditions including arthritis, asthma, cancer, dementia, diabetes, heart disease, kidney disease, lung conditions (including chronic obstructive pulmonary disease (COPD) or emphysema), mental health (including depression and anxiety) and stroke. We therefore know how many people reported in the census they had received one of the above diagnoses. Due to the availability of these data by geographical area (i.e., LGA), it is a valuable data source despite the potential bias from self-reporting.

Chronic health conditions

In 2021, 212,946 (16.6%) residents reported having one long-term health condition, 58,031 (4.5%) reported 2 long-term health conditions and 27,215 (2.1%) reported 3 or more long-term health conditions. These rates are lower than the metropolitan LPHU region and Victoria overall. In this catchment plan, the terms ‘chronic health condition’, chronic disease’ and ‘long-term health condition’ are used interchangeably.

The age-standardised ratios for select chronic diseases are shown in Appendix C Table 17 and Appendix C Table 18.

For all conditions reported in the 2021 Census except cancer, there are regions that have higher prevalence than expected based on standard Australian rates. The incidence of diabetes is 48% higher than expected in Melton and 41% higher than expected in Brimbank while the incidence of heart or lung disease is 6% higher than expected in Melton.

Oral health

Tooth decay is a common condition that is largely preventable by diet and good oral hygiene. Dietary factors that increase the risk of tooth decay include a diet that is high in ultra-processed foods, sugary food and drinks and frequent snacking. A diet that follows healthy nutrition guidelines is highly preventative of tooth decay[45].

In Victoria, the average number of decayed, missing or filled teeth in children who attend a public dental service is 1.1 for children 0 to 5 years, 2.4 for children 6 to 12 years, and 1.9 for children 12 years and older[46] (Figure 20). This is especially important in absolute terms due to the high number of children in Melton and Wyndham. In Brimbank, the average number of decayed, missing or filled teeth per child is more than double that of Victoria in children 0 to 5 years old, and 1.5 times more in children 6 to 12 years old.

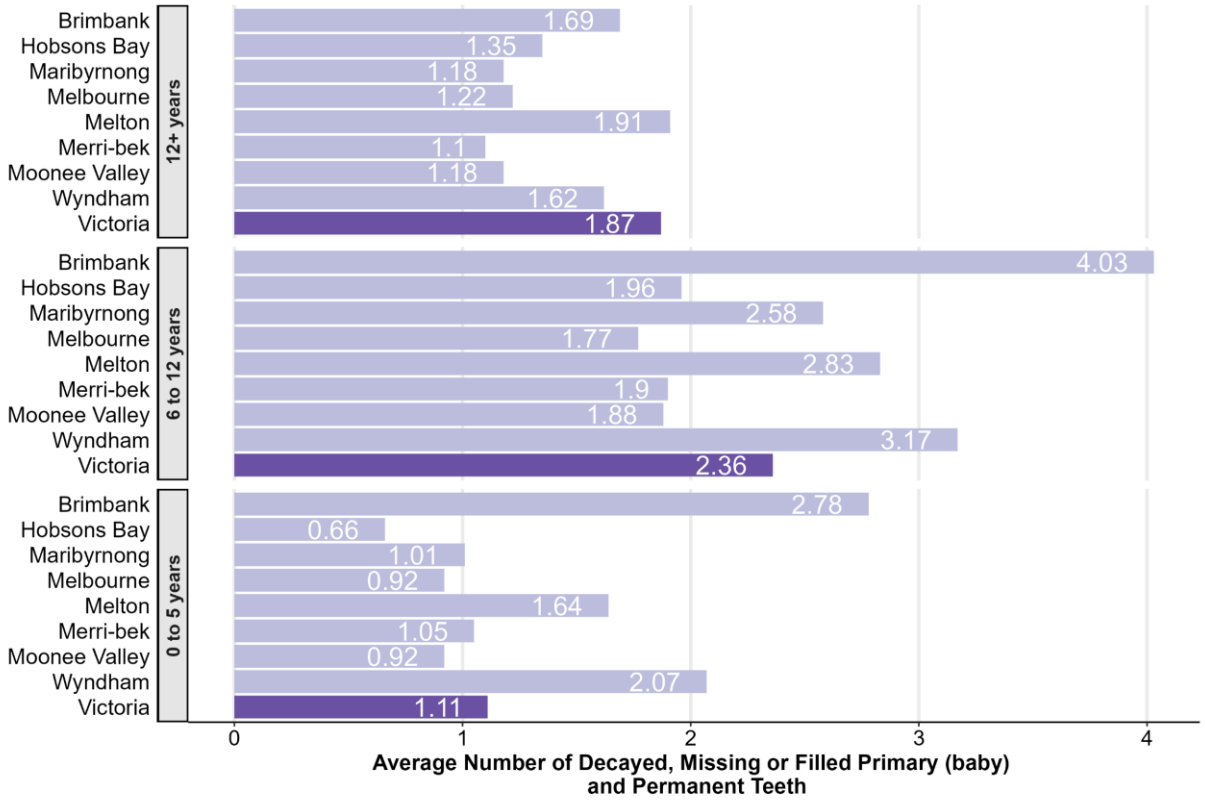

Figure 20: Average number of decayed, missing or filled primary (baby) and permanent teeth for children attending public dental services, 2017-19 by WPHU LGA

Source: Dental Health Services Victoria 2017–19[46]

Mental Health

Within the WPHU catchment, 24.3% (CI: 22.3, 26.5) of adults reported high or very high levels of psychological distress in the *2020 Victorian Population Health Survey* (Appendix C Table 19). This is higher than estimates for Victoria (23.5%, CI: 22.6, 24.4), and the second highest ranking among all Victorian LPHUs[41]. Within WPHU LGAs, estimates ranged from 21.2% (Moonee Valley) to 28.8% (Merri-bek).

Based on the age-standardised ratio for depression or anxiety from the 2021 Census, depression or anxiety was 22% higher than expected in Merri-bek and 9% higher than expected in Maribyrnong, compared to the Australian standard rates.

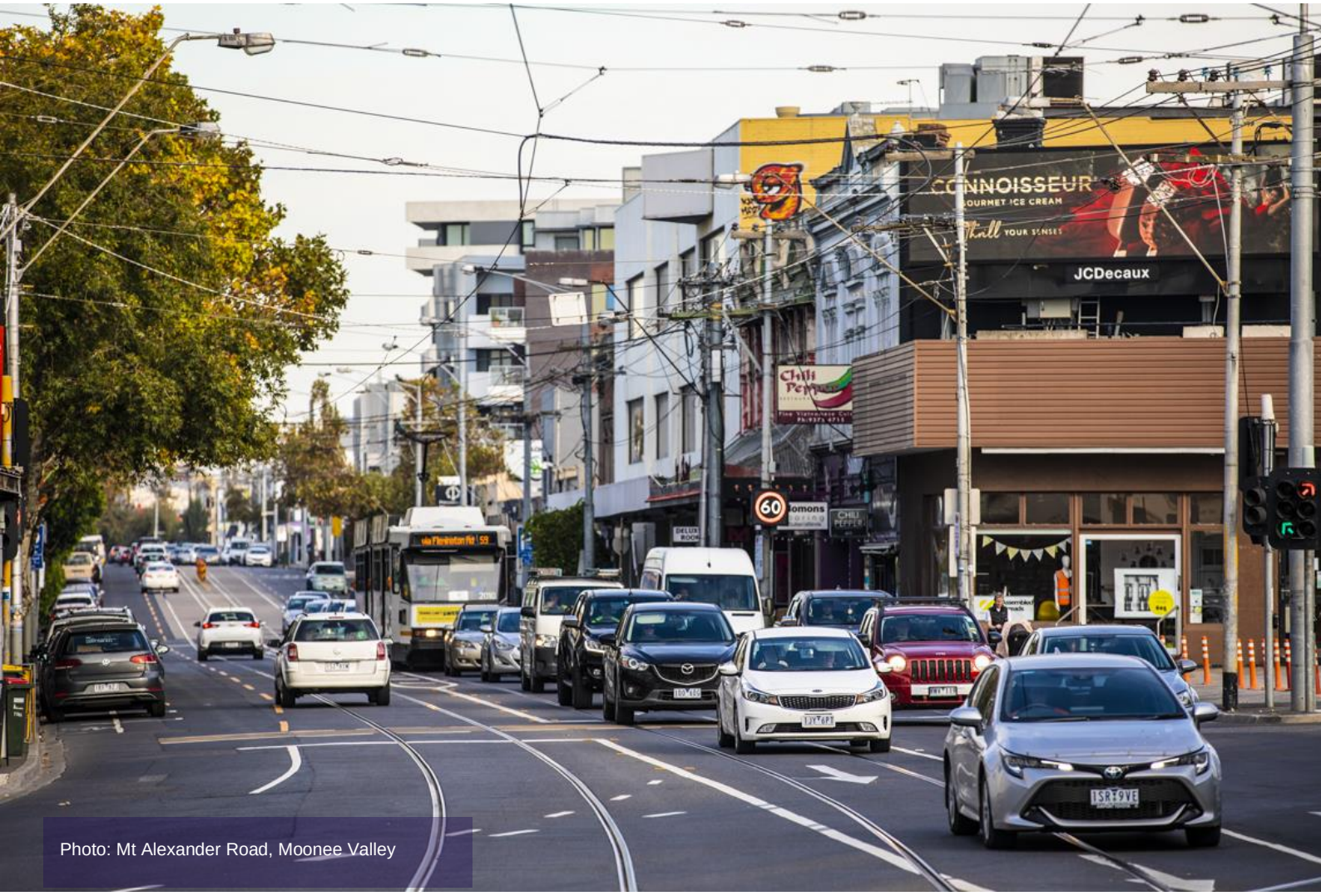

Photo: Mt Alexander Road, Moonee Valley

Life expectancy, mortality and causes of death

In 2021, 7 of the 8 LGAs had a direct age-standardised death rate (ASDR) above the rate of Victoria overall (Figure 21). ASDRs allow for the comparison between populations that have different underlying age structures. Only Moonee Valley, with an ASDR of 4.6 per 1,000 population fell below the rate in Victoria overall. Maribyrnong had the highest ASDR of the LGAs between 2013 and 2021, ranging from 6 to 6.3 deaths per 1,000 population per year. There were 6,160 deaths in 2021, the most of which occurred in Merri-bek (1,167) and Brimbank (1,164) (Appendix C Table 20).

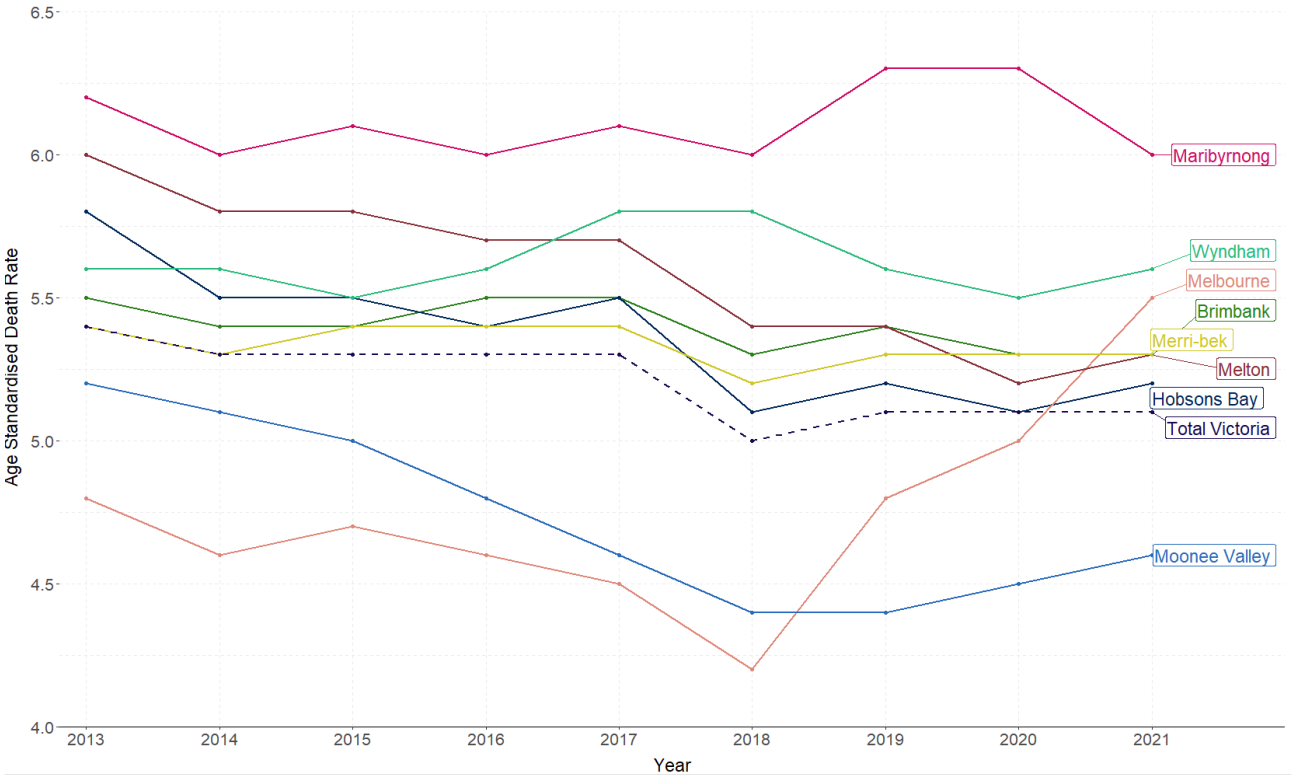

Figure 21: Direct-age-standardised death rates across WPHU LGAs

Source: ABS Deaths, Australia, 2021

Figure 22 compares crude death rates for the WPHU catchment and metropolitan LPHUs for the top 20 causes of death in Victoria. Generally, crude death rates are similar, although it is notable that rates are higher in WPHU for coronary heart disease, COPD, diabetes and lung cancer[47]. This difference is seen despite the population age distribution being younger in the catchment than in metropolitan LPHUs overall. Whilst ASDRs for different causes of death are not readily available at the local level, we can conclude that outcomes in WPHU are worse than those suggested by crude death rates. We have a younger population than the Victorian and metropolitan LPHU average. Therefore, higher crude death rates imply that if population distribution was the same state-wide, we would have even worse outcomes than the rest of Victoria.

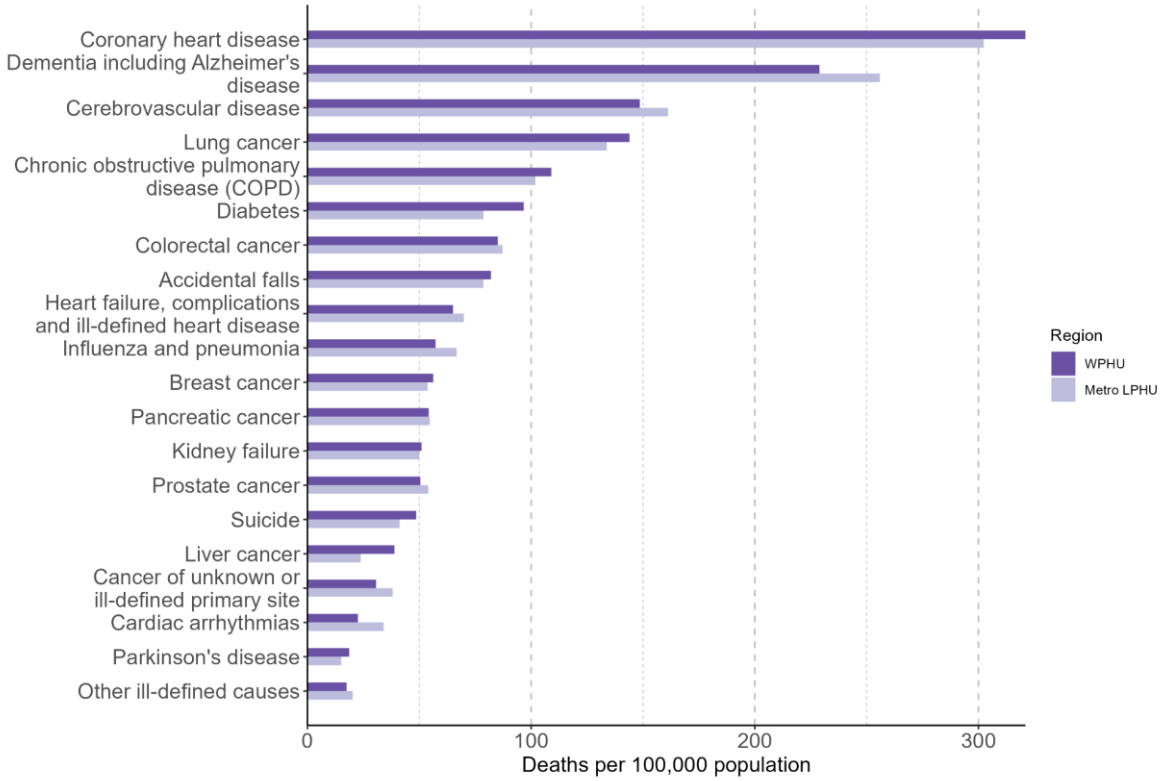

Figure 22: Crude death rate by region for the top 20 causes of death in Victoria for 2016 to 2020

Source: Australian Institute of Health and Welfare. Mortality Over Regions and Time (MORT), 2022[47]

Premature mortality

Premature mortality refers to deaths in people aged under 75 years and is a measure that allows for comparisons over time and across different populations. The data shown in this section are presented as indirect age-standardised ratios referred to in Appendix C: Data and analysis.

We note the wide uncertainty in standardised death ratios (SDR) and include 95% confidence intervals (CI) in the figures and appendix tables. In this section we only indicate higher than expected rates where they are statistically significant.

Premature mortality from chronic disease

There are considerable inequalities in premature mortality from chronic disease within the catchment, compared to Australia (Appendix C Table 21 and Appendix C Table 22). Of the LGAs, Brimbank and Maribyrnong have consistently higher than expected rates of premature death from many of the leading causes. Premature mortality from diabetes is approximately 63% and 44% higher than expected in Maribyrnong and Brimbank, respectively (Figure 23), and 67% and 43% higher than expected for ischaemic heart disease in Maribyrnong and Brimbank (Figure 24). Premature mortality from COPD is approximately 59% higher than expected in Maribyrnong and 35% higher than expected in Wyndham (Figure 25).

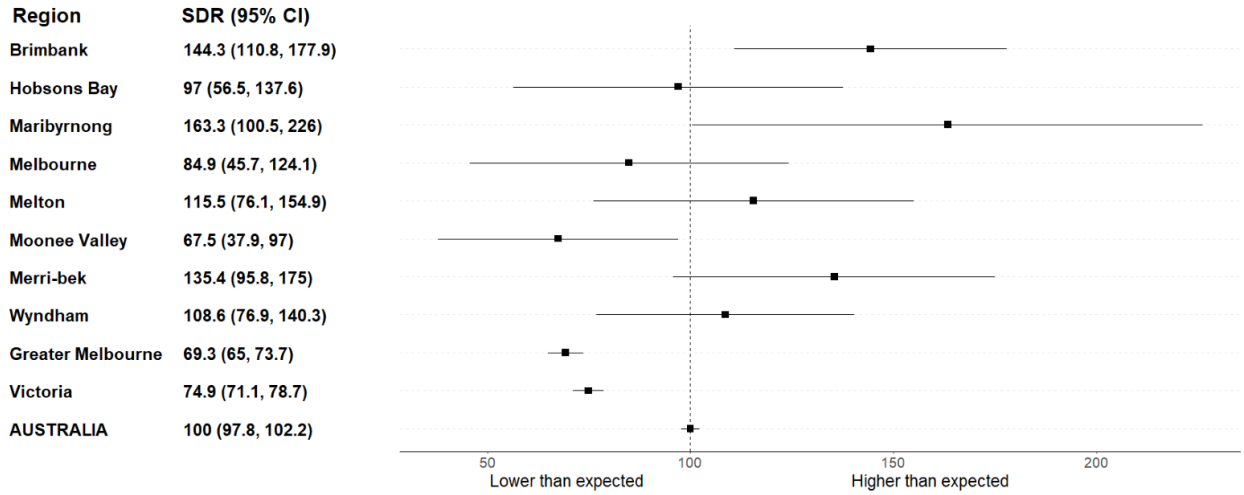

Figure 23: Premature mortality from diabetes, for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

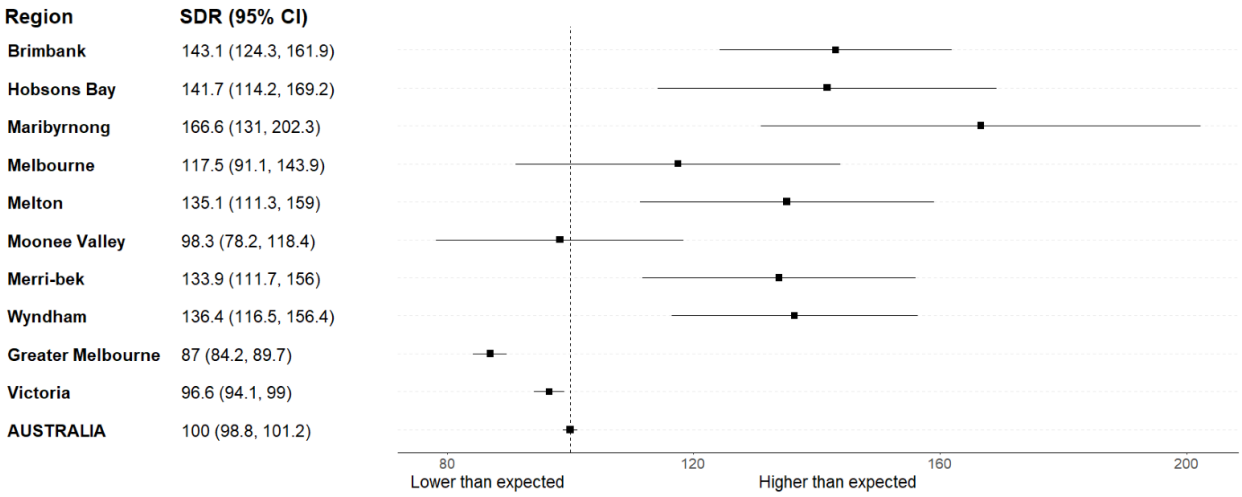

Figure 24: Premature mortality from heart disease, for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

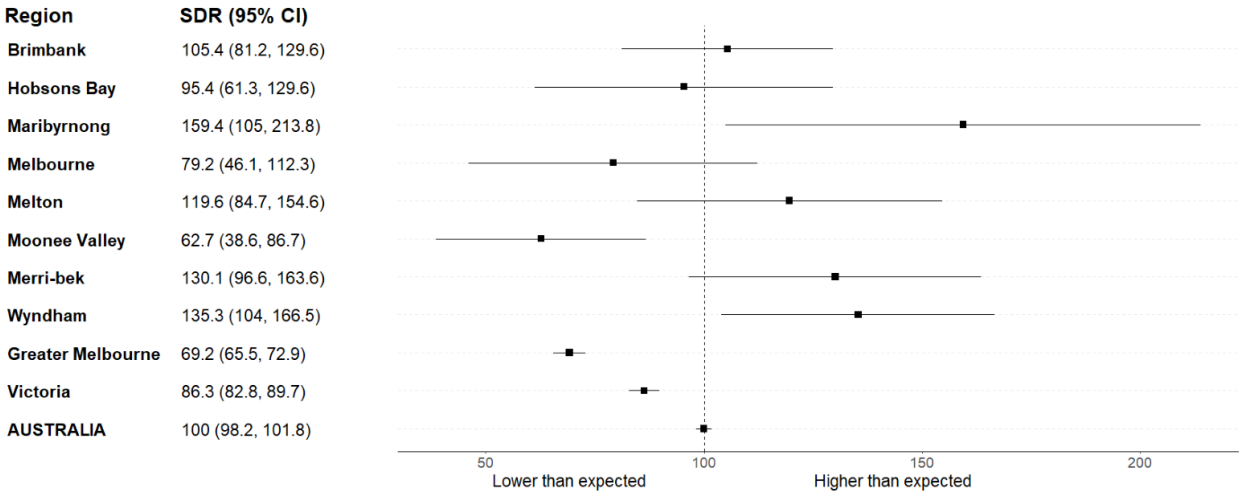

Figure 25: Premature mortality from chronic obstructive lung disease for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

Cancer

Cancer Screening

Certain cancers can be detected through population-based screening, enabling early diagnosis of cancer or pre-cancerous abnormalities and early access to treatment. Within Australia, there are 3 national cancer screening programs: the National Bowel Cancer Screening Program (NBCSP), the BreastScreen Australia Program and the National Cervical Screening Program (NCSP). Cancer screening rates within the WPHU catchment are lower than rates across Victoria. We present data provided by the Victorian Department of Health pertaining to screening activity up to the end of 2021.

