WAPHA
WA Primary Health Alliance

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PERTH SOUTH
An Australian Government Initiative

Population Health Needs Assessment Perth South PHN

WA Primary Health Alliance
November 2016



Acknowledgement

Perth South PHN, in partnership with Curtin University, wishes to acknowledge the cooperation and support of everyone we have spoken to or contacted for this Needs Assessment.

Acknowledgement to People and Country

WA Primary Health Alliance and Curtin University acknowledge the traditional custodians of the country on which we work and live and recognise their continuing connection to land, waters and community. We pay our respect to them and their cultures and to Elders both past, present and future.

In Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islanders peoples, in recognition of the Aboriginal peoples as the Traditional Owners of Western Australia. No disrespect is intended towards Torres Strait Islanders members of the Western Australian community.

This Report was prepared by:

Curtin University

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Foreword

This report builds on and extends the analysis done in the Baseline Needs Assessment in early 2016. The information presented in this Report makes a clear case for a focused place-based approach over the medium- and long-term.

> *"There is widespread consensus that our health and social care services are not sustainable in their current form... The focus must be on keeping people well for longer and when they do become ill, supporting them to manage their conditions in the community, avoiding expensive institutional settings."*
>
> *Get Well Soon: Reimagining Place-Based Health (NLGN, 2016)*

The WA Primary Health Alliance (WAPHA) incorporates the three Western Australian Primary Health Networks (PHNs): Perth North, Perth South and Country WA. Since being established in July 2015, Perth South PHN regional teams have built collaborative and sustainable relationships across the health and social care systems. Their priority is to address the barriers impacting on the health care outcomes of people in metropolitan Western Australia.

From feedback and advice from clinicians, the community, peak bodies, local government, and other stakeholders, the needs assessment has identified priorities at a regional level for the WA community. The PHN is committed to contributing to a co-ordinated and responsive primary health care system. We envisage the system being flexible enough to deliver interventions at optimal times within the trajectory of conditions of concern, and a vision that people should have access to those services that allow them to stay well in their communities.

Health status in some locations within Perth South PHN is poorer than in other areas. Hospital admissions and emergency department attendance; co-occurring chronic diseases; and conditions associated with risky lifestyle behaviours can be poorer in some locations (Curtin University, 2016). People living in these locations frequently have higher smoking rates and illicit drug use, problematic alcohol consumption and as a group, show evidence of poor nutrition choices (Curtin University, 2016). Access to timely and relevant services can be restricted by distance, cultural beliefs and practices.

A place-based orientation allows the PHN to investigate the attributes of certain geographical areas that require change if there is to be an impact on the health status of individuals and groups. Certain parts of the PHN region has high prevalence rates of chronic disease and mental health conditions, coupled with high negative scores on the measures for the social determinants of health. e.g. education levels; socio economic status.

> *"The PHN is committed to addressing the many access barriers that exist for people trying to navigate the current system – particularly vulnerable and disadvantaged groups. These barriers contribute to a rate of potentially preventable hospitalisations of more than 21,605 episodes of preventable hospitalisations in Perth South in 2013-2014"*
>
> *(National Health Performance Authority [NHPA], 2015)*

The combination of robust data, enhanced local knowledge and engagement with stakeholders provides the PHN with rich, local intelligence. Commissioned activities will address the needs of marginalised groups in locations where people are likely to have the poorest health status.

In recognition of the central place of primary care practitioners in improving health status, PHN teams work intensively with general practice to support and assist them in their primary health care roles. The PHN is committed to understanding current GP best practice in relation to chronic and complex conditions by using the insights that are generated by the interaction between regional teams and local clinicians.

Perth South PHN is committed to commissioning quality, cost effective and integrated services that are adaptable, evidence based and outcomes based.

Understanding needs

A health needs assessment is a systematic method of identifying unmet health and health care needs of a population and making choices to meet those unmet needs. It looks at what should be done and what can be done to address needs.

There are limitations in this process. Page 54 in this Report describes our methodology and data limitations. It should be acknowledged that WAPHA is guided by the Commonwealth Department of Health's focus to support primary care and the prevention of potentially avoidable hospitalisations.

This Report complements a range of other reports including our Activity Plans for commissioning services across the region and a mental health atlas of WA services.

Executive Summary

Perth South Primary Health Network: achieving better healthcare for at risk populations in our community

The Health of Our Region

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organization, 1948). It is when physical and mental health deteriorates that individuals need access to appropriate and effective healthcare services that support long-term recovery and an improved quality of life.

Perth South Primary Health Network (PHN) aims to achieve better healthcare and better access for people at risk of poor health outcomes, by understanding the specific health needs of the population. We recognise that health is one part of an individual's existence; the social, cultural and economic determinants must be considered in responding to the needs in our community.

> *"Communities have multiple health needs and with limited availability of funds, 'it is necessary to prioritise and to commission services that will improve health and wellbeing outcomes. Not all health needs are equal. Where you live also matters to your chances of a long and healthy life'"*
>
> *(Duckett & Griffiths, 2016).*

In this report, we explore regional areas of the greatest need within Perth South PHN, where people do not have the same level of access to care or are constrained by other issues, such as socio-economic disadvantage, older age, cultural or social issues. In this document we outline the key priorities for action and investment across the region.