BreastScreen Program

BreastScreen Australia provides free breast screening to women aged 40 and over, although the program specifically targets women between 50 and 74 years. Between 2019 and 2021, 45% of eligible women within Victoria participated in the BreastScreen program. The rate of participation in women between 50 to 74 years is lower in the WPHU catchment compared with Victoria: between 2019 and 2021, 41% of the eligible population in the catchment participated in the BreastScreen Australia program and opted in to monitoring.

Participation rates across the LGAs range from 32% to 49%, with 5 of the 8 LGAs falling below participation rates for Victoria. The low participation rates in the City of Melbourne (32%) are a consistent feature since 2015 and requires further inquiry into the possible social, economic or cultural influences that may be influencing this trend.

National Cervical Screening Program

The National Cervical Screening Program (NCSP) offers practitioner collected or self-collected cervical screening tests for women and people with a cervix aged 25 to 74 years of age, every 5 years. In the 5-year period between 2017 and 2021, just over 1.2 million people within Victoria participated in the NCSP, representing 72% of the eligible population. Within the WPHU catchment, 69% of the eligible population participated in the program; lower than participation rates for Victoria as well as the metropolitan LPHU region (73%).

Within WPHU LGAs, participation rates range from 33% to 78%, with 5 of the 8 LGAs falling below the participation rates for Victoria.

National Bowel Cancer Screening Program (NBCSP)

Free bowel cancer screening home kits are mailed to Australians aged 50 to 74 years of age every 2 years. Between 2016 and 2017, 43% of eligible Victorians participated in the NBCSP. Participation within the WPHU catchment was lower than Victoria at 39%. Participation across the LGAs ranged between 35% and 44%.

Cancer incidence

The incidence of all cancers, for all LGAs are 5 to 15% below the expected rate based on the Australian standard. However, rates of specific cancers – including colorectal and lung cancer both of which have significant modifiable risk factors and for which screening may occur – are higher than expected within the LGAs. This includes 4% higher rate of colorectal cancer than expected in Hobsons Bay, 21% higher than expected rate of lung cancer in Wyndham, and 10% higher rate of lung cancer than expected in Brimbank. The indirect age-standardised ratios (SR) for cancer incidence are shown in Appendix C Table 23 to 26.

Premature mortality from cancer

WPHU LGAs have 8% to 24% higher rates of premature death from cancer (any type) than expected, except for Melbourne (5% lower than expected) (Appendix C Table 23)[48]. There are considerable inequalities in premature mortality from cancer within the catchment, compared to Australian standard rates.

Premature mortality from colorectal cancer is 46% and 31% higher than expected in Melton and Brimbank respectively (Figure 26). Premature mortality from lung cancer is 51%, 37% and 28% higher than expected in Maribyrnong, Melton, and Brimbank respectively, and premature mortality from breast cancer 43% higher than expected in Brimbank. The standardised ratios for premature death from cancer (all types) and colorectal, lung and breast cancers, are shown in Appendix C Table 27.

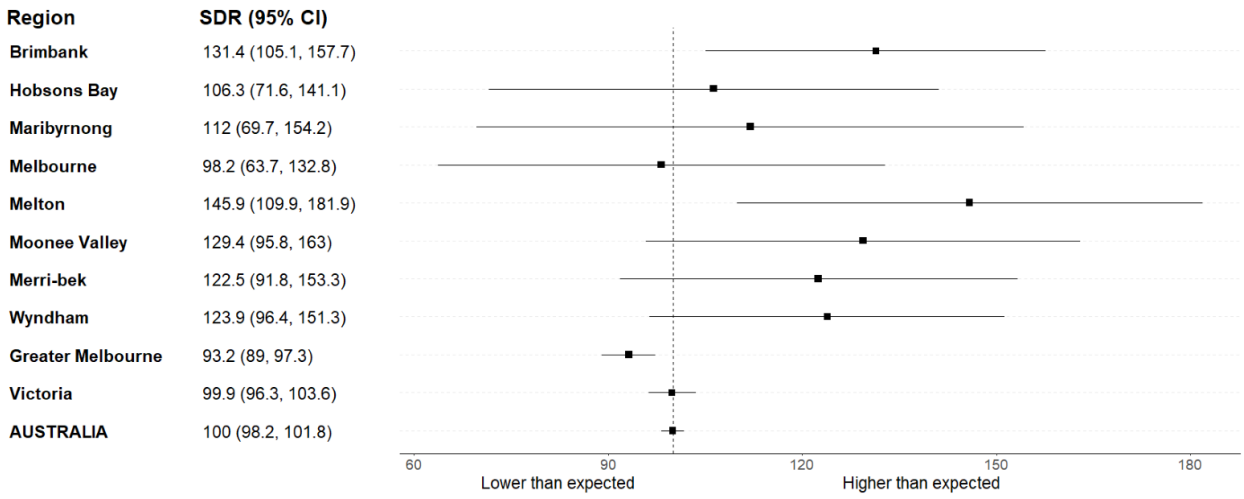

Figure 26: Premature mortality from colorectal cancer for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

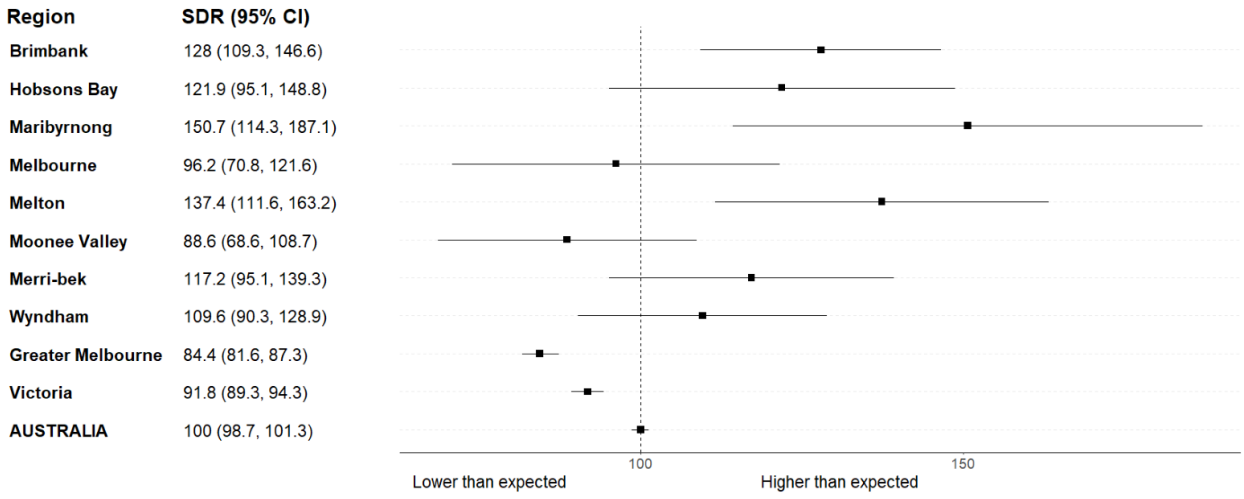

Figure 27: Premature mortality from lung cancer for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

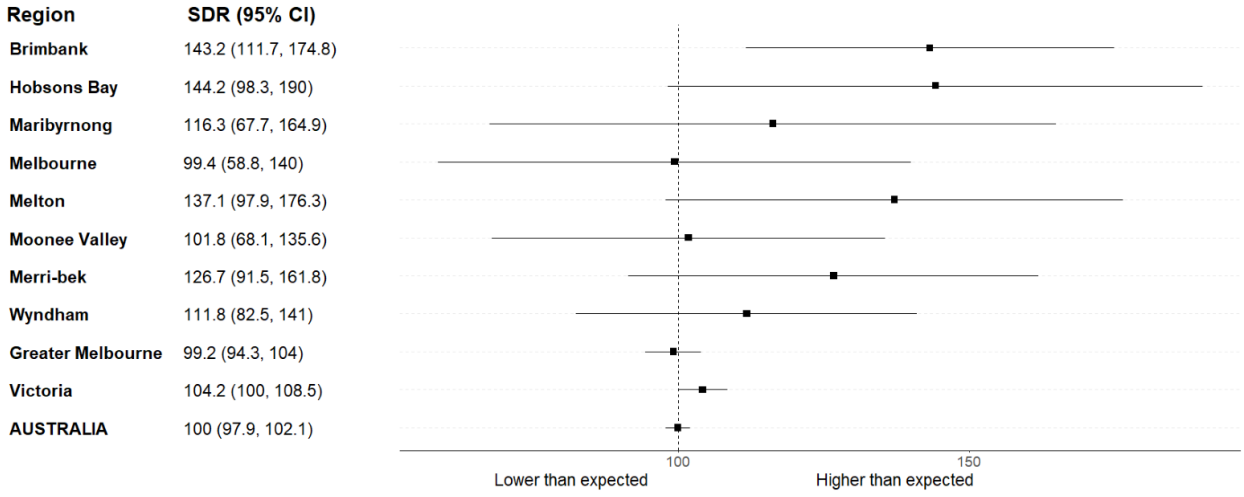

Figure 28: Premature mortality from breast cancer for years 2016 to 2020, by region

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

Sexual and reproductive health and viral hepatitis

Sexual and reproductive health and viral hepatitis (SRHVH) is a priority action area for WPHU. There is considerable opportunity for improvement in outcomes for SRHVH due to the comparatively younger population in the catchment and limited existing services. There is cultural and linguistic diversity among women of childbearing age within the catchment, presenting opportunity to provide holistic and culturally appropriate public health. Finally, there are additional opportunities to support people experiencing incarceration, as 7 of the 9 prisons in Victoria are in the catchment.

Our LGAs have higher notification rates for many STIs in comparison to the Victorian average (Appendix C Table 28). Public health action on SRHVH at WPHU is addressed as a standalone project funded by the Victorian Department of Health and will be described separately outside this plan.

Health inequalities in WPHU

WPHU are adopting the systematic and validated framework developed by the World Health Organization (WHO) to monitor inequality within our catchment[49]. This work will be carefully developed over the coming years. Building on the findings within this catchment plan, we seek to understand the drivers of health disparities that we have found to exist based on place of residence and the relative socio-economic disadvantage.

Our initial work under the WHO framework has shown that the most relevant dimensions of health inequality for the WPHU catchment are gender, ethnicity, place of residence, and socio-economic disadvantage. These are the dimensions of inequality that we will initially prioritise.

Our work will account for the wide variation in age profiles in different regions in our catchment as well as biological differences between males and females, that would otherwise obscure gender inequity where it exists. For example, ABS data available to WPHU show the median age of death is higher and the rate of premature mortality is lower in women than men, which could suggest gender bias in favour of females. However, considerable published evidence exists of gender inequity affecting females. We will also find and describe the intersections where multiple dimensions of inequality converge to worsen disadvantage.

One pattern that we have observed from available data is variation in premature mortality among women within the catchment, based on place of residence. In Melton, premature mortality among women is 38% higher than the expected national rate for women, whereas in Moonee Valley, it is 5% lower (Figure 29).

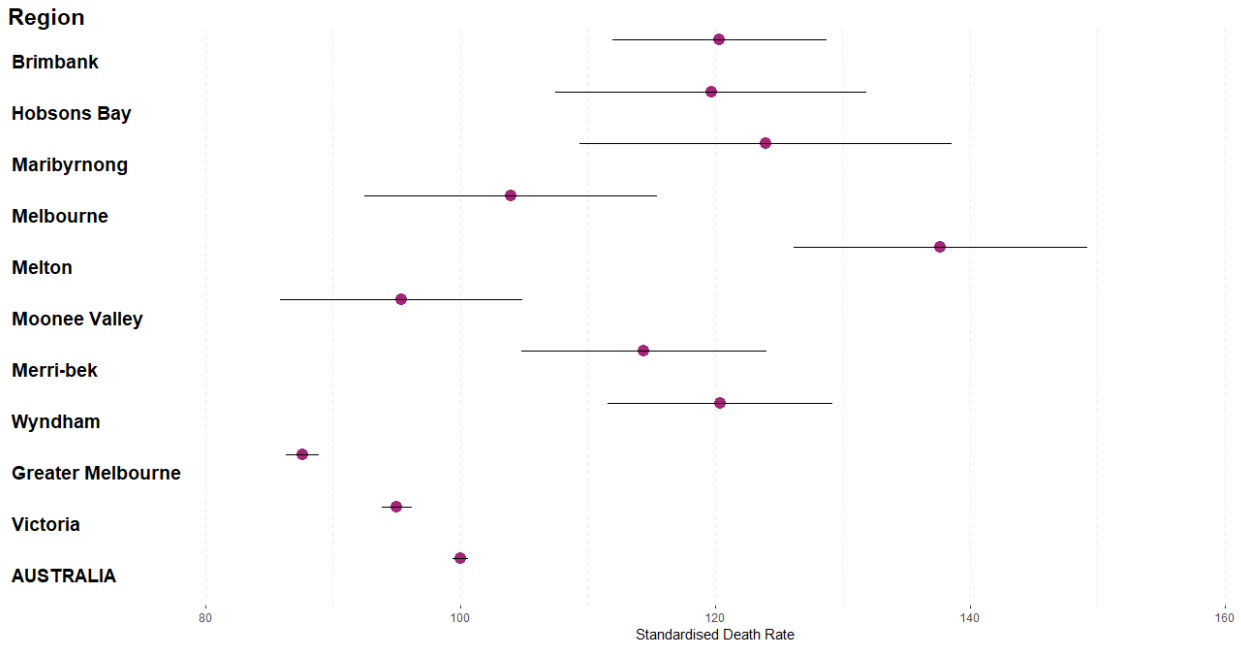

Figure 29: Premature mortality (by any cause) in women within the WPHU LGAs

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

Our long-term plan for monitoring health inequalities in our catchment includes ongoing community and stakeholder consultation, as well as developing well-defined analysis methodologies to:

- further investigate the potential drivers of the place-based disparities in health that we have observed within the catchment
- explore disparities in health based on socio-economic disadvantage
- investigate disparities in health based on gender and ethnicity.

We will use all available data to investigate our catchment and use the WHO framework to identify the most relevant dimensions of equality to measure. We look forward to working with the department and other data owners to use data and information to its maximal benefit.

West Metro Health Service Partnership

WPHU are also collaborating with the West Metro Health Service Partnership (HSP) and the North Western Melbourne Primary Health Network to understand population health needs across the HSP catchment. This project will help inform the decisions of the HSP's six public health services and assist collaboration across health services to meet the collective needs of the region. The project includes analysis of data at population, primary care, and hospital levels as well as community surveys and consultations. Following initial data analysis, the HSP chose to focus on understanding the health needs and drivers that contribute to avoidable hospitalisations and emergency department visits in four key priority groups: children aged under 10 years; women aged 20-39 years; people unwell with cancer and people aged over 65 years. Analysis of this data will be considered for planning and implementation of WPHU-led health promotion initiatives.

Photo: Footscray Market, Maribyrnong

Section 5: Needs identification and shared health priorities

Identification of needs and shared health priorities has involved: review of existing programs and activities being implemented in the catchment; data, community and stakeholder consultation; and intelligence gathering and analysis. The needs and shared priorities will guide the actions emerging from the 3 priority areas.

Summary of health needs in WPHU and shared health priorities

WPHU is a LPHU characterised by diversity. There are wide differences in population age and ethnicity profiles, socio-economic advantage, land use, health needs, languages spoken and health outcomes in a small geographic area occupied by 1.28 million people. WPHU is also home to 9,184 people who identified as Aboriginal in the 2021 Census.

Geography and land use within the catchment pose challenges that affect health. Large industrial areas in Brimbank, Maribyrnong and Hobsons Bay are offset by only small areas of parkland, especially in Maribyrnong where the high population density in combination with lower parkland and high industrial proximity may have increased the likelihood of respiratory illness and death. The WPHU catchment contains large growth corridors and has the highest crude birth rate of all LPHUs; accelerated population growth presents unique challenges and opportunities. The populations of Melton and Wyndham have more than doubled since 2006 and are projected to increase by a further 41% and 45% respectively by 2030. These areas have higher proportions of children than Victoria overall, with over 35 children for every 100 working-age adults.

There is diversity represented by multiple languages and first-generation immigrants from non-English speaking countries across the catchment. Over 44% of the community speak a language other than English at home (compared to 33% across the other metropolitan LPHUs).

Our residents are more socio-economically disadvantaged than residents in Victoria and Australia overall. In Brimbank, 40% of the population – nearly 77,000 people – live in the lowest decile of relative disadvantage for Australia. All LGAs have pockets in which people live in the lowest decile of disadvantage in Australia.

Our assessment of overall health status within the population identifies considerable opportunities for improvement in mortality, chronic disease prevalence, and modifiable risk factors. Risk factors and chronic disease outcomes are socio-economically patterned – the most disadvantaged frequently experience worse health outcomes and at much higher rates than their more advantaged counterparts. The likelihood of death from any cause (the age-standardised death rate) is higher than that of Victoria in all but one of the LGAs. Premature death from diabetes is higher than expected in 5 of the LGAs including 63% higher than expected in Maribyrnong. All but one of the LGAs have higher than expected rates of premature death from ischaemic heart disease. For cancer, a distinctive pattern is seen with low screening, comparable incidence to those of Australia overall, but high premature mortality. Premature mortality from lung cancer is higher than expected in 6 out of 8 LGAs and 51% higher than expected in Maribyrnong. Our residents are more likely to report high or very high levels of psychological distress than in Victoria overall. In some areas within the catchment, tooth decay is 1.5 to 2 times higher compared to rates in Victoria overall.

There are significant opportunities to improve risk factors within the population. Only 3.2% of adults consume sufficient fruit and vegetables, while rates of food insecurity were 10.4% in Brimbank. Rates of smoking are higher than the Victorian average in 4 out of 8 LGAs and smoking during pregnancy is a significant problem in areas of socio-economic disadvantage. Currently, there is no available local data pertaining to vaping in the catchment. However, community engagements and roundtable discussions with LGAs and community health services have highlighted emerging concerns regarding the use of vaping and the urgent need for public health action. Only 50.6% of our population are sufficiently physically active, lower than estimates for Victoria overall.

Photo: Navan Park, Melton

Primary prevention in WPHU and opportunities for action

The best value for primary prevention efforts occurs when modifiable risk factors are addressed as early as possible, starting with children and families. This approach maximises the potential for long-term health benefits, reduces health disparities, and promotes cost-effective strategies for preventing chronic diseases. By ensuring equity in access to resources and opportunities, primary prevention can contribute to healthier and more resilient communities. The high number of births and young families within our catchment, particularly in Wyndham and Melton, offers an opportunity to reach the population at a critical life stage where modifiable risk factors such as healthy eating and physical activity are established and then impact on lifestyle patterns across the lifecourse.

Equity in health outcomes is central to WPHU's population health approach. We will use local data to identify the populations experiencing greater need including culturally and linguistically diverse communities, LGBTQIA+ communities, Aboriginal and Torres Strait Islander peoples, people with a

disability, migrant and refugee, children and young people, and older people. We have an agreed plan to work with GenWest, a specialist family violence response and prevention agency to target such populations through its health promotion initiatives and ensure a gendered approach is embedded in this plan.

Taking a co-benefits approach

There are opportunities to realise substantial co-benefits across different priority areas. Benefits to mental health can be realised by addressing healthier eating, active living, reducing vaping and tobacco-related harm, as well as tackling the impacts of climate change on health.

Rationale for a focus on healthier eating and food systems

Inadequate nutrition affects 95% of people living in the WPHU catchment, contributing to high rates of chronic disease. For example, the catchment includes the top 2 LGAs in Victoria with the highest age-standardised rates of diabetes. Poor nutrition is a key modifiable risk factor where improvements can reduce rates of cardiovascular disease, type 2 diabetes, cancers and dental caries. The leading cause of premature death in the WPHU catchment is coronary heart disease. If people ate a healthy diet, coronary heart disease can be reduced by 62%[50]. Our population experiences higher rates of diabetes than other areas in the state and this condition can be reduced by 41% with healthier nutrition[9].

According to national data, inadequate nutrition alone contributes to 49 preventable chronic health conditions including diabetes, cardiovascular disease and cancers[9]. Consuming high amounts of ultra-processed food is associated with type 2 diabetes, frailty, irritable bowel syndrome, cardiovascular disease (and some associated risk factors), breast cancer and overall cancer incidence in adults, dyslipidaemia in children and metabolic syndrome in adolescents[51]. Diets rich in ultra-processed foods have also been linked to depression and higher rates of all-cause mortality in adults[11,51]. By the time a child is 5-years old, they are already consuming 40% of their total daily dietary intake from ultra-processed foods and 25% are already overweight or obese[9].

Food insecurity is common within the catchment and seems to be increasing due to the compounding rising cost of living, as indicated during community consultations. Healthier eating can be influenced by several factors such as education, living conditions and income. There is an inequitable distribution of nutrition-related health outcomes, and disadvantaged populations are more likely to experience food insecurity and nutrition-related illness[52].

Health inequities stemming from suboptimal food and nutrient intake can emerge as early as 2 years of age and are challenging to address once established. The first 2,000 days of a child's life are a crucial window to address such disparities[53]. A robust and equitable food system is vital to promote healthy eating and ensure children receive adequate nutrition for optimal growth.

Approaching healthier eating alongside food systems as action areas mean that we can take a long-term and systems perspective to improving diets which may have a co-benefit for food security. While 7 out of the 8 LGAs within the catchment identified healthier eating and food systems as a health priority, only 16.2% of interventions focused on healthy eating, compared to active living which made up 82.3% of interventions.

Studies show that people who eat a diet rich in vegetables, fruits, whole grains and fresh fish are up to 35% less likely to experience depression. Conversely, a diet high in ultra-processed foods

can increase the risk of developing depression by up to 60%[54–56]. Implementing a wide range of healthy and sustainable food system initiatives in communities can mitigate emissions, provide access to fresh, healthy and affordable food, and improve health outcomes[56].

With these factors in mind, there is considerable opportunity for WPHU to support and enhance food systems, with the goal of promoting healthier eating habits within our catchment.

Photo: Ceres Community Garden, Merri-bek

Rationale for a focus on reducing vaping and tobacco-related harm

Tobacco is a re-emerging population health issue. While smoking rates have substantially reduced in recent decades, growth in e-cigarette use presents an emerging and significant challenge, particularly amongst adolescents and young people[57]. Current e-cigarette use has doubled among Victorian adults in the last 3 years (from 154,895 (2019) to 308,827 (2022))[12]. Over half of those who vape (58%) use nicotine-containing vapes, while adolescents who vape are 3 times more likely to later take up smoking cigarettes[15,16]. One nicotine-containing vape has the equivalent nicotine level of 20 cigarettes[14]. The large majority of vapes declaring an absence of nicotine have been found to contain nicotine (190 out of 214)[13,58]. Exposure to nicotine in teenage years can

impair brain development and pose serious health risks to children and young people[16]. Seventy five percent of e-cigarette devices are purchased from brick and mortar stores, making it accessible for youth to purchase locally[16].

In addition, 'nicotine-free' e-liquid is not without its dangers, as the aerosol contains potentially cancer-causing chemicals, and chemicals linked to serious lung disease[14,59]. Vaping can exacerbate asthma and mental health conditions, making it more difficult to concentrate, remember or make decisions. Not only are vapes bad for health but they are also detrimental to the environment. Every vape that goes into landfill dumps plastic, poisons, nicotine salts, heavy metals, lead, mercury, and flammable lithium-ion batteries into the environment that can take hundreds of years to degrade[60]. Quitting smoking is associated with improved mental health, quality of life and reduces feelings of depression, stress and anxiety[61].

As a result, reducing tobacco-related harm and vaping can lead to improved and equitable health outcomes. Of the 8 LGAs, 6 highlighted reducing tobacco-related harm and vaping as an emerging priority public health issue. Currently there is no local data on vaping prevalence or the location of vaping stores in the catchment.

Rationale for tackling the impacts of climate change on health

'Climate change is the single biggest health threat facing humanity'[62]. Acting on climate change can lead to improved public health outcomes, such as better mental health, lower rates of cancer and obesity, fewer heat related deaths, and less cardiovascular and respiratory disease[63]. This is because exposure to climate change can directly and indirectly affect health. Direct exposure to climate change includes extreme heat, bushfires, droughts, and floods, which indirectly impact on water quality, food safety, air quality and ecological and land use change[17]. In turn, these impacts can lead to a disruption of social systems and responses to climate change – for example, impacted food production[64].

In Australia, 30% of food related greenhouse gases comes from ultra-processed foods and 65% of the current food supply is ultra-processed, making up 40% of the typical eating pattern in Victoria[9]. Ultra-processed foods are linked to increases in mortality, cancer, diabetes and depression, as well as contribute significantly to unnecessary CO_2 emissions[65,66]. The impacts of climate change include increases in health risks, such as a heat related illness and death, mental health illness, infectious diseases, injuries, respiratory disease, undernutrition, allergies, and poison[17]. These health outcomes are inequitably distributed with priority populations experiencing greater risk of health consequences due to climate change[67]. For example, inefficient heating and cooling in public housing means that public housing tenants are more likely to experience heat related illness[63]. Similarly, young people are likely to feel overwhelmed about the impacts of climate change on their future, and as a result are more likely to experience greater mental health impacts related to climate change.

Climate change leads to a disruption of cultural and spiritual connections to land that are important for Aboriginal and/or Torres Strait Islander people's health and wellbeing[68]. Adapting to and mitigating climate change can be mutually achieved through actions such as healthy and more sustainable food policies, staff and community climate change engagement and awareness, and urban greening and cooling initiatives[67]. As a result, tackling climate change with a climate justice lens can lead to improved and equitable health outcomes.

The west of Melbourne has the lowest tree canopy cover in the city, with an average of less than 6% compared to 26% in the eastern suburbs of Melbourne[69]. Given the impacts this has on health – for example, heat and respiratory illness – a need for greater action has been identified. As a result, current interventions in our catchment focus on urban greening and increasing tree canopy and vegetation. Of the 8 LGAs, 6 highlighted climate change as a priority public health issue.

Photo: Australian Bosnian Islamic Centre, Brimbank

Section 6: Implementation design and coordination

Actions and interventions

Delivering on the public health vision for prevention and population health

WPHU has drawn on existing local data and evidence-informed programs and services to target 3 population health priorities in the first year. Other work will be considered depending on needs identified during community and stakeholder engagement. All work will aim to reduce health inequities in the catchment by supporting communities with the greatest health needs. Figure 30 describes the process for deciding on actions within each priority. As we move forward over the next 6 years, we will be connecting in with the specific strategies and plans developed by the Victorian Government in the areas of chronic disease prevention, gender equality and family violence. See Appendix B: Victorian Government strategies, plans and initiatives for a full list.

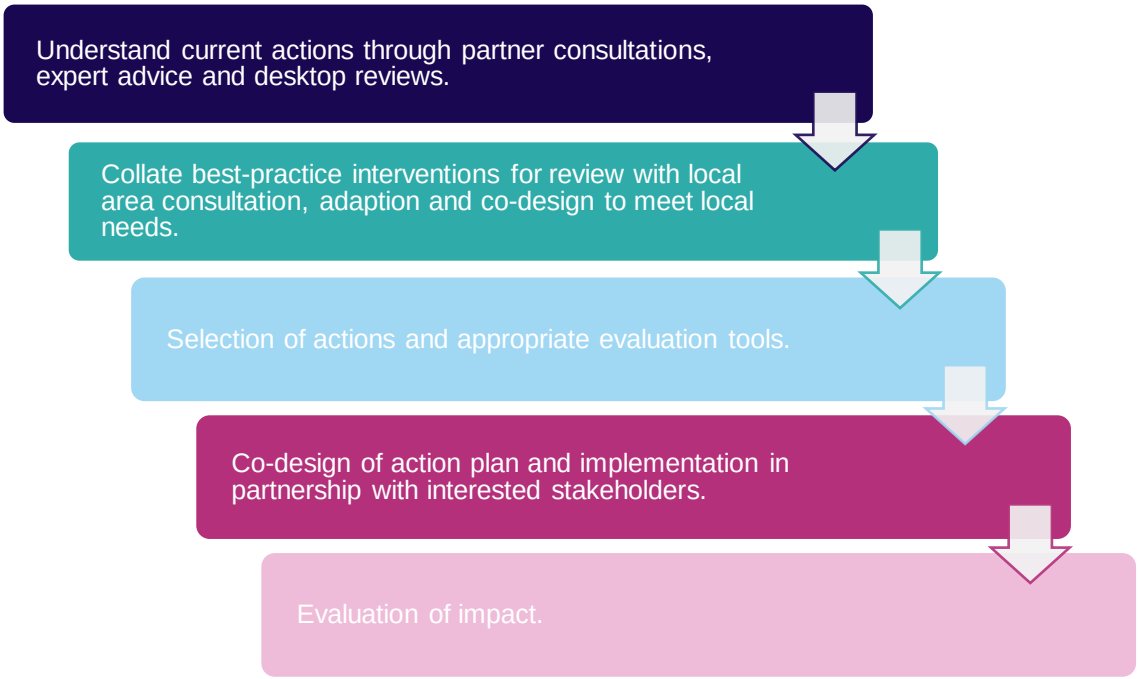

Figure 30: Summary of implementation design

Lead, support, link

We recognise the importance of building on existing networks and actions, accessing community and organisational strengths, and avoiding duplication of efforts. To add the most value, we have identified 3 complementary roles we can take to help deliver our vision – lead, support and link (Figure 31). Operating within different roles – depending on the context, existing structures and support, and expertise – enables us to deploy WPHU primary prevention capacity in a strategic, targeted and effective way while using existing capacity within the system.

The actions outlined below focus on the areas in which we will 'lead'. Examples of support and link include: supporting a review of a local government alcohol policy; and linking Cancer Council Victoria resources on vaping and cancer screening to other LPHUs.

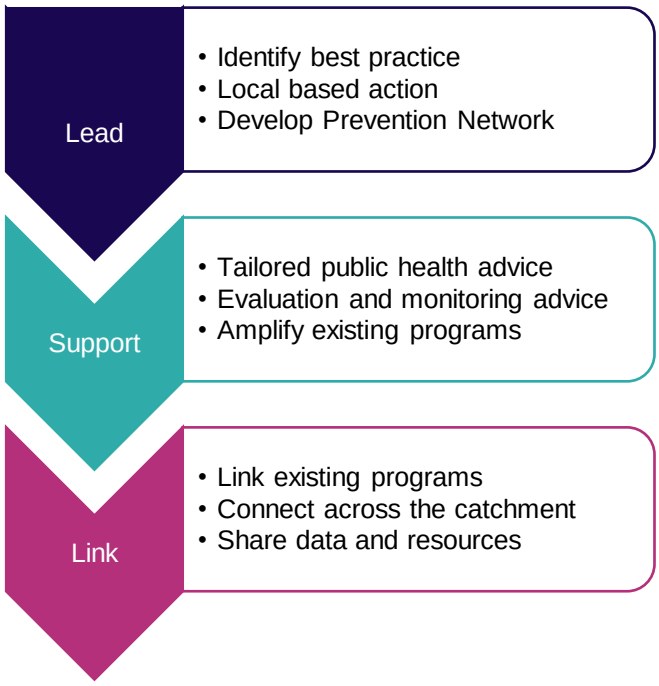

Figure 31: WPHU value-adds of lead, support, link

Systems-level actions

WPHU is establishing a strong prevention system in the catchment to enact collective action, avoid duplication, and act on health inequalities. We are dedicated to a strength-based approach. We will build on, connect, amplify and link to existing action and landscape, in addition to identifying and providing opportunities for evidence-based and innovative actions in the 3 priority areas. Table 3 describes our systems-level actions which work across priority areas.

Photo: Williamstown Beach, Hobsons Bay

Table 3: Systems-level actions to support priority areas

Approach	Action	Partners[1]	Outcome indicators[2]	Status of WPHU action[3]
Systems	**Consultation with key actors and experts in Victoria in the areas of:** ✓ healthier eating and food systems ✓ vaping and tobacco ✓ climate change and health.	Peak Leads	2–4	In progress and ongoing
Systems	**Create action groups in the WPHU Population and Preventive Health Network** WPHU will provide and coordinate an ongoing space for collaboration, collective action, and systems change for catchment stakeholders in the space of: ✓ healthier eating and food systems ✓ vaping and tobacco ✓ climate change and health.	Open	8–9	In progress
Systems	**Link to existing state-based groups in healthier eating and food systems** We will link catchment stakeholders into existing state-based action groups and support networks, including the Healthy Eating Advisory Service (HEAS), the Victorian Healthy Eating Enterprise (VHEE) and the Nourish Network.	Open	8–9	In progress

1 Partners: Peak = peak bodies in the sector, Lead = lead organisations in the sector and Open = open to any interested organisation
2 Taken from Appendix E: Outcome indicator set for short-term impacts
3 *Scoping* = under investigation (in research and analysis phase), *Option for action* = for proposal to stakeholders, *Planned* = pending implementation, *In progress* = currently ongoing, *Completed* = action completed

Approach	Action	Partners[1]	Outcome indicators[2]	Status of WPHU action[3]
Systems	**Link to existing state-based groups in climate change and health** We will link catchment stakeholders into existing regional and metropolitan climate change networks.	Open	8–9	In progress
Systems	**Link to existing state-based groups in vaping and tobacco** We will link catchment stakeholders into existing state-wide vaping and tobacco networks established by Cancer Council Victoria and QUIT Victoria.	CCV, QUIT Victoria	8–9	In progress
Systems	**Gender and health equity** We will work to reduce gender and health equities by targeting priority populations, including culturally and linguistically diverse communities, LGBTQIA+ communities, Aboriginal and/or Torres Strait Islander peoples, people with a disability, migrants and refugees, children and young people, and older people. We will have an active partnership with specialist organisations working to reduce inequities to ensure their approach, data, and community voice is incorporated into decision making. We will join existing partnerships and action groups where appropriate. The next phase of data analysis will involve the assessment of health disparities within 3 key population groups: 1) socio-economic disadvantage 2) gender and 3) ethnicity. The health outcomes will be selected to align with preventative health and the 3 priorities of our catchment plan21.	GenWest, ACCO, other specialist partners	8–9	In progress
Systems	**Gender equity** We will identify and focus on the capabilities, knowledge and strengths of the populations and organisations which serve the catchment. We will undertake a gender impact assessment on any initiative that is commenced under WPHU, using a gender impact assessment toolkit. We will actively link with the Western Health Diversity, Equity and Inclusion team and align our approach with Western Health's Gender Equity Action Plan.	Diversity, Equity and Inclusion Team at Western Health, GenWest	8–9	In progress

Approach	Action	Partners[1]	Outcome indicators[2]	Status of WPHU action[3]
Systems	**Strengths-based approach** We will identify and focus on the capabilities, knowledge and strengths of the populations and organisations which serve the catchment. Strengths of population groups and organisations will be used to co-design, amplify and link initiatives focusing on the priority areas.	Open	1-9	In progress
Capacity building	**Workforce survey** We will continue to identify population health promotion resources and workforce needs in the catchment. A workforce survey identifying gaps and areas for capacity building will be conducted with our population health stakeholders.	All partners	1	Planned
Capacity building	**Capacity building workforce** Informed by ongoing consultations with catchment stakeholders and the workforce survey outcomes, we will identify capacity building needs to support the development, delivery and evaluation of chronic disease prevention initiatives in the catchment. For example, equity and economic modelling. We will continue to identify and undertake opportunities as they emerge.	Open	1	In progress
Systems	**Determinants of health** We will recognise the impacts of the social, commercial and economic drivers of health when co-designing, planning, implementing and evaluating actions in the priority areas.	Open	1-9	In progress

Approach	Action	Partners[1]	Outcome indicators[2]	Status of WPHU action[3]
Systems	**Centre of WPHU** The Centre of WPHU (CoW) project uses geospatial modelling to explore the context of public health within the catchment. The interface allows us to generate maps that show a geographic or population-weighted 'centre' of something within WPHU, akin to a centre of gravity. The project aims to encourage breadth and depth of thinking, and creative conversation about our work, our community and determinants of health.	Open	1,8	In progress
Capacity building	**Cultural competency and health literacy training** WPHU Community Engagement and Education teams have developed and piloted a cultural competence and health literacy training program, funded by the Victorian Department of Health. The program aims to increase intercultural understanding, promote culturally safe workplaces, and ensure the provision of culturally safe public health to the WPHU catchment. We will provide opportunities for stakeholders to access training.	DH Centre for Culture and Ethnicity, Health Girraway Ganyi team	1	Completed and in use
Capacity building	**Quality of Engagement Evaluation Tool (QuEET)** WPHU Population Health Promotion team has developed a tool for the evaluation of stakeholder engagements. The tool measures the quality and effectiveness of stakeholder engagement activities ensuring continuous improvement. The tool captures data on both quantitative measures of stakeholder engagement, as well as qualitative data on emerging themes. QuEET is based on evidence and informed through the VicHealth Stakeholder Engagement Framework. The tool is currently in pilot phase and aims to build evaluation capacity in WPHU.	Open	1–2	Pilot phase completed New version in progress

Actions for Priority 1: Healthier eating and food systems

The following section details WPHUs actions in healthier eating and food systems which are either at the stage of 'scoping' (under investigation) 'option for action' (for proposal to stakeholders), 'planned' (pending implementation), 'in progress' (currently ongoing), or 'completed' (action completed). Each action is identified as either **innovation and value-add**, where we will explore opportunities to innovate in co-design, implementation, scale-up and/or adaption of initiatives to meet the needs of the population, or as **connecting with state-based initiatives**, where we aim to avoid duplication and build on existing systems and practices. Actions are further categorised as place-based, systems, advocacy or policy. Actions at the 'option for action' stage will be brought to the Healthier Eating and Food Systems action group to identify interest, priority, capacity and next steps. The number of concurrent actions led by WPHU will be determined by capacity and resourcing. Table 4 details specific actions, their stage, identified partners, and how their impact will be measured. We expand on 2 actions in depth, adaptations of the existing INFANT program and a partnership with Moondani Balluk on Aboriginal ancestral food practices.

Abbreviations
Australian Breastfeeding Association (**ABA**); Baby Friendly Hospitals **(BFH)**; Cancer Council Victoria (**CCV**); Community Health Centre (**CHC**); Deakin Health Economics, Deakin University (**DHE**); Deakin University (**DU**); Dental Health Services Victoria (**DHSV**); Department of Health (**DH**); Early Learning Centre (**ELC**); Emergency Relief, Anglicare Victoria (**ERAV**); Flinders University (**FU**); Foodbank (**FB**); Healthy Eating Advisory Service (**HEAS**); Institute for Health Transformation, Deakin University (**IHT**); Institute for Physical Activity and Nutrition; Deakin University (**IPAN**); Local Government Areas (**LGAs**); Neighbourhood houses (**NH**); Nutrition Australia (**NA**); Preschool (**PS**); Second Bite (**SB**); Sustain, The Australian Food Network (**STAFN**); The Big Umbrella Foundation (**TBUF**); The Community Grocer (**TCG**); VicHealth (**VH**); Victoria University (**VU**).

Table 4: WPHU actions to support healthier eating and food systems

Approach	Action	Link to state intervention	Partners[4]	Outcome indicators[5]	Status of WPHU action[6]
Innovation and value add **We will value-add through innovation in co-design, implementation, scale-up and/or adaption of initiatives to meet the needs of the population.**					
Place-based	**Scale up, adapt and embed INFANT Program** We will implement 5 key actions – actions expanded on page 78	✓	INFANT, IPAN, DU DHE, LGAs	1- 6, 8-9	In progress
Place-based	**Support Aboriginal dietary practices and place-making in public health equity** We will partner with Moondani Balluk to support the project – actions expanded on page 83.		VH, LGAs, VU	8,9	Planned
Systems	**Support use of the healthy food connect model for local food system change** We will explore opportunities to support LGAs to implement this Victorian Department of Health model.		DH, VH	8,9	Scoping
Systems	**Explore opportunities to connect with Sustain network** We will connect LGAs with project partners to identify opportunities to design and build sustainable and healthy food systems.		STAFN, LGAs	8-9	Scoping

[4] Partners: *Peak* = peak bodies in the sector, *Lead* = lead organisations in the sector and *Open* = open to any interested organisation
[5] Taken from Appendix E: Outcome indicator set for short-term impacts
[6] *Scoping* = under investigation (in research and analysis phase), *Option for action* = for proposal to stakeholders, *Planned* = pending implementation, *In progress* = currently ongoing, *Completed* = action completed

Approach	Action	Link to state intervention	Partners[4]	Outcome indicators[5]	Status of WPHU action[6]
Systems	**Explore opportunities to ensure cross sector work with food relief organisations** We will consult with food relief organisations to explore collaboration and promotion opportunities, and to understand the current landscape of food relief in our catchment.		TCG, FB, SB, ERAV, TBUF	8-9	Scoping
Systems	**Link to existing breastfeeding guidelines** We will link stakeholders to existing breastfeeding support organisations such as Baby Friendly Hospitals, and link to existing guidelines such as the Australian Breastfeeding Association Guidelines.		ABA, BFH	8-9	Scoping
Advocacy	**Advocate for unhealthy marketing regulations through collation of local data** We will explore opportunities to collect data on unhealthy marketing in the catchment.		LGAs	8	Scoping
Advocacy	**Advocate for healthier food environments through collation of local data** We will explore ways to collect data to advocate for changes in fast food planning.		LGAs	8	Scoping
Place- based	**Connect with new VegKIT initiative** We will collaborate with project partners to identify opportunities to increase children's vegetable intake through evidence-based strategies.	✓	CSIRO, FU, NA	2,8-9	Option for action

Approach	Action	Link to state intervention	Partners[4]	Outcome indicators[5]	Status of WPHU action[6]
Connect in with state-wide programs **We will consult with project partners to explore opportunities to promote, amplify and embed existing state-wide into LGAs and community health practices and systems. For further details of these initiatives see Appendix A: Local stakeholders.**					
Place- based	**Vic Kids Eat Well**	✓	DH, CCV, NA, HEAS, LGAs	2-4	Scoping to amplify/link
Place- based	**Smiles 4 Miles**	✓	DHSV, LGAs, PS, NH, ELCs	2-4	Scoping to amplify/link
Place- based	**RESPOND**	✓	IHT, DU	2-4	Scoping
Policy	**Healthy Choices Guidelines in publicly funded settings**	✓	HEAS, LGAs, Hospitals, Schools, ELCs	2–3	Option for action
Policy	**Healthy and More Sustainable Food Policy**	✓	DH, LGAs	2–3	Option for action

Building a healthier future: driving INFANT program implementation in WPHU for better health outcomes

WPHU actively supports the INFANT program as a means of empowering parents and families to create healthy eating habits and engage in active play right from the beginning of their baby's life. The program's effectiveness is evident as it continues to demonstrate significant benefits with noticeable behaviour improvements still observable at the 5-year mark. It shows greatest benefit to parents who are younger and less educated[70]. Additionally, the catchment area is characterised by growth corridors and a high proportion of families from culturally and linguistically diverse (CALD) backgrounds.

To add value to the program, our Population Health Promotion team is acting in the 5 following ways.

1. Boosting local workforce capacity

We are actively promoting INFANT training throughout the catchment area to enhance the capacity of the local workforce. This effort is complemented by the endorsement of INFANT by the Victorian Department of Health, which includes additional implementation support funding dedicated to enhancing the program's implementation from 2020 to 2023. The target audience for this training includes various professionals such as maternal and child health (MCH) nurses, early years practitioners, community workers, family support coordinators, dietitians, health promotion officers, and bicultural staff.

Strengthening the capacity of the local workforce to successfully complete the INFANT training not only encourages facilitators but also extends to other staff members who may not directly facilitate sessions. This inclusive approach provides an opportunity for all staff to align and integrate consistent messaging across different areas within the healthcare system that involve parents. This collaborative effort establishes a unified and impactful strategy and as a result, parents will benefit from receiving consistent, evidence-based information, and support.

2. Cultural adaptation and translation of INFANT resources

The Population Health Promotion and the Data, Epidemiology, and Surveillance (DES) teams collaborated to examine the diversity of families within our catchment area, with a specific focus on priority populations. This data analysis project focused on identifying the location of families with children aged between birth and 2 years of age who belong to the top 6 most spoken language groups, excluding English. The findings from this analysis guide our approach to supporting implementation of the INFANT program throughout the catchment.

Using this knowledge, we are leading the cultural adaptation and translation of low-literacy and video resources to better meet the needs of CALD children and families in the catchment. We are starting with translating resources into the top 6 languages spoken at home other than English among young families; Punjabi, Hindi, Urdu, Arabic, Mandarin, and Vietnamese. We are also involving bicultural workers and seeking input from local families to ensure accessibility and practicality in reaching high-need families.

3. Embedding and implementation across WPHU LGAs

Currently, INFANT is being implemented in 4 LGAs, and we are committed to extending implementation efforts to cover all 8 LGAs. To drive effective implementation across the catchment, WPHU serves as a reliable pillar of support. This includes assisting LGAs in embedding and implementing the INFANT program into their local government systems, thereby supporting action under the public health and wellbeing plans. We will enable the development of implementation plans, coordinate trained facilitators and key stakeholders, and engage in promotional activities. Additionally, we will actively evaluate the program's impact to ensure its alignment with the evolving needs of the communities it serves.

4. Innovate: integrating INFANT messages into traditional public health programs

To further ensure long-term sustainability and consistent messaging, we will also leverage innovative approaches to embed INFANT messages into traditional public health programs, such as WPHU's perinatal hepatitis B initiative. The existing contact between WPHU's Health Protection team and hepatitis B cases provides the Population Health Promotion team an opportunity to add a wraparound component to improve health and wellbeing of mothers, their children and families. This model will provide enhanced care and support via key health promotion messages and links to proactive programs such as INFANT, adapted to the needs of the family at critical points in their health journey.

5. Economic modelling: value of chronic disease avoided in WPHU

To support future prevention efforts, we aim to capture the economic value of this primary prevention work and quantify the chronic diseases (such as type 2 diabetes) avoided over the long-term. We have forged a collaborative partnership with the Deakin University Health Economics team, harnessing their expertise in using the ACE Economic Tool[71]

The economic modelling for the WPHU catchment highlights the remarkable impact of a small adjustment in dietary habits. The modelling suggests potential healthcare cost savings for our catchment if healthy habits are started early in life and continued.

If 89% of children aged 0 to 2 years in the catchment decrease their sweet biscuit consumption by just 2 biscuits per week, there is a projected $53 million healthcare cost savings for this cohort over their lifetime. Additionally, if there is an increase in the consumption of one serving of vegetables per week (or just 2 teaspoons per day) in children aged 2 years, there is a projected $23 million healthcare cost savings.

Furthermore, it prevents cases of ischaemic heart disease (averting 612 cases), hypertensive heart disease (preventing 105 cases), and diabetes (averting 2,104 cases). These findings underscore the immense benefits of promoting healthier eating habits from an early age, demonstrating the potential for long-term improvements in health outcomes and substantial cost reductions within the healthcare system (for further details see Appendix C Table 30).

In addition, we will contribute new inputs to inform potential future adaption of this tool to account for the cultural adaption of INFANT. This approach aims to further support an accurate and reliable estimate of the economic value of prevention programs.

We would like to acknowledge Dr Vicki Brown and Michelle Tran, Deakin Health Economics, Institute for Health Transformation, Deakin University for their modelling using the ACE Economic Tool.

Photo: Wyndham Cultural Centre, Wyndham

Delivered activities and future targets

Table 5 highlights delivered activities in adapting, scaling and embedding INFANT, along with future targets.

Table 5: WPHU delivered activities and targets under recommended actions

Recommended actions	**Delivered activities** Oct 2022 to April 2023	**Targets** June 2024
1. Boost capacity	✓ 30% increase in training registrations ✓ 34% increase in completed trainings ✓ 18 WPHU staff trained in INFANT ✓ 8 introductory meetings with LGAs with INFANT information ✓ Articles in the state-wide LPHU and WPHU community engagement newsletters ✓ WPHU linked INFANT to other LPHUs ✓ Presentation at INFANT CoP ✓ 21 bespoke emails promoting INFANT training sent to key stakeholders	MCH sites • Reach a total of 105 MCH sites across the catchment, including: Brimbank: 8 sites Hobsons Bay: 11 sites Maribyrnong: 10 sites Melbourne: 6 sites Melton: 19 sites Merri-bek: 16 sites Moonee Valley: 11 sites Wyndham: 24 sites Workforce • Achieve a 30% increase in trained staff within the WPHU catchment area.
2. Cultural adaptation and translation	✓ Formal agreement with IPAN and Deakin University ✓ Data analysis of births in the catchment to target languages and high-need areas ✓ 14 MCH centres with the greatest potential reach identified ✓ Innovative collaboration with cohealth to engage Punjabi-speaking families ✓ Partnership formed with Western Health Interpreter Services (WHIS) to fulfil translation contractor obligations	CALD households • Extend the program's coverage to approximately 17,171 households of young families by including culturally adapted resources. The 6 language groups other than English most spoken by families with children 0 to 2 years of age in WPHU are: Punjabi (4912 households), Vietnamese (3619 households), Mandarin (2374 households), Urdu (2274 households), Hindi (2001 households) Arabic (1991 households). Partnership project with cohealth • Share recommendations and develop implementation strategies with key stakeholders, including the INFANT Program Team, IPAN, Deakin, and local governments, to ensure the accessibility of INFANT for CALD families.

Recommended actions	Delivered activities Oct 2022 to April 2023	Targets June 2024
3. Embed and implement	✓ Strategic partnerships with key contacts in 8 LGAs ✓ 4 inactive LGAs have started training to implement INFANT ✓ 2 LGAs supported by WPHU with implementation planning and coordination ✓ Survey tool designed to support monitoring and evaluation	Public health and wellbeing planning • 8 LGAs to embed the INFANT program in their municipal public health and wellbeing plans and early years plans.
4. Innovate – perinatal hepatitis B	✓ Aligned objectives, target populations and strategies for INFANT and perinatal hepatitis B program ✓ Developed wraparound service design and project plan in collaboration with health protection and medical teams	Reaching hepatitis B mothers • 70% of pregnant women with Hepatitis B contacted by WPHU receive effective health promotion linkages and messages (Project depending on capacity of Health Protection functions in WPHU)
5. Economic evaluation	✓ Formal partnership with Deakin University Health Economics team to use the ACE Economic Tool ✓ Economic modelling for the WPHU catchment area, analysing the impact of increased vegetable intake and decreased sweet biscuit consumption ✓ Data collection for cost-effectiveness analysis of cultural adaptation in the program	Future modelling efforts • $53 million healthcare cost savings if 89% of children aged 0 to 2 in the catchment decrease sweet biscuit consumption. • $23 million healthcare cost savings with increased consumption of one serve of vegetables in children aged 2 years • Capture economic value of prevention work by quantifying long-term chronic disease avoidance and healthcare cost savings. • WPHU provides inputs to inform future adaptation of economic tool, considering cost-effectiveness of cultural adaptation in prevention programs.

WPHU partnership with Moondani Balluk – Aboriginal Ancestral Food Practices

Moondani Balluk, meaning ‘embrace people’ in Woiwurrung language, is the Indigenous academic unit at Victoria University that provides a culturally safe and supportive place for Aboriginal students and staff. Moondani Balluk is launching a research project to uncover knowledge of ancestral food practices and to build a place-based response to reduce health inequities. The project aims to uncover ancestral Aboriginal knowledge about the ‘deadly tucker’ and Aboriginal food practices that can be used by Aboriginal communities today, to help keep Aboriginal people and Country healthy.

In doing so, the project aims to strengthen social and emotional wellbeing, inter-cultural understanding, skills and knowledge to support sustainable healthy food systems, and reduce health inequities currently experienced by Aboriginal Australians in Victoria. We are privileged to be a partner supporting this project.

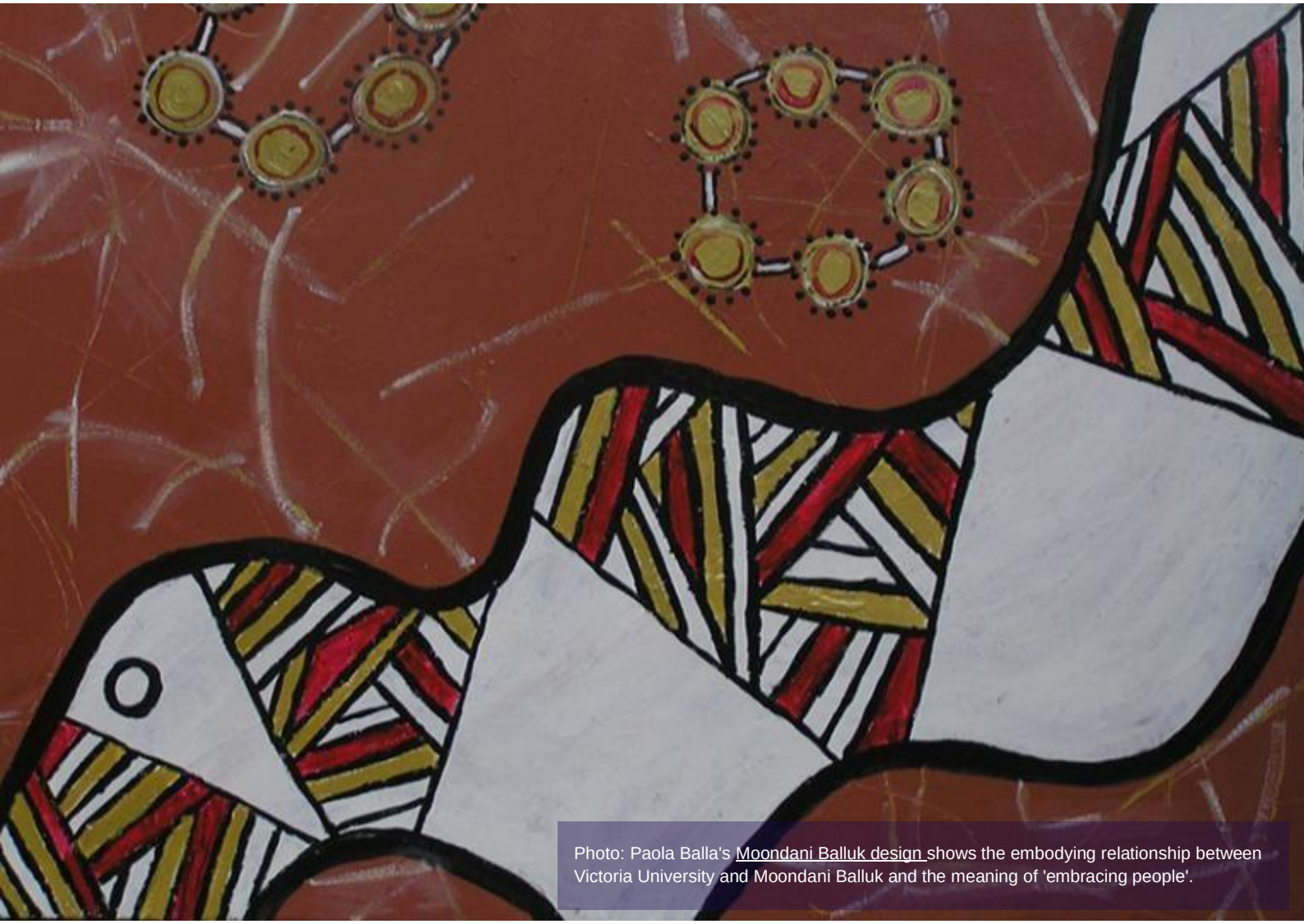

Photo: Paola Balla's Moondani Balluk design shows the embodying relationship between Victoria University and Moondani Balluk and the meaning of 'embracing people'.

Actions for Priority 2: Vaping and tobacco

The following section details WPHU's actions in tobacco and vaping, which are either at the stage of 'scoping', 'option for action' (for proposal to stakeholders), 'planned' (pending implementation), 'in progress' (currently ongoing), or 'completed' (action completed). Each action is identified as either **innovation and value-add**, where we will explore opportunities to innovate in co-design, implementation, scale-up and/or adaption of initiatives to meet the needs of the population or as **connecting with state-based initiatives**, where we aim to avoid duplication and build on existing systems and practices. Actions are further categorised as place-based, systems, advocacy or policy. Table 6 details specific actions, their stage, identified partners, and how their impact will be measured. Actions at the 'option for action' stage will be brought to the Vaping and Tobacco action group to identify interest, priority, capacity and next steps. The number of concurrent actions lead by WPHU will be determined by capacity and resourcing.

Abbreviations
Cancer Council Victoria (**CCV**); Community Health Centres (**CHCs**); Community Organisation (**CO**); Department of Health (**DH**); Environmental Health Officers (**EHOs**); Local Government Areas (**LGAs**); VicHealth (**VH**).

Table 6: WPHU actions to support reducing vaping and tobacco-related harm

Approach	Action	Link to state intervention	Partners[7]	Outcome indicators[8]	Status of WPHU action[9]
Innovation and value add **WPHU will value-add through innovation in co-design, implementation, scale-up and/or adaption of initiatives to meet the needs of the population.**					
Place-based, data and intelligence and advocacy	Implement WPHU *Vaping Intelligence Project* We will map stores selling vapes, their proximity to schools, and support advocacy ahead of new Australian Government vaping regulation. We will support the development of local case studies, data and programs.	✓	EHOs, LGAs	4–5, 8	In progress Start with Brimbank
Policy	Facilitate understanding of existing policies and programs Coordination of vaping and tobacco policies and programs across LGAs. Facilitate understanding around newly introduced Australian Government tobacco regulation and implications for LGAs.	✓	LGAs	2–3, 8–9	Planned
Place-based	Adapt best practice We will support the adaptation of best practice and evidence-based approaches to meet the needs of the local community.	✓	DH, VH, QUIT, LGAs, CHS, CO	2-4	Option for action

[7] Partners: *Peak* = peak bodies in the sector, *Lead* = lead organisations in the sector and *Open* = open to any interested organisation

[8] Taken from Appendix E: Outcome indicator set for short-term impacts

[9] Status: *Scoping* = under investigation (in research and analysis phase), *Option for action* = for proposal to stakeholders, *Planned* = pending implementation, *In progress* = currently ongoing, *Completed* = action completed

Approach	Action	Link to state intervention	Partners[7]	Outcome indicators[8]	Status of WPHU action[9]
Connect with state-wide programs **We will consult with project partners to explore opportunities to promote, amplify and embed existing state-wide programs into LGAs and community health practices and systems. For further details of these initiatives, see Appendix B: Victorian Government strategies, plans and initiatives**					
Place-based, awareness and education campaign	Harms of vaping campaign We will support the implementation and amplification of the QUIT *Harms of vaping* campaign.	✓	QUIT, CCV	7	Option for action
Place-based, resources and information	Vaping hub Support implementation and amplification of vaping hub for parents.	✓	QUIT, CCV	7-8	Option for action
Place-based, awareness and education	QUIT toolkits We will support the amplification and use of education and resources toolkits.	✓	QUIT, CCV	3–4, 9	Option for action
Place-based, policy and advocacy	Community of practice We will connect stakeholders to existing QUIT community of practice for key players as a potential state-wide network.	✓	QUIT, CCV	8-9	Option for action

Actions for Priority 3: Tackling climate change and its impact on health

The following section details WPHU's actions in climate change and health, which are either at the stage of 'scoping' (under investigation) 'option for action' (for proposal to stakeholders), 'planned' (pending implementation), in progress' (currently ongoing), or 'completed' (action completed). Each action is identified as either **innovation and value-add**, where we will explore opportunities to innovate in co-design, implementation, scale-up and adaption of initiatives to meet the needs of the population or as **connecting with state-based initiatives**, where we aim to avoid duplication and build on existing systems and practices. Actions are further categorised as place-based, systems, advocacy or policy. Actions at the "option for action" stage will be brought to the Climate Change and Health action group to identify interest, priority, capacity and next steps. The number of concurrent actions lead by WPHU will be determined by capacity and resourcing. Table 7 details specific actions, their stage, identified partners, and how their impact will be measured.

Abbreviations
Community Health Centre (**CHC**); Community Organisation (**CO**); Deakin University (**DU**); Department of Health (**DH**); Institute for Physical Activity and Nutrition, Deakin University (**IPAN**); Jesuit Social Services (**JSS**); Local Government Areas (**LGAs**); Sustainability Victoria (**SV**); Western Alliance for Greenhouse Action (**WAGA**); Wilim Berrbang (**WB**)

Table 7: WPHU actions to address climate change and health

Approach	Action	Link to state intervention	Partners[10]	Outcome indicators[11]	Status of WPHU action[12]
Innovation and value add **WPHU will value-add through innovation in co-design, implementation, scale-up and/or adaption of initiatives to meet the needs of the population.**					
Data intelligence	Measure CO2 impacts of healthy eating We will use the new CSIRO tool to measure the climate footprint of existing programs such as INFANT.	✓	DU, IPAN, CSIRO, CHS, LGAs		In progress
Place-based	Use the Jesuit Social Services 'Collaborative Action Plan for Climate Justice in Melbourne's West' We will identify 2 focus areas and use as a framework for collective action.		JSS, CHS, LGAs	2–4	Scoping
Place-based	Consult Aboriginal and/or Torres Strait Islander leaders We will consult Aboriginal and/or Torres Strait Islander leaders to develop a pilot project/action plan/recommendation for action on climate change.		WB	2–5	Planned
Data intelligence	Support the WAGA 'how well are we adapting' LGAs We will support the extended application of the adaptive capacity checklist to measure health system adaptation to climate change.	✓	WAGA, CHS, LGAs	4–5, 8–9	Scoping

[10] Partners: *Peak* = peak bodies in the sector, *Lead* = lead organisations in the sector and *Open* = open to any interested organisation
[11] Taken from Appendix E: Outcome indicator set for short-term impacts
[12] Status: *Scoping* = under investigation (in research and analysis phase), *Option for action* = for proposal to stakeholders, *Planned* = pending implementation, *In progress* = currently ongoing, *Completed* = action completed

Approach	Action	Link to state intervention	Partners[10]	Outcome indicators[11]	Status of WPHU action[12]
Systems and capacity building	Co-design climate change and health messaging We will co-design climate and health messaging to increase awareness and engagement in healthier behaviours, which is a Victorian Department of Health recommendation for climate change adaptation and mitigation.	✓	SV, CO, CHS, LGAs, DH	2–5, 7	Option for action
Place-based	Pilot a local level liveability framework We will work with the catchment to pilot a liveability framework that enables integrated planning, prevention, and monitoring of liveability.	✓	DH, LGAs, CHS	2-3	Scoping
Systems	Reduce gendered impact of climate change We will explore opportunities to reduce the gendered impact of climate change and promote women's participation and leadership in climate change decision making and mitigation.		CHS, LGAs, GenWest	3,5	Scoping
Connect in with state-wide programs **We will consult with project partners to explore opportunities to promote, amplify and embed existing state-wide interventions into LGAs and community health practices and systems.**					
Policy	Implement 'good food policy' across LGAs We will work with LGAs to implement the recently launched 'good food policy' for healthy and more sustainable government food procurement.	✓	DH, CHS, LGAs	3–4	Scoping

Section 7: Monitoring and evaluation

WPHU is committed to ongoing monitoring and evaluation of its various population health promotion programs, activities and initiatives. The population health promotion function of WPHU incorporates impact evaluation, stakeholder engagement quality, and continuous improvement processes. We have developed an overarching evaluation framework, detailed below, to provide guidance on systematic and objective assessment of population health promotion programs and interventions to determine their efficacy, impact and relevance. The framework includes guidance on evaluation planning (*process and impact*), study design and agreed indicators for comparing outcomes of interventions. Evaluating stakeholder engagement quality promotes effective stakeholder engagements and partnerships while maintaining accountability and transparency.

Our approach to evaluation is value-based with a focus on health equity. We aim to put an economic value on health conditions avoided and number of life years added, providing proof of concept on the high social and economic impact of keeping people in the best health possible. We will also apply a co-benefits approach to tackling health priorities, recognising the strong links between physical and mental health, and the substantial impact the social, physical, economic and natural environments play on health and wellbeing outcomes. We seek to recognise and capture the impacts of acting in one health area (e.g., healthy food) on multiple outcomes (cardiovascular disease, cancers, mental health).

Photo: Bourke Street tram, Melbourne

Informing frameworks

We have developed an evaluation framework which is informed by the Victorian Government's *Evaluation framework for health promotion and disease prevention programs*[72] as well as the CDC's *A Framework for Program Evaluation*[73]. The outcomes, indicators and measures that we will measure are guided by the *Victorian public health and wellbeing outcomes framework* [1]

WPHU Evaluation Framework

The WPHU Evaluation Framework (Figure 32) has 6 key steps which support a rigorous and pragmatic approach to evaluating population health promotion activities.

Figure 32: WPHU Evaluation Framework

Areas of evaluation

Evaluation of our work in the population health space is divided into 5 areas and includes the phase one priority areas of action. Processes are in place to ensure key functions such as stakeholder engagements, capacity building, professional development, policy and reviews, and systems-level co-ordination and connection efforts such as WPHU's lead, support and link model of operation are assessed regularly.

As the Population Health Promotion and Planning team progresses with their actions, several short-term and long-term outcome indicators have been identified for evaluating the impact of the processes and initiatives the team is undertaking. These outcomes indicators are evidence-based and align with the *Victorian public health and wellbeing outcomes framework (VPHWOF)* wherever

applicable. The short-term outcomes are presented as a core set of indicators in Appendix E: Outcome indicator set for short-term impacts. The long-term outcomes are detailed in the subsequent sections below.

Healthier eating and food systems

The *VPHWOF* focuses on outcomes measured at the population level and guides how we monitor the impacts of interventions on the health and wellbeing of our catchment population. WPHU will continue to add on to outcome and impact monitoring as we progress. Data from sources such as the Department of Health (DH), Australian Bureau of Statistics (ABS) and Department of Education and Training (DET) will be used to measure the changes to healthier eating and food systems over time, as appropriate. An overview of some of the outcomes, indicators, measures and WPHU add-ons for healthier eating and food systems is detailed below in Table 8. It is important to note that this is not a comprehensive list and will continue to expand as we progress. Additionally, we will continue to work with local and state stakeholders as well as our Data, Epidemiology and Surveillance team to identify emerging data sources and evidence from the catchment.

We will also report and measure system-level, program-level and individual-level outcomes as we recognise outcomes monitoring to be a dynamic and ongoing process. Outcome monitoring at different levels will provide emerging evidence for direction setting, leadership and building alliances.

Table 8: Healthier eating and food systems outcome indicators

VPHWOF domain	**Victorians are healthy and well**
Outcomes	Victorians have good physical health Victorians act to protect and promote health
Indicators	✓ **Increase healthy eating and active living** ✓ **Reduce preventable chronic disease** ✓ **Reduce overweight and obesity**
Measures	- Proportion of adults, adolescents and children who consume sufficient fruit and vegetables - Mean serves of fruit and vegetable for adults, adolescents and children - Proportion of adults, adolescents and children who consume sugar-sweetened beverages daily - Discretionary food consumption of adults, adolescents and children - Proportion of infants exclusively breastfed to 3 months of age - Proportion adults, adolescents and children who are sufficiently active - Proportion of adolescents and children who use excess electronic media for recreation - Proportion of adults who are overweight or obese (measured)

VPHWOF domain	**Victorians are healthy and well**
	- Proportion of adults who are overweight or obese (self-reported)
WPHU add-on	✓ Economic impact and benefits of food system interventions ✓ Co-benefits of healthier eating with a focus on mental health ✓ Reduction in the number of food-insecure individuals ✓ Implementation and uptake of climate-smart resilience building measures to mitigate impacts of climate change on food production
Data sources	- Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) ABS - General Social Survey (GSS) ABS - Maternal and Child Health Collection (MCHC) DET - National Health Survey (NHS) ABS - Victorian Population Health Survey (VPHS) DHHS - Victorian Student Health and Wellbeing Survey (VSHAWS) DET also known as About You - Victorian Child Health and Wellbeing Survey (VCHWBS) DET - National Secondary Students' Diet and Activity Survey (NaSSDA survey) CCV - Victorian Integrated Survey of Travel and Activity (VISTA) DEDJTR

Specific action outcomes

In addition, specific action outcomes for INFANT have been identified and will consist of formative and summative evaluations such as process evaluation, output monitoring, impact and outcome evaluation (see Table 9).

The breakdown of the specific outcomes of the INFANT program are listed in the table below and is complemented by the outcome indicator set available in Appendix E: Outcome indicator set for short-term impacts

Table 9: INFANT specific outcome indicators

INFANT area	Specific outcome indicators	Methodology
Formative (needs assessment)	Understanding of the need and acceptability within the CALD community Understanding of the existing landscape, barriers and enablers for the INFANT program	Feedback through engaging with community groups from the target population Engagements with relevant stakeholders such as local governments and MCHN staff
Boost capacity	Facilitators available for INFANT delivery Local governments engaged with INFANT and implementing the program	Increased training uptake Increasing the diversity in types of facilitators – for example, bicultural workers, public health officers, health promotion officers and community connectors through boosted training uptake Boosting the capacity of the catchment for INFANT implementation and delivery though engagement with LGAs and increasing buy-in
Cultural adaptation	Culturally adapted INFANT resources Participation of families from CALD backgrounds in the program Delivery of culturally adapted sessions of INFANT	Developing resources such as videos, pamphlets and training material adapted to different language groups Tracking participation by CALD families and number of sessions of culturally adapted program

INFANT area	Specific outcome indicators	Methodology
	Healthier eating behaviours in children from CALD backgrounds	Measuring change in healthier eating behaviour in children from CALD backgrounds through surveys or focus groups
Embed and implement	INFANT embedded and implemented at system level	Engaging stakeholders for scale up of INFANT through LGAs and prevention network action groups Supporting stakeholders such as LGAs with implementation plans
Innovate	Uptake, integration and use of INFANT program messaging and delivery in non-conventional ways	Innovative uptake of INFANT messaging in collateral projects such as perinatal hepatitis B project Innovative incorporation of INFANT in workplans of relevant NGOs and community health programs
Economic evaluation	Demonstration of economic benefits of healthier eating and chronic disease prevention through the INFANT program in our catchment	Economic modelling and cost-effectiveness analysis through Deakin University's ACE-obesity tool[71] applied to the catchment's population

Vaping and tobacco

Data from sources such as the Department of Health (DH), Australian Bureau of Statistics (ABS), Department of Education and Training (DET) and Cancer Council Victoria (CCV) will be used to evaluate the impacts of vaping and tobacco-related harm initiatives over time and as per the VPHWOF. In addition to population outcomes, we will also report and measure system-level, program-level and individual-level outcomes as we recognise outcomes monitoring and evaluation to be a dynamic and ongoing process. We will continue to work with the Data, Epidemiology and Surveillance team, local stakeholders and state organisations such as QUIT Victoria to identify emerging evidence and data sources for reducing vaping and tobacco-related harm in the catchment. An overview of some of the outcomes, indicators, measures and WPHU add-ons for evaluating vaping and tobacco-related harm reduction is detailed below in Table 10 noting that this list is not exhaustive and will continue to expand as we progress.

Table 10: Vaping and tobacco outcome indicators

***VPHWOF* domain**	**Victorians are healthy and well**
Outcomes	Victorians have good physical health Victorians act to protect and promote health
Indicators	✓ **Reduce smoking** ✓ **Reduce preventable chronic disease** ✓ **Reduce overweight and obesity**
Measures	- Proportion of adults and adolescents who smoke - Age of smoking initiation - Proportion of children who live with a smoker who smokes inside the home - Proportion of adults who are overweight or obese (measured) - Proportion of adults who are overweight or obese (self-reported)
WPHU add-on	✓ Identify best practice evidence-based programs for collective impact ✓ Gather community and place-based data and intelligence for evidence informed decisions ✓ Advocate for policy and legislation for vaping
Data sources	- Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) ABS - Australian school students' alcohol and drug survey (ASSAD) CCV - National Health Survey (NHS) ABS - National Drug Strategy Household Survey (NDSHS) AIHW - Smoking and Health Survey CCV - Victorian Population Health Survey (VPHS) DHHS - Victorian Student Health and Wellbeing Survey (VSHAWS) DET also known as About You - Victorian Child Health and Wellbeing Survey (VCHWS) DET

Climate change and health

The *VPHWOF* provides us guidance on monitoring the outcomes for climate change and its impacts on health. For measuring population-level outcomes, we will utilise data from sources such as the Department of Health, Australian Bureau of Statistics and the Department of Energy, Environment and Climate Action (DEECA). An overview of some of the outcomes, indicators, measures and WPHU add-ons for climate change and its impacts on health is detailed below in Table 11. It is important to note that this is not a comprehensive list and will continue to expand as we progress. We will also measure outcomes at a system, individual and program-level. We will continue to work with the Data, Epidemiology and Surveillance team as well as local and state-wide stakeholders like Western Alliance for Green House action WAGA and Sustainability Victoria to identify emerging data sources and evidence for direction setting and building alliances for adapting to the impacts of health due to climate change.

Table 11: Climate change and health outcome indicators

***VPHWOF* domain**	**Victoria is liveable**
Outcomes	Victorians belong to resilient and liveable communities Victorians have access to sustainable built and natural environments
Indicators	✓ **Increased adaptation to the impacts of climate change** ✓ **Increased environmental sustainability and quality**
Measures	- Excess death during extreme heat and heatwaves - Number of days where the national objective of PM10 was not met - Proportion of population with reticulated drinking water that complies with E.coli water quality standard - Notification rate of salmonellosis - Renewable energy generation as a proportion of total electricity generation - Per capita greenhouse gas emissions - Community resilience
WPHU add-on	✓ Evaluation through co-benefits approach ✓ Australia specific lifecycle CO_2 calculator ✓ Community resilience indicators such as measures of community connectedness, employment and economic diversity, quality and access of critical infrastructures
Data sources	- Air monitoring network Environment Protection Authority (EPA) - Annual report on drinking water quality in Victoria DHHS - Australian Energy Statistics, Department of Industry and Science - Causes of Death ABS - Public Health Event Surveillance System (PHESS) DHHS - National Greenhouse Gas Inventory, Department of the Environment and Energy

Stakeholder engagements

The Quality of Engagement Evaluation Tool (QuEET) has been developed by our Population Health Promotion team to measure the quality and effectiveness of stakeholder engagement activities and provide a mechanism for continuous quality improvement. The self-rated tool

captures both quantitative measures of stakeholder engagement, as well as qualitative data on emerging themes.

QuEET is informed by principles outlined in the *VicHealth Stakeholder Engagement Framework 2018–2023* [74] and addresses the WPHU Strategic Partnerships Plan. The QuEET tool is in its pilot phase and aims to build evaluation capacity in the catchment.

Systems-based impact and connectedness

Efforts to elevate and connect population health initiatives and programs at the systems level are evaluated and monitored through various reporting mechanisms – for example, the increase in the number of organisations and participants connected to and accessing state-wide programs. Appendix E: Outcome indicator set for short-term impacts outlines some of the short-term indicators.

Long-term indicators will evaluate the extent and set up of cross-sector partnerships between population health agencies and community-based organisations. They will evaluate the data sharing and integration efforts that enable informed and effective decision-making, and also the extent of resources and infrastructure sharing that supports an integrated approach to population health promotion and build capacity in the sector.

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Appendices

Appendix A: Local stakeholders

Stakeholder name	Type of stakeholder
Brimbank City Council	LGA
Cancer Council Victoria	Not-for-profit organisation
City of Melbourne	LGA
cohealth	Community health service
Deakin Health Economics (DHE), Deakin University	University
Department of Families, Fairness and Housing	Victorian Government
Department of Health	Victorian Government
GenWest	Not-for-profit organisation
Hobsons Bay City Council	LGA
Institute of Physical Activity and Nutrition (IPAN), Deakin University	University
IPC Health	Community health service
Maribyrnong City Council	LGA
Melton City Council	LGA
Mercy Health	Hospital and health service
Merri Health	Community health service
Merri-bek City Council	LGA
Moonee Valley City Council	LGA
North Western Melbourne Primary Health Network	Primary health network
Peter MacCallum Cancer Centre	Hospital and health service
Regional Department of Health	Victorian Government
The Royal Children's Hospital Melbourne	Hospital and health service
The Royal Melbourne Hospital	Hospital and health service

Appendix A Table 1: Local stakeholders in WPHU (continued over page)

Stakeholder name	Type of stakeholder
The Royal Women's Hospital	Hospital and health service
VicHealth (Victorian Health Promotion Foundation)	Not-for-profit organisation
VACCHO (Victorian Aboriginal Community Controlled Organisation)	Community-Controlled Organisation
Victorian Aboriginal Health Services	Health service
Western Health	Hospital and health service
Western Health Community Health Service	Community health service
Wyndham City Council	LGA

Appendix A Table 1 (continued): Local stakeholders in WPHU

The table above illustrates some of the various local stakeholders involved in the WPHU catchment. The establishment of strategic and sustained partnerships is ongoing. We will engage with additional organisations in the future for collaboration and to achieve shared goals.

Appendix B: Victorian Government strategies, plans and initiatives

Victorian Government strategies and plans supporting the *Victorian health and wellbeing plan 2019–2023*, *Victorian Cancer plan 2020–2024*, and actions for gender equality and family violence.

The following strategies and plans informed the development of the WPHU catchment plan:

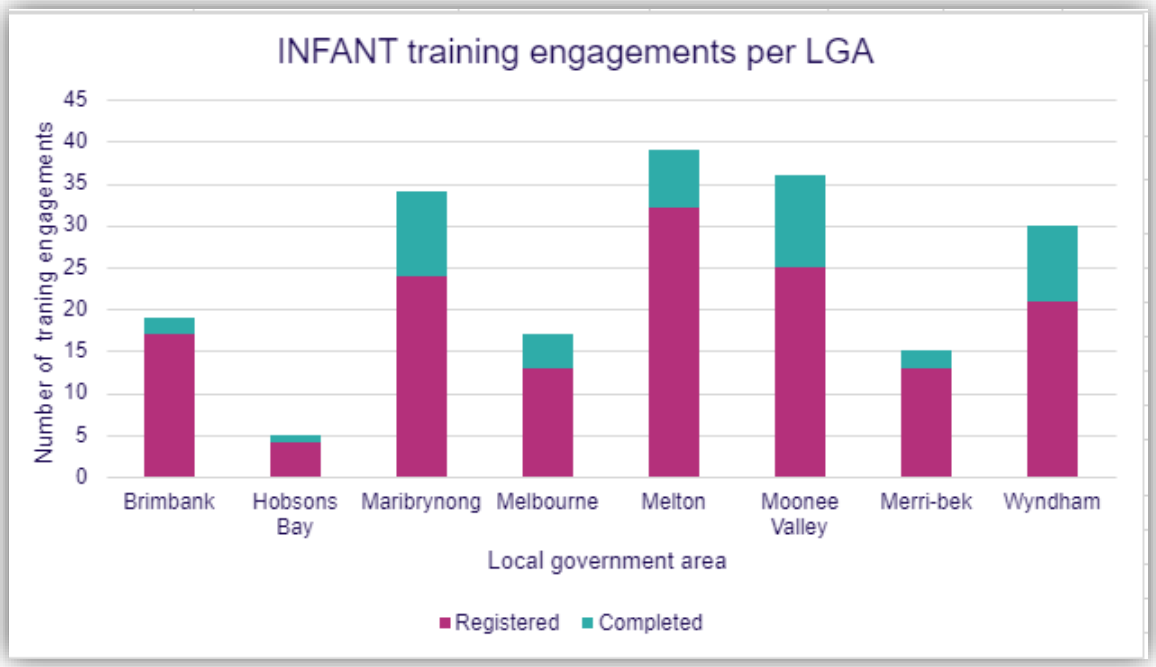
- Healthy Kids, Healthy Futures: Victoria's five-year action plan to support children and young people to be healthy, active and well
- The Victorian sexual and reproductive health and viral hepatitis strategy 2022–30
- Victorian Cancer Screening Framework Strategic Plan (2022–26)
- Victorian Action Plan to Prevent Oral Disease 2020–2030
- Ageing Well Action Plan: An action plan for strengthening wellbeing for senior Victorians 2022–2026
- Victorian Government's climate change strategy and adaptation plans
- Free from violence: Victoria's strategy to prevent family violence and all forms of violence against women

Existing state-wide initiatives

INFANT (INfant Feeding, Active play and NuTrition)

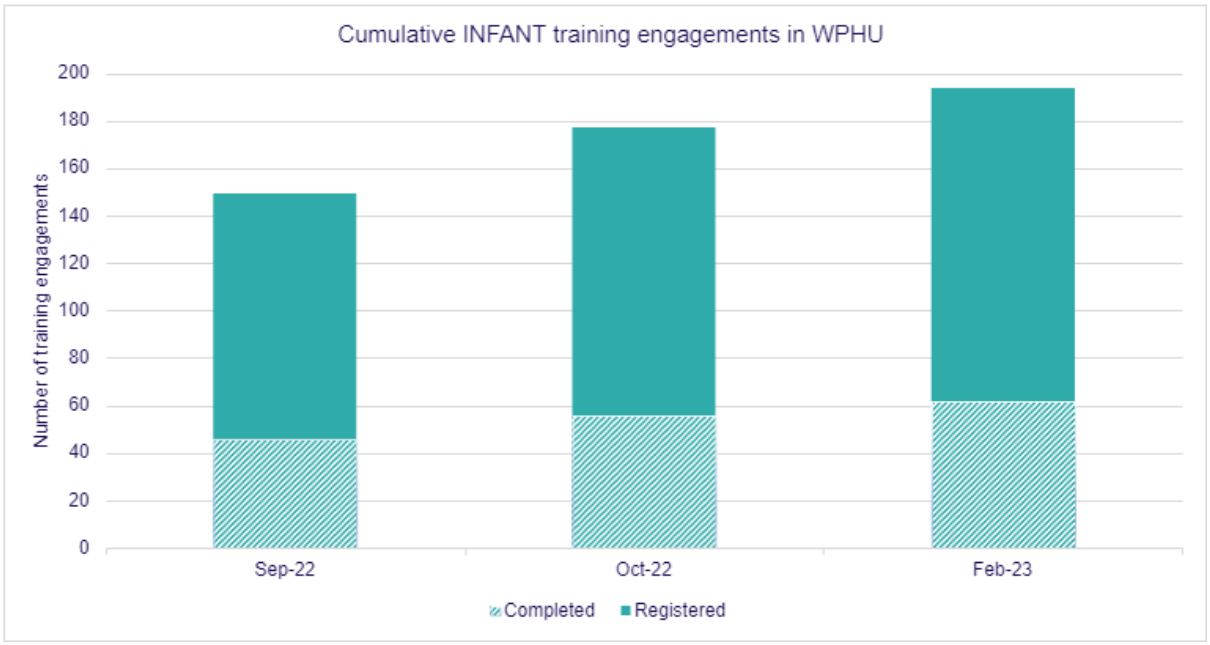
As of September 2022, 4 out of 8 WPHU LGAs were implementing the INFANT program.

Overall, there were 149 registrations for the facilitator training. The majority of enrolments included healthcare professionals such as maternal and child health nurses and dietitians, with fewer enrolments from playgroup facilitators, health promotion officers, parent support workers, and Healthy Mothers, Healthy Babies coaches. Thirty percent of the registered staff completed the training (n=46), indicating limited capacity of the interested participants (Appendix B Figure 1).



Appendix B Figure 1: INFANT training engagement per LGA as of September 2022

Following the establishment of the health promotion team, uptake of INFANT training was promoted through bespoke INFANT training offers. Appendix B Figure 2 illustrates a consistent upward trend in the number of INFANT registrations and completions, beginning in September 2022 and continuing through to the present.

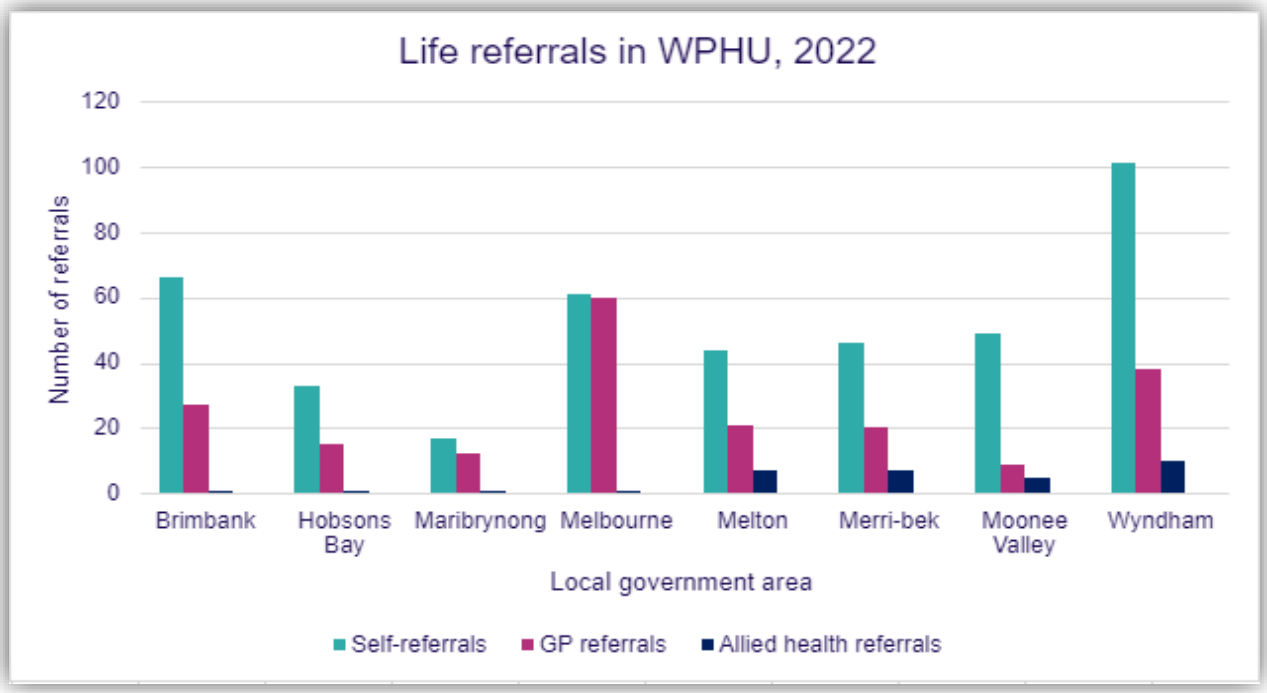


Appendix B Figure 2: INFANT training engagements in WPHU

Life!

Life! is a free healthy lifestyle program that helps improve eating habits, increase physical activity and manage stress. Life! is funded by the Victorian Government and managed by Diabetes Victoria. The program includes 7 sessions delivered over a 12-month period. Referrals made in 2021 were the most recently available dataset (see Appendix B Figure 3).

Wyndham, Melbourne and Brimbank LGAs showed high engagement with Life! with a total of 149, 122 and 94 referrals respectively. The program received a high influx of 417 self-referrals across all WPHU LGAs (ranging from 17 to 101). General practitioners made the second most referrals across the catchment (n= 202). Out of 652 referrals made to the program, 5% of the referrals were attributable to allied health professionals.



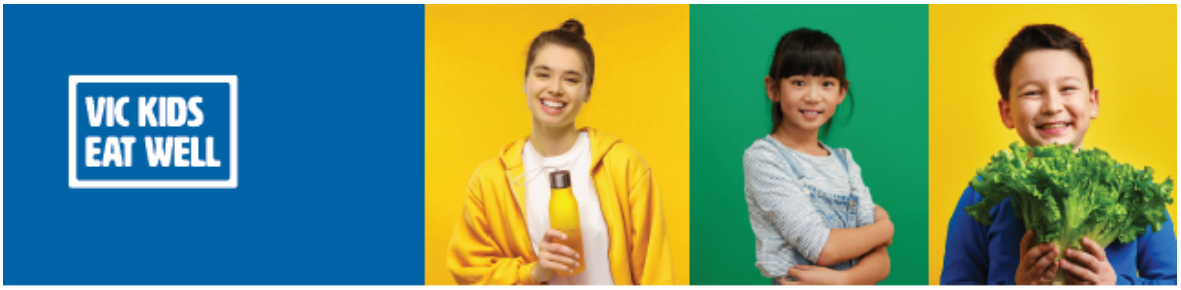
Appendix B Figure 3: Life referrals per LGA in WPHU

Vic Kids Eat Well

Vic Kids Eat Well provides schools, outside hours school care (OSHC), community organisations and sports clubs with clear, simple and achievable steps to making healthy food and drink options available for children. Organisations can choose from and work through 4 areas including ‘refresh the fridge’, ‘switch up the snacks’, ‘change up the menu’ and ‘put ‘fun’ into fundraising and marketing’. They can go with either ‘big bite’ change or starting small with ‘small bite’ change. Small bite changes can be as minimal as skipping the deep fryer or offering healthier snacks. As of March 2023, Vic Kids Eat Well reaches 36 schools,18 OSHCs, 2 community facilities, 10 sports clubs, and one sport and recreational facility in the WPHU catchment, making up 7.08% of Victorian OSHC and 8.78% of Victorian schools.

As of 31 March 2023, organisations from 7 out of our 8 LGAs have completed their big bite journey. Brimbank, Melton and Wyndham LGAs showed steady increases in implementing big bites since January 2022. There were more organisations progressing through small bites within the Vic Kids Eat Well settings as compared to big bites. From September 2022, 172 settings have progressed through small bites, increasing program completions to 211 by March 2023.

The below 2 snapshots are extracts from a Vic Kids Eat Well report summarising activity in the WPHU catchment.



This document provides data detailing the Western Public Health Units (WPHU) participation in Vic Kids Eat Well.

Data in document is accurate as of 30th April 2023.

Vic Kids Eat Well is supported by the Victorian Government and delivered by Cancer Council Victoria in partnership with Nutrition Australia.

Vic Kids Eat Well helps schools, outside school hours care (OSHC), sports clubs and community organisations transform their food and drink environments.

Vic Kids Eat Well helps organisations:

1. *Swap sugary drinks for water and healthier options*
2. *Swap to healthier snacks*
3. *Increase fruit and veggies in meals*
4. *Provide healthier fundraising and meal deals.*

Changes can be incremental ('small bites') or more substantial ('big bites').

VIC KIDS EAT WELL IN WPHU

36 schools

10 sports clubs

19 OSHC services

3 community facilities

1 sports and recreation facility

VIC KIDS EAT WELL IN WPHU

14% of Victorian schools are in the WPHU.

16% of Victorian OSHC services are in the WPHU.

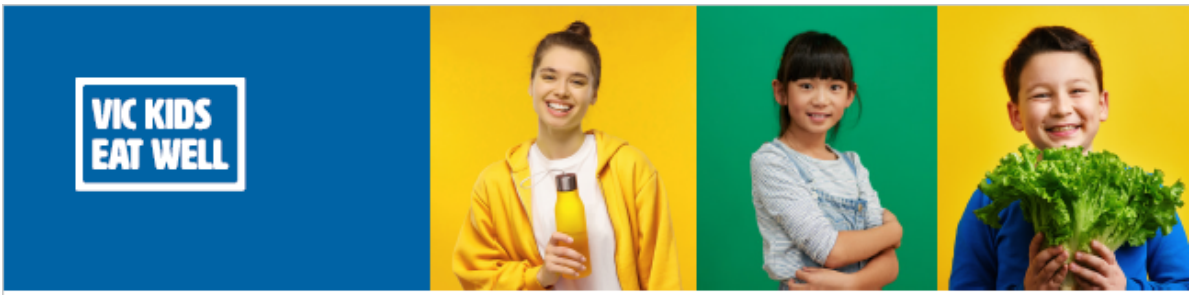
10% of all schools, OHSC, sports clubs, and community organisations registered for Vic Kids Eat Well are in the WPHU.

11% of Vic Kids Eat Well schools are in the WPHU.

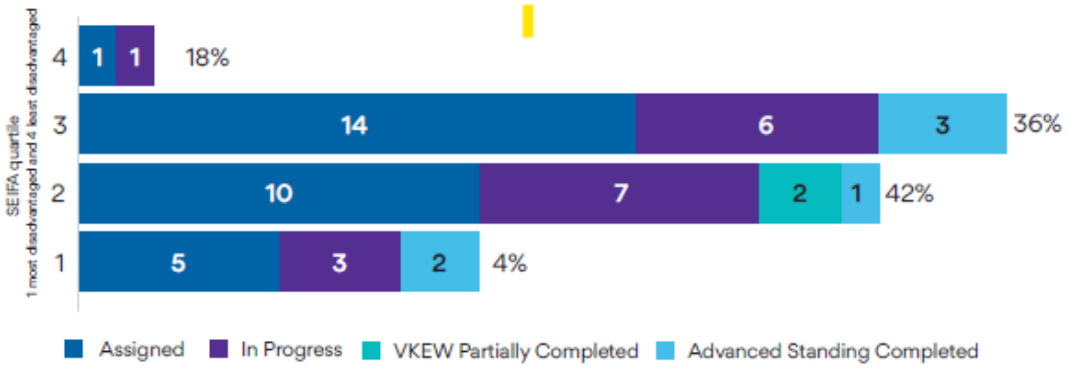
10% of Vic Kids Eat Well OSHC care services are in the WPHU.

VIC KIDS EAT WELL

Cancer Council Victoria · Nutrition Australia · Victoria State Government



WPHU VIC KIDS EAT WELL UPTAKE AND PROGRESS BY SEIFA QUARTILE IN SCHOOLS AND OSHC



'Assigned' = organisations that have registered only. 'In Progress' = completed the baseline and/or working on 'small bites' 'VKEW partially completed' = completed at least one small bite. 'Advanced Standing Completed' = all bites completed or not applicable before signing up to Vic Kids Eat Well.

HOW WPHU COMPARES

37% organisations registered with Vic Kids Eat Well in WPHU are working towards at least one small bite, compared to an average of 54% in other LPHUs.

HEALTH PROMOTERS IN WPHU

75% LGAs in WPHU have at least one health promoter registered with Vic Kids Eat Well, compared with 95% of LGAs in other LPHUs.

4% education settings in WPHU are in the SEIFA quartile of greatest disadvantage compared to 22% in other LPHUs

MOST POPULAR HEALTHY EATING ACTIONS AMONG VIC KIDS EAT WELL ORGANISATIONS IN WPHU

	% WPHU orgs working on this area (n = 23)	% orgs in other LPHUs working on this area (n =334)
Healthier snacks	61%	62%
Increase fruit & veggies in meals	48%	57%
Swap sugary drinks	39%	40%
Healthier fundraising & meal deals	30%	44%

VIC KIDS EAT WELL

Cancer Council Victoria · Nutrition Australia · Victoria State Government

RESPOND (Reflexive Evidence and Systems interventions to Prevent Obesity and Non-communicable Disease)

RESPOND is a shared community approach to healthy children funded by the National Health and Medical research Council (NHMRC). The most recent data available for RESPOND is from the year 2018. In the WPHU catchment, there are primary schools from 3 of the 8 LGAs engaged in the program.

LGA	School
Brimbank	Ardeer Primary School
Melton	Parkwood Green primary School
	Rockbank Primary School
Wyndham	Al-Taqwa College

Appendix B Table 1: Primary Schools within WPHU who are participating in the RESPOND

Healthy Eating Advisory Service (HEAS)

HEAS enables organisations such as schools, early childhood and outside school hours care, workplaces, hospitals and health services, sport and recreation centres and long day care centres to create healthy eating environments. Appendix B Table 2 shows the settings engaged with HEAS across our catchment. Appendix B Table 3 shows the number of settings overall engaged with HEAS.

Settings	LGAs							
	Brimbank	Hobsons Bay	Maribyrnong	Melbourne	Melton	Merri-bek	Moonee valley	Wyndham
Schools		✓	✓	✓	✓	✓	✓	✓
Early childhood and OSCH	✓	✓	✓		✓	✓	✓	✓
Workplaces	✓	✓	✓	✓	✓	✓	✓	
Sport and recreation centres	✓			✓	✓			
Hospital and other health services	✓	✓	✓	✓	✓			✓
Long day care centres	✓	✓	✓	✓	✓	✓	✓	✓

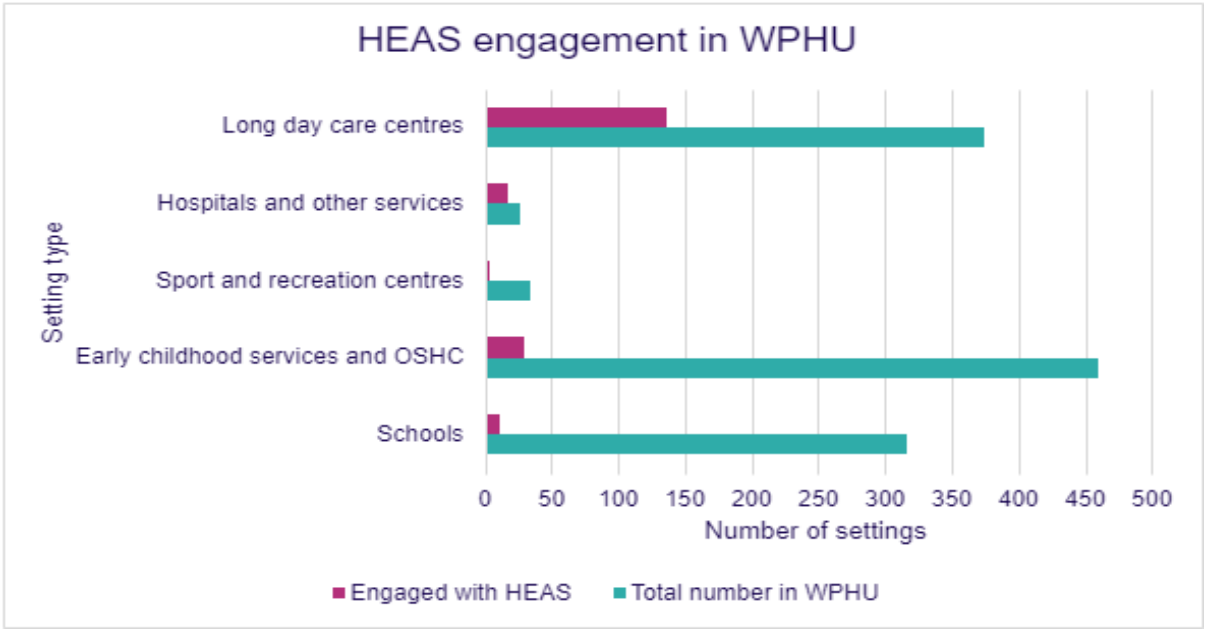
Appendix B Table 2: Settings in LGAs engaged with HEAS

Setting type	Total no. of settings in WPHU	No. of settings engaged with HEAS
Schools	316	12
Early childhood services and OSHC	460	29
Sport and recreation centres	34	4
Hospitals and other services	26	17
Long day care centres	375	136

Appendix B Table 3: Total no. of settings and settings engaged with HEAS

Out of 316 schools, 12 schools engaged with HEAS for implementation support or used at least one service offered by HEAS. Seven schools have completed at least one assessment in food checker, while none of the schools met the menu planning guidelines.

Despite early childhood services and OSCH having low rates of engagement with accessing HEAS support, services in Maribyrnong and Wyndham LGAs had high rates of staff who completed training (25 and 99 respectively). The WPHU catchment has 26 hospitals and other health services across the LGAs with 17 of them engaged with HEAS. Although there were fewer long day care centres, great traction was observed through high levels of engagement with HEAS (6 to 40), staff completion of training (10 to 94), and compliance with menu planning guidelines (11 to 32). Appendix B Table 4 shows engagement with HEAS by setting.



Appendix B Figure 4: Total organisations in WPHU that completed small bites

QUITLINE

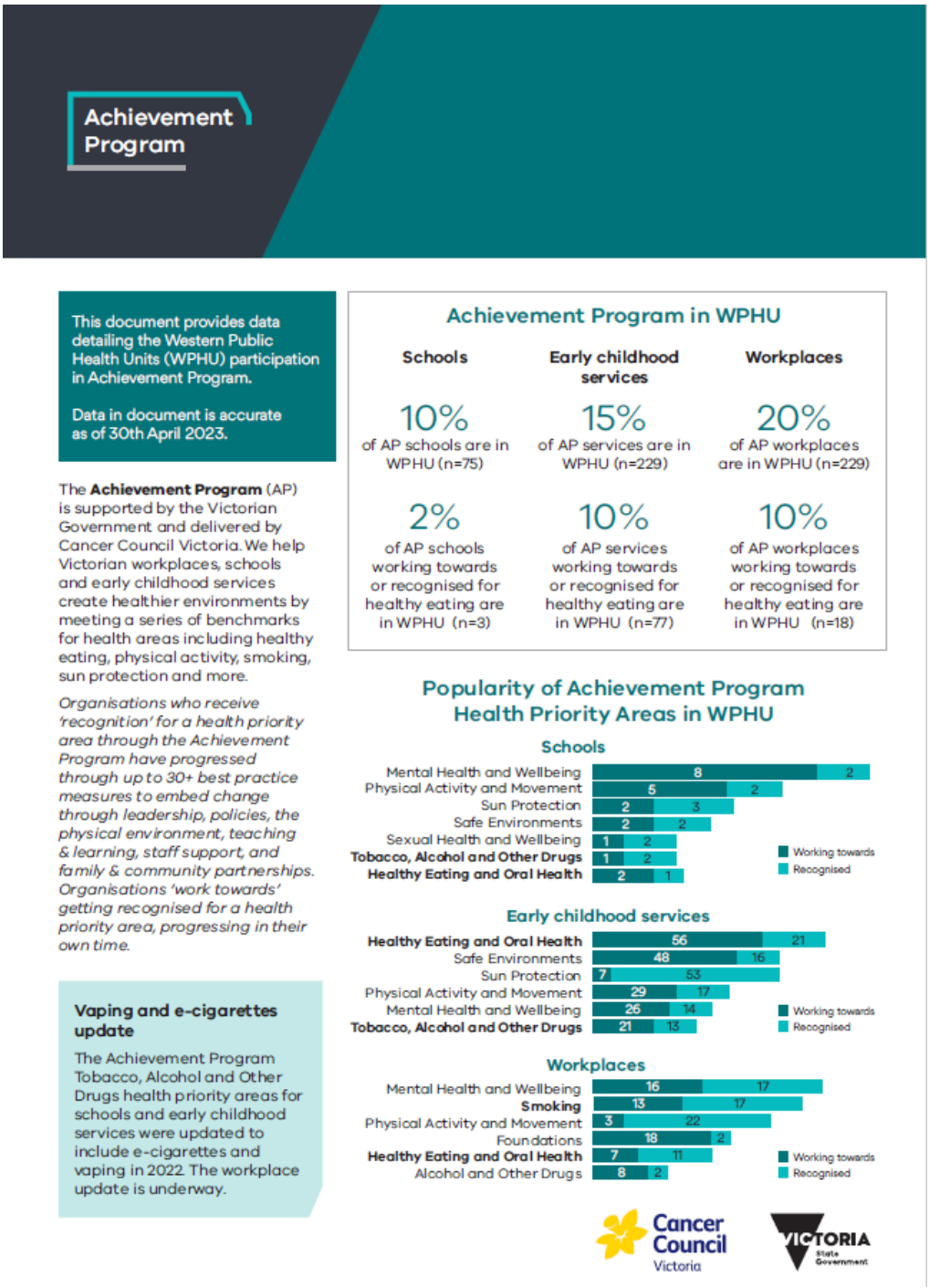
Data request acknowledged, waiting for data.

Smiles 4 Miles

The data has been approved for release and has been provided to the Public Health Division. The Public Health Division will be sharing the data through a secure SharePoint to all LPHUs.

The Achievement Program

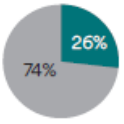
The below 2 snapshots show the Achievement Program participation within the WPHU catchment.



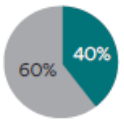
Achievement Program

26% of Achievement Program schools and early childhood services in WPHU are in areas of greater socio-economic disadvantage, compared to **40%** in other LPHUs.

Achievement Program schools and early childhood services in WPHU



Achievement Program schools and early childhood services in other LPHUs



% Total AP organisations received recognition for or working towards **Healthy Eating**

18% WPHU vs. **33%** Other LPHUs

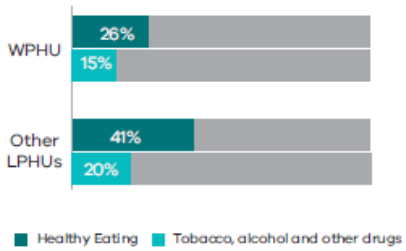
% Total AP organisations received recognition for or working towards **Tobacco, Alcohol and Other Drugs**

12% WPHU vs. **20%** Other LPHUs

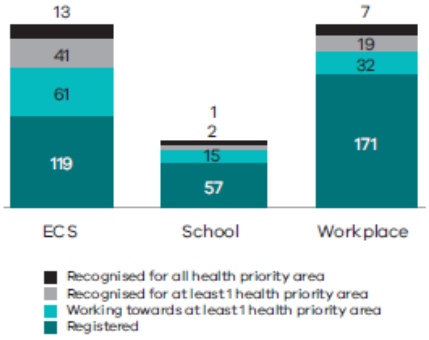
26% of WPHU Achievement Program settings in areas of greater socio-economic disadvantage have received recognition for or are working towards healthy eating, compared to **41**% of settings in other LPHUs.

15% of WPHU Achievement Program settings in areas of greater socio-economic disadvantage have received recognition for or are working towards tobacco, alcohol and other drugs, compared to **20**% of settings in other LPHUs.

% AP schools and services in areas of greater socio-economic disadvantage recognised for or working towards Healthy Eating and Tobacco, Alcohol & Other Drugs



Organisations making changes in your LPHU



Cancer Council Victoria

VICTORIA State Government

Appendix C: Data and analysis

Data sources

Sources of data included in Data gathering and analysis*:*

- ABS Census of Population and Housing, 2021
- ABS Births, Australia
- ABS Deaths, Australia
- Public Health Information Development Unit (PHIDU), Torrens University Australia
- Australian Institute of Health and Welfare (AIHW)
- Australian Urban Observatory, 2021
- Victorian Population Health Survey
- North Western Melbourne Primary Health Network Health Needs Assessment 2022 to 2025
- Victorian Government Community Profile – People and Households Dashboard
- Victorian Public Health and Wellbeing Outcomes Dashboard
- Victorian Department of Health cancer screening data (2023)
- Victorian Department of Health communicable disease notifications (2022)

This included several unique analyses that built on specific areas of need not otherwise covered in the resources above. Additional information is available on request by sending an email to WPHU@wh.org.au marked for the attention of the Population Health Promotion team.

Where possible, we examined data at LGA level and consolidated LGA data to compare the WPHU catchment with metropolitan LPHU catchments and with Victoria. Where data sources were unavailable within these boundaries, the ABS geographical unit of Greater Melbourne Capital City Statistical Area (GCCSA) was used and labelled greater Melbourne. Note that greater Melbourne has a slightly larger catchment than the metropolitan LPHUs and does cross through some outer suburban LGAs. Where data allowed, we performed direct age standardisation to enable comparisons of the WPHU catchment (which has a wide variation in population age distributions) across LGAs and with other parts of Victoria. Where indirect age-standardisation was used, comparisons between LGAs is not recommended, however, standardised ratios enable comparison between each LGA to the Australian reference.

Data interpretation guidance

Age standardisation: Age standardisation is used to adjust for the effects of different age structures between populations. For instance, LGAs with a younger population are likely to have lower rates of diseases associated with age, while areas with older populations are likely to have higher rates of disease, making side by side comparisons between regions or subgroups within a population difficult.

Both direct and indirect age-standardisation has been used within this document (method will be stated alongside the data), with the 2001 Australian population used as the standard. Indirect age standardisation is reported as standardised ratios (SR). The SRs presented are the ratio between the observed events (the actual number of events) within each region and the expected events, if the age-specific rates from the Australian population were to apply. A SR above 100 indicates the rate within the region is higher than the expected number of events, whereas a SR below 100 indicates the rate is lower than the expected number of events. Hence, a SR of 148 indicates that the number of events is 48% greater than the expected rate, based on rates from the Australian standard population.

	Total area	Residential area	Commercial area	Education area	Hospital / medical area	Industrial area	Other	Parkland area	Primary area	Total pop'n (n)	Pop'n density (persons per km^2 of residential area)
Brimbank	123.4	58.4	3.1	3.1	0.2	27.0	6.6	23.0	0.0	194,563	3,331.7
Hobsons Bay	64.2	26.0	0.9	1.2	0.0	18.8	0.0	14.9	0.0	91,265	3,509.9
Maribyrnong	31.2	16.5	2.4	0.8	0.1	5.4	1.4	4.1	0.0	85,281	5,178.6
Melbourne	37.5	8.2	12.2	1.2	1.1	5.4	0.0	7.6	0.0	149,551	18,187.1
Melton	527.5	115.7	2.5	2.6	0.0	14.5	37.2	24.5	328.1	179,072	1,547.9
Merri-bek	51.0	37.1	1.5	1.3	0.1	2.7	0.0	7.8	0.0	171,181	4,611.8
Moonee Valley	43.1	29.8	1.6	1.4	0.1	0.6	0.0	5.7	0.0	121,734	4,089.5
Wyndham	542.1	171.3	5.3	6.6	0.2	28.7	18.4	89.2	221.7	291,917	1,703.8
WPHU	1,420.0	463.0	29.5	18.2	1.8	102.9	63.5	176.7	549.8	1,284,564	2774.4

Appendix C Table 1: Land area categorisation, population, and population density by WPHU LGA in 2021

Data shown are in km^2 unless otherwise stated.
Source: Australian Bureau of Statistics. Allocation files [Internet]. Canberra: ABS; Jul 2021-Jun 2026

	ERP 2020	Proportion of WPHU ERP	Projected pop 2025	% increase 2020–2025	Projected Pop 2030	% increase 2020–2030
Brimbank	217,318	15.8%	234,060	7.7	248,533	14.4
Hobsons Bay	104,169	7.6%	113,968	9.4	122,953	18.0
Maribyrnong	96,995	7.1%	109,775	13.2	121,643	25.4
Melbourne	187,673	13.6%	219,220	16.8	241,478	28.7
Melton	169,697	12.3%	205,059	20.8	239,147	40.9
Merri-bek	190,827	13.9%	213,680	12.0	234,972	23.1
Moonee Valley	132,479	9.6%	144,228	8.9	155,028	17.0
Wyndham	276,530	20.1%	340,353	23.1	400,706	44.9
WPHU	1,375,688	-	1,580,343	14.9	1,764,460	28.3
Greater Melbourne	5,228,742	-	5,836,227	11.6	6,383,515	22.1
Victoria	6,760,752	-	7,447,358	10.2	8,054,587	19.1

Appendix C Table 2: Projected population and percentage increase in population for 2025 and 2030 by WPHU LGAs, Victoria and metropolitan Melbourne.

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia Material from: Social Atlas of Australia: Victoria – LGAs (online) 2023. Accessed April 2023

	0 to 14 yrs n (%)	15 to 64yrs n (%)	65+yrs n (%)	Total population	Dependency ratio	Youth dependency ratio	Old age dependency ratio
Brimbank	33,764 (17.3)	129,165 (66.4)	31,684 (16.3)	194,618	50.7	26.1	24.5
Hobsons Bay	16,938 (18.5)	59,669 (65.3)	14,716 (16.1)	91,322	53.0	28.4	24.7
Maribyrnong	13,259 (15.6)	62,671 (73.5)	9,274 (10.9)	85,209	36.0	21.2	14.8
Melbourne	10,100 (6.8)	128,604 (86.0)	10,914 (7.3)	149,615	16.3	7.9	8.5
Melton	43,589 (24.4)	119,148 (66.6)	16,223 (9.1)	178,960	50.2	36.6	13.6
Merri-bek	26,507 (15.5)	121,992 (71.2)	22,853 (13.3)	171,357	40.5	21.7	18.7
Moonee Valley	19,574 (16.1)	81,220 (66.7)	21,064 (17.3)	121,851	50.0	24.1	25.9
Wyndham	74,129 (25.4)	195,555 (67.0)	22,330 (7.6)	292,011	49.3	37.9	11.4
WPHU	237,855 (18.5)	898,015 (69.9)	149,072 (11.6)	1,284,942	43.1	26.5	16.6
Greater Melbourne	891,585 (18.0)	3,286,118 (66.8)	740,045 (15)	4,917,750	49.7	27.1	22.5
Victoria	1,169,456 (18.1)	4,241,203 (65.2)	1,092,838 (16.8)	6,503,491	53.3	27.6	25.8
Australia	4,638,004 (18.2)	16,406,696 (64.5)	4,378,092 (17.2)	25,422,788	55.0	28.3	26.7

Appendix C Table 3: Broad age groups and dependency ratios by LGA from estimated resident population, 2021

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10-year average
WPHU	15.3	16.1	15.0	14.6	14.3	15.6	15.0	14.1	13.7	12.8	13.1	14.4
SEPHU	12.7	13.8	12.6	12.5	12.2	13.4	13.2	12.1	11.7	11.0	11.5	12.4
NEPHU	12.6	13.2	12.5	12.4	11.9	13.1	12.7	11.9	11.6	10.6	11.0	12.1
Goulburn Valley	12.2	13.1	12.6	12.1	11.0	12.9	12.1	12.2	10.9	11.0	11.3	11.9
Loddon Mallee	12.2	12.6	11.9	11.9	11.0	12.4	12.1	11.5	11.0	10.6	11.0	11.6
Barwon	11.6	12.5	12.1	11.3	11.4	12.3	11.6	11.4	10.8	10.9	11.1	11.5
Grampians	12.0	12.5	12.3	11.5	11.4	12.2	11.8	11.1	11.1	10.4	10.8	11.6
Ovens-Murray	11.6	12.8	10.6	10.9	11.3	11.3	11.6	10.8	10.9	10.0	10.6	11.1
Gippsland	11.8	12.2	11.3	11.4	10.6	11.9	11.4	10.9	10.1	9.9	10.3	11.1
Victoria	12.9	13.7	12.8	12.6	12.2	13.4	13.0	12.2	11.8	11.1	11.5	12.5

Appendix C Table 4: 10-year crude birth rates (live births per 1,000 population) by Victorian LPHUs

Source: ABS, Births, Australia

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Brimbank	14.7	15.7	14.4	14.1	14.0	15.0	14.4	13.6	12.5	11.8	11.1	13.7
Hobsons Bay	15.2	15.1	14.2	13.9	13.8	15.7	14.1	13.5	13.5	12.5	12.4	14.0
Maribyrnong	16.8	18.6	17.2	16.3	15.2	16.4	16.3	14.6	15.1	13.0	13.4	15.7
Melbourne	9.6	9.4	8.4	8.7	8.8	9.1	8.0	8.0	7.1	7.1	8.2	8.3
Melton	18.1	19.0	16.8	16.3	15.9	17.3	16.6	15.8	15.8	14.8	15.5	16.4
Merri-bek	15.0	15.3	14.2	14.4	14.0	15.2	15.5	14.2	14.0	12.7	13.3	14.3
Moonee Valley	12.2	12.5	12.1	11.2	10.9	12.6	12.1	11.1	11.1	9.9	10.7	11.5
Wyndham	19.1	21.4	20.5	19.8	19.0	20.7	20.0	19.0	18.2	17.0	16.3	19.0
WPHU Total	15.3	16.1	15.0	14.6	14.3	15.6	15.0	14.1	13.7	12.8	13.1	14.4

Appendix C Table 5: 10-year crude birth rate (live births per 1,000 population) by WPHU LGAs

Source: ABS, Births, Australia

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10-year total
Brimbank	2,812	3,036	2,822	2,806	2,818	3,065	2,964	2,812	2,584	2,399	2,180	30,298
Hobsons Bay	1,329	1,334	1,269	1,253	1,264	1,466	1,333	1,282	1,294	1,186	1,147	14,157
Maribyrnong	1,261	1,435	1,370	1,346	1,290	1,426	1,438	1,298	1,346	1,160	1,161	14,531
Melbourne	957	1,008	999	1,107	1,200	1,333	1,253	1,303	1,208	1,213	1,255	12,836
Melton	2,042	2,250	2,080	2,104	2,143	2,450	2,468	2,472	2,609	2,567	2,809	25,994
Merri-bek	2,319	2,397	2,282	2,360	2,357	2,623	2,718	2,526	2,504	2,276	2,314	26,676
Moonee Valley	1,370	1,423	1,393	1,314	1,310	1,548	1,506	1,389	1,403	1,259	1,311	15,226
Wyndham	3,180	3,824	3,895	3,986	4,070	4,693	4,824	4,883	4,954	4,864	4823	47,996
WPHU	15,270	16,707	16,110	16,276	16,452	18,604	18,504	17,965	17,902	16,924	17,000	187,714

Appendix C Table 6: Registered births by year in WPHU LGAs

Source: ABS, Births, Australia

	LGA	Suburbs
Bottom 10% IRSD		
	Brimbank	Albanvale, Albion, Ardeer, Deer Park, Delahey, Kings Park, St Albans, Sunshine North, Sunshine West
	Hobsons Bay	Laverton
	Maribyrnong	Braybrook
	Melbourne	Flemington
	Melton	Melton, Melton South
	Moonee Valley	Flemington
	Wyndham	Laverton North
Bottom 10–20 % IRSD		
	Brimbank	Cairnlea, Sunshine
	Melton	Brookfield, Grangefields, Harkness, Kurunjang, Melton West, Mount Cottrell, Weir Views
	Merri-bek	Fawkner
	Wyndham	Mount Cottrell
Bottom 20–30 % IRSD		
	Brimbank	Kealba, Keilor Downs, Tullamarine
	Hobsons Bay	Altona North
	Melbourne	Carlton, North Melbourne
	Melton	Cobblebank, Plumpton
	Merri-bek	Glenroy, Hadfield, Tullamarine
	Wyndham	Hoppers Crossing, Werribee, Wyndham Vale

Appendix C Table 7: WPHU postcodes and corresponding LGA and Suburbs in lowest 30% of Victorian IRSD Score

Source: ABS Census of Population and Housing, 2021

		English	Vietnamese	Mandarin	Punjabi	Italian	Arabic	Hindi	Greek	Cantonese	Urdu
Brimbank	(n)	70,675	36,050	2,694	4,360	3,882	4,251	1,736	4,610	4,039	1,711.00
	%	36.3	18.5	1.4	2.2	2	2.2	0.9	2.4	2.1	0.9
Hobsons Bay	(n)	62,408	1,820	1,134	693	1,810	2,766	689	2,282	82	223
	%	68.3	2	1.2	0.8	2	3	0.8	2.5	0.9	0.2
Maribyrnong	(n)	48,239	9,864	2,040	221	1,236	727	501	1,614	2,386	513
	%	56.6	11.6	2.4	0.3	1.5	0.9	0.6	1.9	2.8	0.6
Melbourne	(n)	69,350	3,187	21,342	477	1,495	1,744	3,586	677	5,127	414
	%	46.4	2.1	14.3	0.3	1	1.2	2.4	0.5	3.4	0.3
Melton	(n)	97,230	4,545	1,315	10,579	1,733	3,630	3,510	1,619	808	2,467.00
	%	54.3	2.5	0.7	5.9	1	2	2	0.9	0.5	1.4
Merri-bek	(n)	104,591	1,564	2,858	529	9,975	7,773	1,059	6,821	1,031	3,778.00
	%	61	0.9	1.7	0.3	5.8	4.5	0.6	4	0.6	2.2
Moonee Valley	(n)	82,797	2,858	2,024	291	6,712	1,842	802	3,479	1,804	255
	%	68	2.3	1.7	0.2	5.5	1.5	0.7	2.9	1.5	0.2
Wyndham	(n)	128,541	3,127	10,451	20,871	2,428	5,588	14,009	1,402	2,644	8,376.00
	%	44	1.1	3.6	7.1	0.8	1.9	4.8	0.5	0.9	2.9
WPHU	(n)	663,802	63,211	44,014	38,289	29,268	28,416	26,076	22,570	18,825	18,024
	%	51.7	4.9	3.4	3.0	2.3	2.2	2.0	1.8	1.5	1.4

Appendix C Table 8: Top 10 languages spoken at home within WPHU by LGA

Source: ABS Census of Population and Housing, 2021

	Not well or not at all		Very well or well		Not stated		Speaks English only	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Brimbank	26,514	13.6	85,679	44.0	11,765	6.0	70,661	36.3
Hobsons Bay	3,740	4.1	21,168	23.2	4,037	4.4	62,380	68.3
Maribyrnong	6,684	7.8	25,878	30.4	4,408	5.2	48,241	56.6
Melbourne	7,785	5.2	61,319	41.0	11,152	7.5	69,367	46.4
Melton	8,435	4.7	61,929	34.6	11,334	6.3	97,261	54.3
Merri-bek	8,654	5.1	50,775	29.6	7,366	4.3	104,555	61.0
Moonee Valley	4,902	4.0	29,679	24.4	4,499	3.7	82,779	67.9
Wyndham	16,879	5.8	128,918	44.1	17,656	6.0	128,559	44.0
WPHU	83,593	6.5	465,345	36.2	72,217	5.6	663,803	51.7

Appendix C Table 9: Proficiency in spoken English by LGA

Note: Percent shown indicates percentage within each region.
Source: ABS Census of Population and Housing, 2021

	People aged 15 years and over providing assistance to someone with a disability		People with a profound or severe disability (includes people in long-term accommodation), all ages	
	n	% within LGA or region	n	% within LGA or region
Brimbank	19,677	12.2	14,914	8.1
Hobsons Bay	9,963	13.4	5,780	6.6
Maribyrnong	7,849	10.9	4,498	5.5
Melbourne	8,767	6.3	3,432	2.4
Melton	16,201	12.0	9,440	5.5
Merri-bek	18,388	12.7	11,016	6.7
Moonee Valley	14,674	14.3	7,330	6.2
Wyndham	22,715	10.4	12,037	4.3
Greater Melbourne	460,701	10.6	246,431	5.7
Victoria	688,465	10.6	379,148	5.8

Appendix C Table 10: Carers of people with a disability and people with profound or severe disability with WPHU, Greater Melbourne and Victoria

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia. Accessed 07/06/2023 [https://phidu.torrens.edu.au/current/maps/sha-aust/lga-single-map/vic/atlas.html]

	Liveability index (100 is average)	Social infrastructure index (Score of 15)	Closest bulk-bill GP (metres)	Walkability index (0 is average)	Housing affordability stress (%)	Closest healthy food (metres)
Brimbank	98.1	6.6	1,100.8	-0.5	14.6	1,372
Hobsons Bay	100.3	7	1,015.2	0.1	12.7	982.6
Maribyrnong	102.5	9.3	709	2.5	15.6	796.3
Melbourne	106.3	11.7	603.6	10.4	26.1	322.3
Melton	94.7	3.8	2,177.6	-1.4	16.3	1,982.1
Merri-bek	101.5	9.4	746.5	3.3	14.4	797.9
Moonee Valley	101.6	8.9	864.4	2	12.8	844.1
Wyndham	96.6	4.1	1,410.2	-0.7	16	1,538.3
Greater Melbourne	99.0	6.8	1,269.4	0.6	14.4	1,289.7

Appendix C Table 11: Measures of liveability across WPHU LGAs

Liveability index is a composite indicator calculated based on 13 domains: Community Centres, Culture and Leisure, Early Years, Education, Health and Social Services, Sport and Recreation, Food, Convenience, Walkability, Public Transport, Public Open Space, Housing Affordability, and Local Employment.

Social infrastructure index refers to community and individual support services and resources such as health, education, early childhood, community support, community development, culture, sport and recreation, parks and emergency services.

Walkability index is calculated based on 3 key factors: land use mix and services of daily living (something to walk to); street connectivity (a way to get there); and dwelling density.

Housing affordability stress is the % of households in the bottom 40% of incomes spending more than 30% of income on housing costs.

Source: Australian Urban Observatory, 2021

Proportion of adults who are significantly physically active			
	%	Lower Limit	Upper Limit
Brimbank	38.3	33.4	43.5
Hobsons Bay	54.3	48.3	60.2
Maribyrnong	49.3	43.8	54.9
Melbourne	51.2	43.1	59.3
Melton	48.2	42.3	54.1
Merri-bek	46.7	41.1	52.3
Moonee Valley	57.7	51.5	63.6
Wyndham	38.6	33.4	44.2
WPHU	50.6	46.9	54.2
Victoria	51.1	49.5	52.7

Appendix C Table 12: The proportion of adults who meet the Australian recommendations for physical activity

Source: Victorian Population Health Survey, 2019

Proportion of adults who consume sufficient fruit and vegetables			
	%	Lower Limit	Upper Limit
Brimbank	3.4	1.9	5.8
Hobsons Bay	4.2	1.8	9.4
Maribyrnong	3.1	1.7	5.5
Melbourne	4.0	2.2	7.3
Melton	1.6	0.7	3.7
Merri-bek	5.0	3.1	8.2
Moonee Valley	3.2	1.8	5.6
Wyndham	2.0	1.0	4.2
WPHU	3.2	2.2	4.7
Victoria	3.6	3.1	4.2

Appendix C Table 13: The proportion of adults who meet the Australian recommendations for fruit and vegetable consumption.

Source: Victorian Population Health Survey, 2019

Ran out of money to buy food in last 12 months			
	%	Lower Limit	Upper Limit
Brimbank	10.4*	7.0	15.2
Hobsons Bay	5.7*	3.2	10.0
Maribyrnong	8.0*	5.0	12.4
Melbourne	5.3*	3.0	9.0
Melton	7.1*	4.4	11.2
Merri-bek	5.2*	2.8	9.5
Moonee Valley	6.7*	4.0	11.2
Wyndham	5.0*	2.9	8.4
WPHU	6.3	5.2	7.5
Victoria	5.9	5.4	6.4

Appendix C Table 14: Estimates for proportion of adults who ran out of money to buy food in the last 12 months

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused to say' responses, not reported here

Relative Standard Error (RSE) = standard error / point estimate * 100; interpretation below:

* RSE between 25 and 50 per cent; point estimate (%) should be interpreted with caution

** RSE greater than, or equal to, 50 per cent; point estimate (%) is unreliable, hence not reported

Source: Victorian Population Health Survey, 2020

LGA	Overweight or obese (BMI ≥ 25)		
	95% CI		
	%	LL	UL
Brimbank	52.6	45.9	59.1
Hobsons Bay	49.0	42.2	55.9
Maribyrnong	40.8	34.5	47.5
Melbourne	35.5	28.8	42.9
Melton	64.5	58.6	70.0
Merri-bek	49.5	42.5	56.5
Moonee Valley	50.1	43.3	56.8
Wyndham	50.4	44.4	56.3
WPHU	48.9	46.4	51.4
Victoria	51.0	50.0	52.0

Appendix C Table 15: Estimates of the proportion of the adult population for overweight or obesity by WPHU LGA

Data were age-standardised to the 2011 Victorian population. LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused to say' responses, not reported here.

Relative Standard Error (RSE) = standard error / point estimate * 100; interpretation below:

* RSE between 25 and 50 per cent; point estimate (%) should be interpreted with caution. ** RSE greater than, or equal to, 50 per cent; point estimate (%) is unreliable, hence not reported.

Source: Victorian Population Health Survey, 2020

	Daily smoker			Occasional smoker			Current smoker (Daily + occasional)			Ex-smoker		
	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL
Brimbank	17.2	12.7	22.9	3.9	2.3	6.6	21.1	16.2	27.0	16.6	12.4	21.8
Hobsons Bay	16.1	11.6	22.0	5.7	3.2	9.9	21.8	16.6	28.1	25.9	20.4	32.4
Maribyrnong	10.2	6.7	15.2	5.0	3.1	8.0	15.2	11.0	20.6	21.7	16.7	27.6
Melbourne	7.9	4.9	12.6	4.6	2.3	8.7	12.5	8.6	17.8	23.0	17.2	30.1
Melton	13.2	9.6	17.8	2.9	1.4	5.9	16.0	12.1	21.0	19.4	14.6	25.4
Merri-bek	8.8	5.6	13.6	6.5	3.6	11.6	15.3	10.8	21.2	29.3	23.3	36.2
Moonee Valley	11.0	7.6	15.7	3.0	1.6	5.7	14.0	10.2	19.0	24.5	19.5	30.4
Wyndham	15.9	11.7	21.2	3.5	1.8	6.5	19.4	14.8	24.9	22.5	18.1	27.5
WPHU	12.5	11.0	14.3	-	-	-	-	-	-	-	-	-
Victoria	12.0	11.4	12.7	4.4	4.0	4.9	16.4	15.7	17.2	22.8	22.0	23.6

Appendix C Table 16: Proportion of the adult population estimates for smoking status within WPHU LGAs

Percentages reported are proportions within each LGA

Source: Victorian Population Health Survey, 2020

	Diabetes		Heart disease		Lung condition		Kidney disease		Stroke	
	Number	SR	Number	SR	Number	SR	Number	SR	Number	SR
Brimbank	12,507	141**	6,546	90**	2,220	69**	1,998	120**	1,907	112**
Hobsons Bay	4,334	102	3,235	93**	1,173	77**	850	106	842	102
Maribyrnong	3,370	106**	1,966	82**	735	68**	607	103	574	100
Melbourne	2,763	66**	2,342	80**	752	56**	616	79**	603	87**
Melton	8,702	148**	4,435	106**	2,035	106**	1,328	129**	1,199	123**
Merri-bek	7,350	107**	5,243	92**	1,753	72**	1,349	98	1,392	102
Moonee Valley	5,205	90**	4,487	92**	1,416	67**	1,048	93*	1,071	92**
Wyndham	12,725	147**	6,175	102	2,409	87**	1,533	100	1,458	103
Greater Melbourne	218,605	103**	162,311	93**	58,164	76**	39,110	96**	40,105	98**
Victoria	301,583	101**	241,022	97**	96,186	88**	56,204	98**	59,452	101**
Australia	1,191,389	100	991,027	100	435,361	100**	227,229	100	233,312	100

Appendix C Table 17: Indirect Age-standardised rates and standardised ratios for incidence of select health conditions by WPHU LGAs, Greater Melbourne, Victoria and Australia

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio;
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level.

Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Arthritis		Asthma		Depression or anxiety		Dementia		Cancer	
	Number	SR	Number	SR	Number	SR	Number	SR	Number	SR
Brimbank	13,584	86**	12,046	88**	11,709	71**	1,462	110**	4,012	75**
Hobsons Bay	6,868	90**	6,449	102	7,343	96**	690	102	2,357	92**
Maribyrnong	4,458	81**	6,447	105**	8,239	109**	532	124**	1,555	84**
Melbourne	4,509	65**	9,114	77**	12,069	81**	453	99	2,167	93**
Melton	10,189	102**	12,064	104**	12,039	85**	566	98	3,025	90**
Merri-bek	11,659	95**	13,161	107**	18,513	122**	1,404	110**	3,871	94**
Moonee Valley	9,233	88**	8,553	98	9,995	95**	1,083	107*	3,436	97
Wyndham	13,271	91**	15,551	84**	15,636	68**	812	96	3,861	79**
Greater Melbourne	341,121	90**	333,942	97**	383,119	92**	33,031	99*	121,758	95**
Victoria	517,767	96**	468,593	103**	548,042	100	45,863	95**	178,235	97**
Australia	2,146,391	100	1,773,820	100	2,133,008	100	188,847	100	727,889	100

Appendix C Table 18: Indirect Age-standardised prevalence rates and standardised ratios for select health conditions by WPHU LGAs, Greater Melbourne, Victoria and Australia

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio;
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level
Source: Based on Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	High or very high psychological distress 95% CI		
	%	LL	UL
Brimbank	25.3	20.2	31.2
Hobsons Bay	25.3	20.2	31.7
Maribyrnong	23.3	18.0	29.7
Melbourne	22.1	17.3	27.8
Melton	21.4	16.8	26.8
Merri-bek	28.8	22.8	35.7
Moonee Valley	21.2	16.2	27.3
Wyndham	24.6	19.7	30.3
WPHU	24.4	22.3	26.5
Victoria	23.5	22.6	24.4

Appendix C Table 19: Estimates for the proportion of adults who report high or very high psychological distress by LPHU

Source: Victorian Population Health Survey, 2020, VAHI, Department of Health Victoria

	2015		2016		2017		2018		2019		2020		2021	
	Deaths	ASMR	Deaths	ASMR	Deaths	ASMR	Deaths	ASMR	Deaths	ASMR	Deaths	ASMR	Deaths	ASMR
Brimbank	1,097	5.4	1,122	5.5	1,136	5.5	1,104	5.3	1,287	5.4	1,202	5.3	1,164	5.3
Hobsons Bay	637	5.5	608	5.4	636	5.5	548	5.1	656	5.2	636	5.1	597	5.2
Maribyrnong	491	6.1	441	6	483	6.1	486	6	512	6.3	495	6.3	429	6
Melbourne	376	4.7	377	4.6	387	4.5	334	4.2	572	4.8	448	5	460	5.5
Melton	479	5.8	453	5.7	516	5.7	489	5.4	549	5.4	562	5.2	602	5.3
Merri-bek	1,212	5.4	1,187	5.4	1,203	5.4	1,132	5.2	1,203	5.3	1,188	5.3	1,167	5.3
Moonee Valley	807	5	732	4.8	766	4.6	738	4.4	769	4.4	884	4.5	830	4.6
Wyndham	666	5.5	764	5.6	786	5.8	752	5.8	863	5.6	857	5.5	911	5.6
Victoria	39,904	5.3	39,450	5.3	39,791	5.3	38,231	5	43,944	5.1	41,093	5.1	42,486	5.1

Appendix C Table 20: Number of deaths and direct age-standardised mortality rate (per 100,000 people) for WPHU LGAs between 2015 and 2021

Source: ABS, Deaths

	Deaths from diabetes (0 to 74 years)		Deaths from circulatory system disease (0 to 74 years)		Deaths from ischaemic heart disease (0 to 74 years)		Deaths from cerebrovascular disease (0 to 74 years)	
	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	71	144 (111, 178)**	443	144 (131, 158)**	222	143 (124, 162)**	92	162 (129, 195)**
Hobsons Bay	22	97 (56, 138)	198	139 (120, 159)**	102	142 (114, 169)**	37	141 (96, 187)*
Maribyrnong	26	163 (101, 226)*	152	151 (127, 175)**	84	167 (131, 202)**	17	93 (49, 137)
Melbourne	18	85 (46, 124)	156	118 (99, 136)*	76	117 (91, 144)	36	149 (100, 197)*
Melton	33	116 (76, 155)	232	128 (112, 145)**	123	135 (111, 159)**	35	106 (71, 141)
Merri-bek	45	135 (96, 175)*	263	126 (111, 141)**	140	134 (112, 156)**	41	107 (74, 139)
Moonee Valley	20	67 (38, 97)	180	97 (83, 111)	92	98 (78, 118)	24	70 (42, 98)
Wyndham	45	109 (77, 140)	346	131 (117, 145)**	180	136 (117, 156)**	64	133 (101, 166)*
Greater Melbourne	973	69 (65, 74)**	7,688	88 (86, 89)**	3,849	87 (84, 90)**	1,452	89 (85, 94)**
Victoria	1,478	75 (71, 79)**	11,865	96 (95, 98)**	6,004	97 (94, 99)**	2,213	97 (93, 101)
Australia	7,888	100 (98, 102)	49,178	100 (99, 101)	24,846	100 (99, 101)	9,129	100 (98, 102)

Appendix C Table 21: Premature mortality chronic health condition, for years 2016 to 2020 by WPHU LGAs, Australia, Victoria and Greater Melbourne

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Deaths from respiratory system disease (0 to 74 years)		Deaths from COPD (0 to 74 years)		Deaths from road traffic (0 to 74 years)		Deaths from suicide or self-inflicted injuries (0 to 74 years)	
	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	130	114 (94, 133)	73	105 (81, 130)	27	78 (49, 108)	81	82 (64, 100)
Hobsons Bay	51	98 (71, 125)	30	95 (61, 130)	12	78 (34, 122)	46	101 (72, 130)
Maribyrnong	62	175 (131, 218)**	33	159 (105, 214)**	15	94 (46, 141)	40	87 (60, 114)
Melbourne	40	83 (57, 109)	22	79 (46, 112)	20	59 (33, 84)*	73	83 (64, 102)
Melton	77	120 (93, 146)	45	120 (85, 155)	24	97 (58, 136)	70	97 (74, 120)
Merri-bek	95	126 (100, 151)*	58	130 (97, 164)*	12	39 (17, 62)**	80	91 (71, 111)
Moonee Valley	55	80 (59, 101)	26	63 (39, 87)*	8	39 (12, 65)**	42	69 (48, 90)*
Wyndham	124	134 (111, 158)**	72	135 (104, 166)*	39	97 (67, 127)	104	89 (72, 106)
Greater Melbourne	2,428	75 (72, 78)**	1,351	69 (65, 73)**	568	56 (51, 60)**	2,172	73 (70, 76)**
Victoria	4,035	88 (85, 90)**	2,412	86 (83, 90)**	1,058	81 (76, 86)**	3,202	84 (81, 87)**
Australia	18,470	100 (99, 101)	11,235	100 (98, 102)	5,022	100 (97, 103)	14,637	100 (98, 102)

Appendix C Table 22: Premature mortality by cause, by WPHU LGAs, Australia, Victoria and Greater Melbourne for 2016 to 2020

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	All cancers		Colorectal cancer		Lung cancer	
	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	4,188	89 (85.9, 91)**	498	90 (81.9, 98)*	446	110 (99.6, 120)*
Hobsons Bay	2,297	95 (91.4, 99)*	301	104 (91.9, 115)	231	108 (94.3, 122)
Maribyrnong	1,451	87 (82.4, 91)**	194	98 (84.5, 112)	139	99 (82.8, 116)
Melbourne	1,477	86 (81.9, 91)**	136	70 (58.6, 82)**	121	91 (74.9, 107)
Melton	1,785	85 (80.7, 89)**	212	91 (78.9, 103)	159	97 (82.2, 112)
Merri-bek	3,890	93 (89.9, 96)**	526	101 (92.3, 110)	406	107 (96.5, 117)
Moonee Valley	3,070	93 (89.8, 96)**	400	99 (89.3, 109)	266	89 (78.6, 100)
Wyndham	2,906	93 (89.3, 96)**	316	91 (80.8, 101)	294	121 (107.2, 135)**
Greater Melbourne	104,347	94 (93.5, 95)**	12,551	94 (92.7, 96)**	9,090	93 (91.4, 95)**
Victoria	149,137	96 (95.1, 96)**	18,639	99 (97.7, 100)	13,374	96 (94.8, 98)**
Australia	623,128	100 (99.8, 100)	74,871	100 (99.3, 101)	55,246	100 (99.2, 101)

Appendix C Table 23: Incidence of colorectal, lung and all cancers for all persons (male and female), for years 2010 to 2014

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio; **CI**, confidence interval
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Melanoma of the skin		Pancreatic cancer	
	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	156	33 (27.6, 38)**	126	117 (96.5, 137)
Hobsons Bay	155	65 (54.4, 75)**	43	75 (52.6, 97)
Maribyrnong	67	38 (29.2, 48)**	46	119 (84.8, 154)
Melbourne	113	60 (48.9, 71)**	41	114 (79.4, 149)
Melton	99	44 (35.3, 53)**	48	111 (79.7, 143)
Merri-bek	212	51 (44, 58)**	103	98 (79, 117)
Moonee Valley	193	60 (51.1, 68)**	77	95 (73.6, 116)
Wyndham	157	47 (39.4, 54)**	67	103 (78.3, 128)
Greater Melbourne	7,481	68 (66, 69)**	2,684	102 (98, 106)
Victoria	11,406	74 (72.7, 75)**	3,856	103 (99.6, 106)
Australia	61,549	100 (99.2, 101)	14,881	100 (98.4, 102)

Appendix C Table 24: Incidence of Melanoma of the skin, and pancreatic cancer for all persons (male and female), for years 2010 to 2014

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio; **CI**, confidence interval
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Breast Cancer		Uterine Cancer		Ovarian Cancer	
	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	540	88 (81, 96)**	107	113 (91.5, 134)	51	97 (70.7, 124)
Hobsons Bay	280	92 (80.8, 102)	47	99 (71, 128)	28	104 (65.4, 142)
Maribyrnong	176	83 (70.3, 95)*	35	111 (74.3, 148)	18	95 (51.3, 140)
Melbourne	185	87 (74.2, 99)	41	129 (89.4, 168)	21	107 (61.3, 153)
Melton	285	96 (84.5, 107)	51	118 (85.7, 151)	22	91 (52.9, 129)
Merri-bek	485	96 (87.1, 104)	93	118 (94.2, 142)	40	84 (58.2, 110)
Moonee Valley	429	104 (94.6, 114)	70	108 (82.9, 134)	37	100 (67.5, 132)
Wyndham	432	99 (89.3, 108)	71	113 (86.6, 139)	37	103 (69.7, 136)
Greater Melbourne	13,852	98 (96.3, 100)*	2,347	107 (102.6, 111)**	1,230	99 (93.1, 104)
Victoria	19,235	99 (97.1, 100)	3,308	108 (104.1, 111)**	1,769	102 (97.5, 107)
Australia	77,819	100 (99.3, 101)	12,238	100 (98.2, 102)	6,862	100 (97.6, 102)

Appendix C Table 25: Indirect age-standardised incidence of breast, uterine and ovarian cancer in females, for years 2010 to 2014

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio; **CI**, confidence interval
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Prostate cancer	
	Number	SR (95% CI)
Brimbank	610	80 (74, 86)**
Hobsons Bay	305	83 (74, 92)**
Maribyrnong	158	65 (55, 75)**
Melbourne	240	94 (82, 106)
Melton	232	72 (63, 81)**
Merri-bek	412	69 (62, 76)**
Moonee Valley	423	85 (77, 93)**
Wyndham	356	76 (68, 84)**
Greater Melbourne	16,409	96 (94, 97)**
Victoria	23,024	94 (92, 95)**
Australia	99,829	100 (99, 101)

Appendix C Table 26: Incidence of prostate cancer, for years 2010 to 2014

ASR, age-standardised rate, calculated by the indirect method to the Australian standard population 2001; **SR**, standardised ratio; **CI**, confidence interval
* denotes statistical significance at 95% level
** denotes statistical significance at 99% level

Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Deaths from cancer (0 to 74 years)		Deaths from colorectal cancer (0 to 74 years)		Deaths from lung cancer (0 to 74 years)		Deaths from breast cancer (females) (0 to 74 years)	
	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)	Number	SR (95% CI)
Brimbank	878	124 (116, 133)**	96	131 (105, 158)**	181	128 (109, 147)**	79	143 (112, 175)**
Hobsons Bay	399	123 (111, 135)**	36	106 (72, 141)	79	122 (95, 149)	38	144 (98, 190)*
Maribyrnong	285	125 (111, 140)**	27	112 (70, 154)	66	151 (114, 187)**	22	116 (68, 165)
Melbourne	287	95 (84, 106)	31	98 (64, 133)	55	96 (71, 122)	23	99 (59, 140)
Melton	551	134 (123, 145)**	63	146 (110, 182)**	109	137 (112, 163)**	47	137 (98, 176)*
Merri-bek	560	118 (108, 128)**	61	123 (92, 153)	108	117 (95, 139)	50	127 (92, 162)
Moonee Valley	456	108 (98, 117)	57	129 (96, 163)	75	89 (69, 109)	35	102 (68, 136)
Wyndham	709	119 (111, 128)**	78	124 (96, 151)	124	110 (90, 129)	56	112 (82, 141)
Greater Melbourne	17,796	89 (87, 90)**	1,945	93 (89, 97)**	3,367	84 (82, 87)**	1,606	99 (94, 104)
Victoria	26,991	96 (94, 97)**	2,922	100 (96, 104)	5,205	92 (89, 94)**	2,325	104 (100, 108)*
Australia	112,966	100 (99, 101)	11,670	100 (98, 102)	22,746	100 (99, 101)	8,813	100 (98, 102)

Appendix C Table 27: Premature mortality by cancer and cancer type, for years 2016 to 2020 by WPHU LGAs, Australia, Victoria and Greater Melbourne

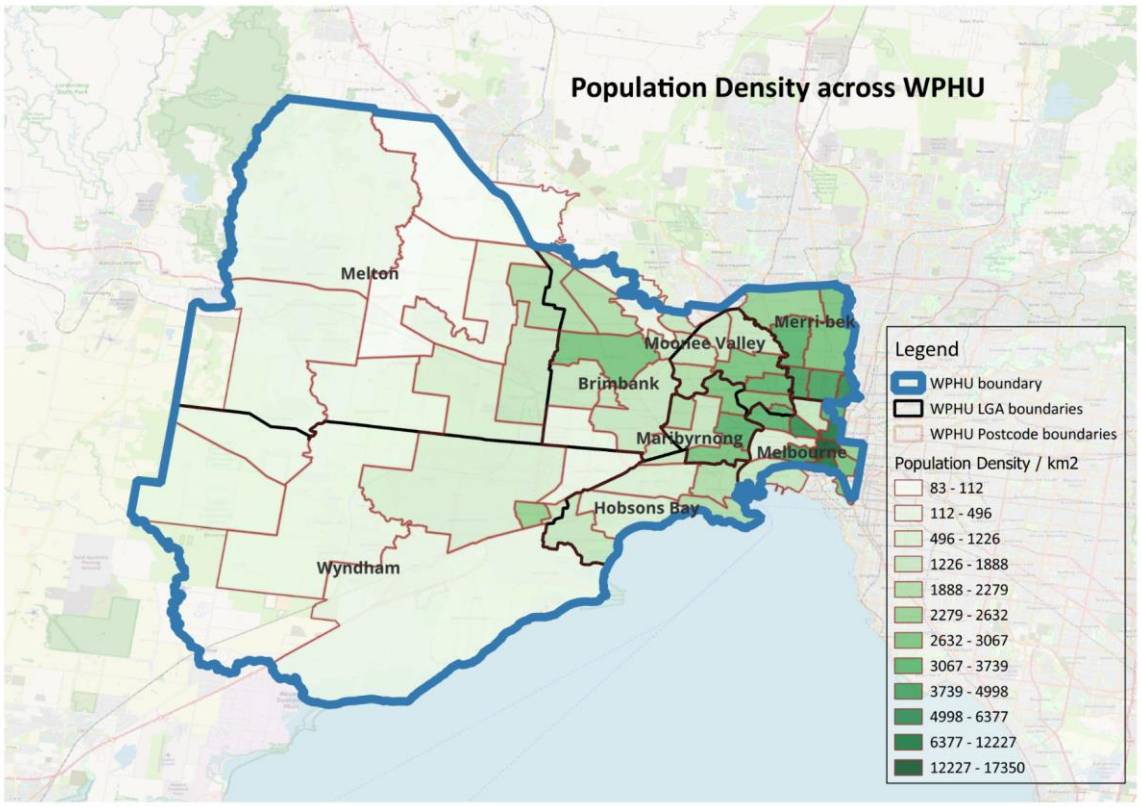
Source: Public Health Information Development Unit (PHIDU), Torrens University Australia material from: Social Health Atlases of Australia: LGAs (online). Accessed date April 2023[48]

	Syphilis (infectious) per 10,000[1]	Chlamydia trachomatis per 10,000[1]		Gonococcal infection per 10,000[1]		Hepatitis B (newly acquired and unspecified) per 10,000[1]		HIV (newly acquired and unspecified) per 10,000[1]	
		Male	Female	Male	Female	Male	Female	Male	Female
Brimbank	3.55	26.25	22.14	17.95	5.25	5.74	6.08	0.72	0.00
Hobsons Bay	2.52	25.52	17.17	15.44	6.44	0.45	1.50	0.45	0.00
Maribyrnong	5.04	50.30	25.37	37.90	6.58	3.74	4.23	0.23	0.23
Melbourne	17.32	143.28	71.18	108.33	16.63	5.78	5.99	2.96	0.27
Melton	4.53	28.00	28.65	14.45	10.03	3.14	1.67	0.34	0.22
Merri-Bek	4.50	41.48	24.12	35.60	7.17	1.44	0.68	0.72	0.00
Moonee Valley	3.04	24.31	14.52	18.74	4.79	1.01	1.91	0.17	0.00
Wyndham	2.57	19.05	21.99	10.10	4.77	3.46	3.11	0.14	0.07
Victoria	3.38	24.36	28.62	16.92	4.76	2.13	1.87	0.41	0.05

Appendix C Table 28: Sexual and reproductive health metrics Crude rates of sexually transmitted disease and by WPHU LGA for 2021[(75)]

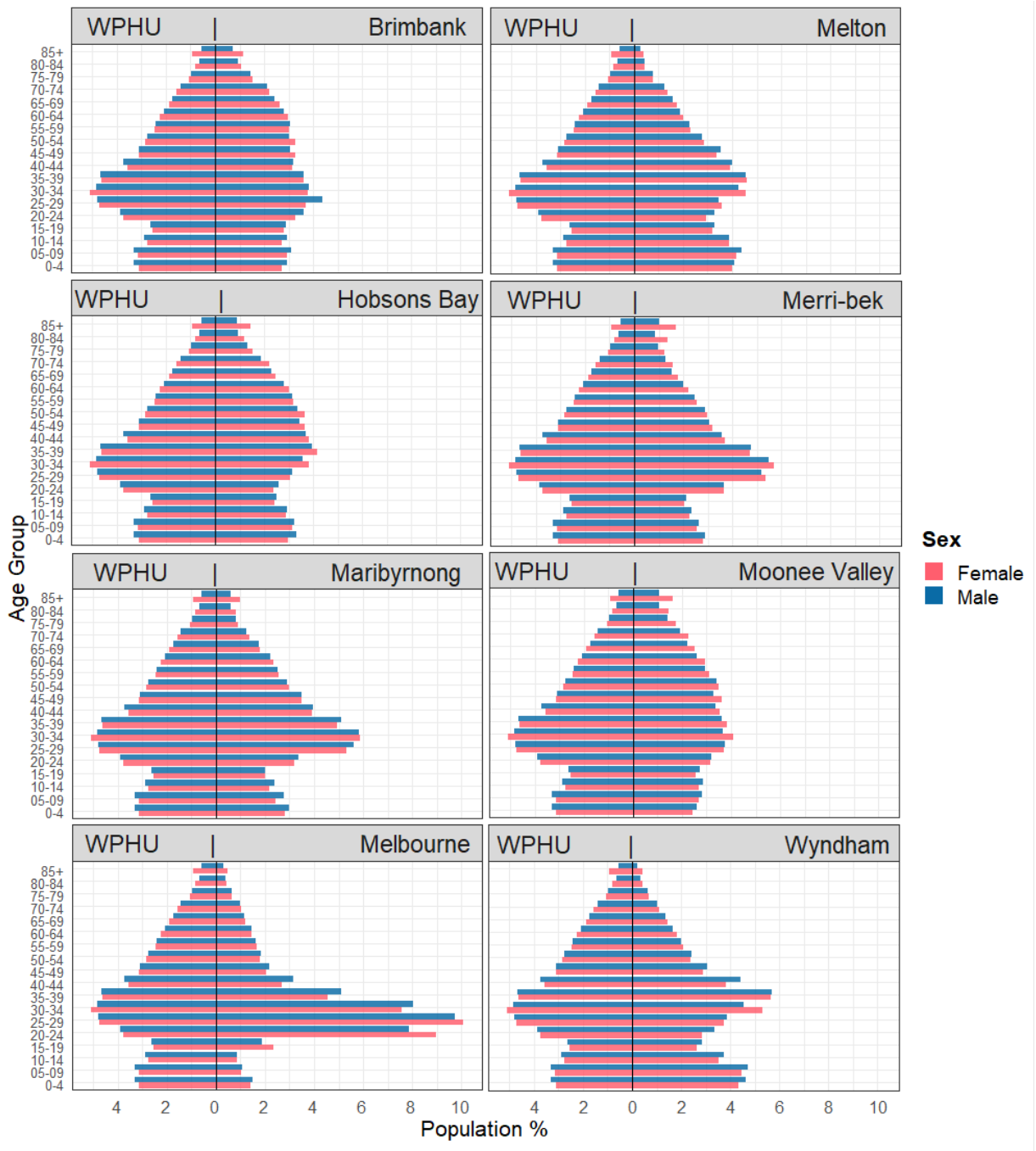
Interpretation note: Notification rates are higher Melbourne LGA for all STIs in comparison to Victoria overall. This is owing to the location of the Melbourne sexual health clinic, which provides anonymous sexual and reproductive health screenings.

Source: Surveillance of notifiable conditions in Victoria, local public health areas and local government areas summary report(29,75,76)



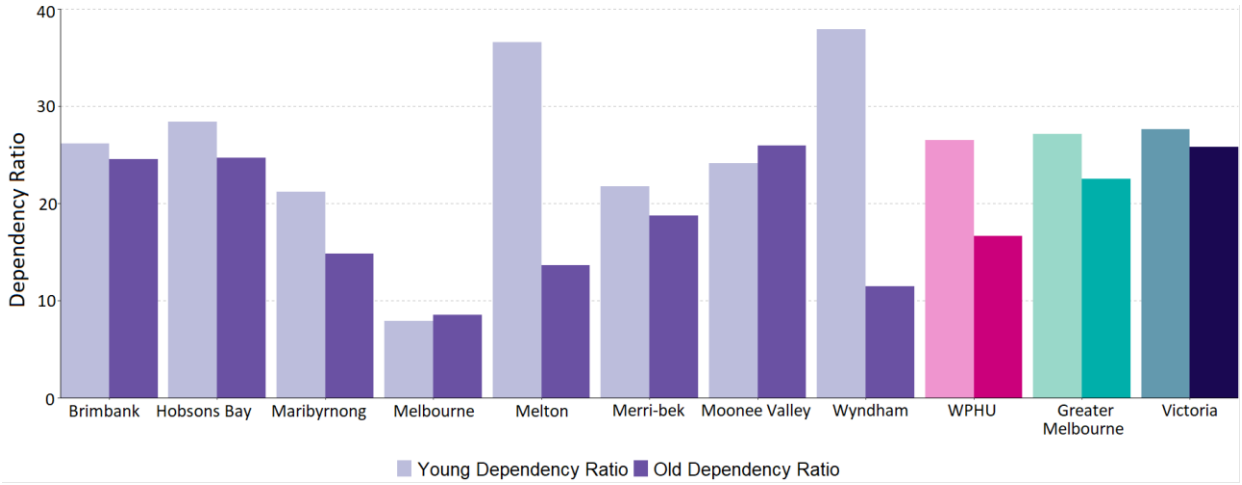
Appendix C Figure 1: Population density across WPHU

Source: Australian Bureau of Statistics. *Allocation files* [Internet]. Canberra: ABS; Jul 2021–Jun 2026



Appendix C Figure 2: Comparison of estimated resident population by age and sex for WPHU LGAs vs WPHU average

Source: ABS, Census of Population and Housing, 2021



Appendix C Figure 3: Young and old dependency ratios for WPHU LGAs, Victoria and metropolitan LPHU

Ratios are presented as the number of dependents for every 100 working-age people.
Source: ABS Census of Population and Housing, 2021

Source: ABS, Census of Population and Housing, 2021

Appendix C Table 29: Health Economic Modelling Scenario 1

Scenario 1:

Predictive increase in one serve of vegetables per week (approx. 75g or 2 teaspoons per day) modelled in all children aged 2 years in WPHU LGAs and assumed maintenance of effect over the lifetime.

			Cases of disease averted					
	Health adjusted life years saved over the lifetime	Healthcare cost-savings (millions)	Ischaemic heart disease	Diabetes	Stroke	Breast Cancer	Colorectal Cancer	Kidney Cancer
WPHU catchment	3,367	$23m	1,293	942	498	91	2	2
Brimbank	444	$3m	170	124	66	12	0	0
Hobsons Bay	236	$2m	91	66	35	6	0	0
Maribyrnong	211	$1m	81	59	31	6	0	0
Melbourne	196	$1m	75	55	29	5	0	0
Melton	582	$4m	224	163	86	16	0	0
Merri-bek	415	$3m	159	116	61	7	0	0
Moonee Valley	246	$2m	94	69	36	11	0	0
Wyndham	1,036	$7m	398	290	153	28	1	1

Rationale for scenario selections

Generally, fruits were over-consumed in a recent Australian study[77] and vegetables were under-consumed. According to dietary guidelines, fruit recommended serves per day 0.5, and median serves per day observed 1.04. Vegetables recommended serves per day 2–3; median serves per day observed 1.24. Therefore, we have modelled both a weekly and a daily increase in one serve of vegetables.

This is crude modelling and does not consider factors such as substitution effect of reduction in sweetened biscuit intake. Negligible effects on some diseases are not included in the above tables.

Appendix C Table 30: Health Economic Modelling Scenario 2

Scenario 2:

Predictive decrease in the consumption of one sweetened biscuit per week; based on an estimated 89% of children in the WPHU LGA who may consume sweet biscuits (1), assumed maintenance of effect throughout their lifetime, no substitution for other foods. If 0 to 2-year-old children who consume sweetened biscuits reduced their consumption by one serve per week and maintained that change in behaviour over the lifetime.

			Cases of disease averted								
	Health adjusted life years saved over the lifetime	Healthcare cost-savings (millions)	Ischaemic heart disease	Hypertensive Heart Disease	Diabetes	Stroke	Osteoarthritis	Breast Cancer	Colorectal Cancer	Endometrial Cancer	Kidney Cancer
WPHU catchment	5,735	$53M	612	105	2,104	205	1.070	54	41	44	36
Brimbank	707	$7m	81	14	278	28	142	7	5	6	5
Hobsons Bay	403	$4m	43	7	148	14	75	4	4	3	3
Maribyrnong	360	$3m	38	7	132	13	67	3	3	3	2
Melbourne	335	$3m	36	6	123	12	62	3	2	3	2
Melton	991	$9m	106	18	364	35	185	9	7	8	6
Merri-bek	707	$7m	75	13	259	25	132	7	5	5	4
Moonee Valley	419	$4m	45	8	153	15	78	4	3	3	3
Wyndham	1,764	$16m	188	32	647	3	329	17	12	13	11

Rationale for scenario selections

- Estimates of the percentage of children consuming discretionary food vary by study. Scenario 2 above is based on a recent study that found that 89% of toddlers consumed discretionary food [77]. In this study, discretionary foods were over-consumed (according to dietary guidelines: discretionary food recommended serves per day 0; median serves per day observed 1.04).
- Therefore, we have modelled a weekly reduction in one serve of sweetened biscuits in scenario 2, which aligns with the published work by Lal et al [78].
- This is crude modelling and does not consider factors such as substitution effect of reduction in sweetened biscuit intake.

WPHU would like to acknowledge Dr Vicki Brown and Michelle Tran, Deakin Health Economics, Institute for Health Transformation, Deakin University for their modelling using the ACE Economic Tool.

Appendix D: Key abbreviations

Abbreviation	Definition
ACCO	Aboriginal Community-Controlled Organisation
CCV	Cancer Council Victoria
CHS	Community health service
CM	Community member
CO	Community organisation
DH	Department of Health
DHE	Deakin Health Economics
DHSV	Dental Health Services Victoria
DU	Deakin University
EHO	Environmental health officer
ELC	Early learning centre
ERAV	Emergency relief – Anglicare Victoria
FB	FoodBank
FU	Flinders University
HEAS	Healthy Eating Advisory Service
IHT	Institute for Health Transformation, Deakin University
IPAN	Institute for Physical Activity and Nutrition, Deakin University
JSS	Jesuit Social Services
LGA	Local government area
NA	Nutrition Australia
NH	Neighborhood houses
PS	Preschool
SB	Second Bite
SV	Sustainability Victoria
SRC	Sport and recreation centres
STAFN	Sustain - The Australian Food Network
TBAUF	The Big Umbrella Foundation
TCG	The Community Grocer
VH	VicHealth
VU	Victoria University
WAGA	Western Alliance for Greenhouse Action
WB	Willim Berrbang
WPHU	Western Public Health Unit

Appendix E: Outcome indicator set for short-term impacts

Table 12 WPHU Outcome Indicator set (short-term impacts)

	Category	Outcome indicator (short-term)
1	Capacity building	1.1 Number of individuals undertaking training for initiative (external) 1.2 Number of individuals undertaking training for initiative (external) 1.3 Number of training sessions held for initiative 1.4 Number of stakeholders taking up training 1.5 Acceptability and relevance of capacity building to the stakeholders
2	Engagement	2.1 Number of stakeholder engagements for initiative 2.2 Number of engagements with priority groups/individuals 2.3 Number of *scoping* engagements with key priority partners in the area 2.4 Acceptability and relevance of engagement to the stakeholders
3	Resources, policies, and tools	3.1 Number of resources developed 3.2 Number of language specific resources developed 3.3 Number of resources *scoped* for amplification and collective impact 3.4 Number of policies and tools *scoped* for amplifying impact 3.5 Number of policies identified for collective impact 3.6 Acceptability and relevance of resources/policies/tools to the stakeholders
4	Implementation	4.1 Number of stakeholders adopting initiative 4.2 Number of priority groups/individuals adopting initiative 4.3 Number of aadditional venues implementing initiative 4.4 Number of implementation plans supported 4.5 Number of initiatives *scoped* for implementation 4.6 Barriers and facilitators to adoption or implementation of initiative by stakeholders 4.7 Barriers and facilitators to access or utilisation of initiative by target population in particular priority groups 4.8 Acceptability and relevance of initiative to the stakeholders

	Category	Outcome indicator (short-term)
5	Innovation	5.1 Number of innovative initiatives, methods and deliveries developed 5.3 Development of initiatives in an innovative way 5.2 Delivering initiatives in innovative ways 5.4 Innovative methods of data collection 5.5 Adoption of innovative methods and initiatives by other stakeholders 5.1 Number of collateral projects embedding innovative initiative 5.2 Number of collateral and wrap around service referrals being made as part of initiative 5.3 Number of collateral projects *scoping* the initiative 5.4 Number of activities undertaken to *scope* the project/initiative
6	Cost-benefit analysis	6.1 Cost of the initiative compared to benefit of reduced burden of disease and improved quality of life or life expectancy or similar economic evaluations
7	Community awareness and education	7.1 Number of community awareness sessions undertaken 7.2 Number of community education sessions undertaken 7.3 Number of people reached through community awareness and education sessions 7.4 Number of mail outs, posts, and messaging delivered 7.5 Acceptability and relevance of community awareness and education to the target audience
8	Systems-based	8.1 Number of stakeholders engaged in collective impact networks established by WPHU 8.2 Number of collective impact initiatives 8.3 Number of advocacy campaigns or activities undertaken 8.4 Number of data and intelligence initiatives undertaken 8.5 Number of networks and communities of practice participated or led by WPHU 8.6 Acceptability and relevance of collective impact network to the stakeholders

	Category	Outcome indicator (short-term)
9	Coordination and connection (lead, support, link)	9.1 Number of programs or projects linked across the catchment 9.2 Number of programs or projects supported across the catchment 9.3 Number of programs or projects led across the catchment 9.4 Acceptability and relevance of WPHU's coordination and connection (lead, link and support) efforts to the stakeholders in the catchment.

Contact us

123 Furlong Road
St Albans 3021

1800 497 111
WPHU@wh.org.au

wphu.org.au

WESTERN Public Health Unit | Western Health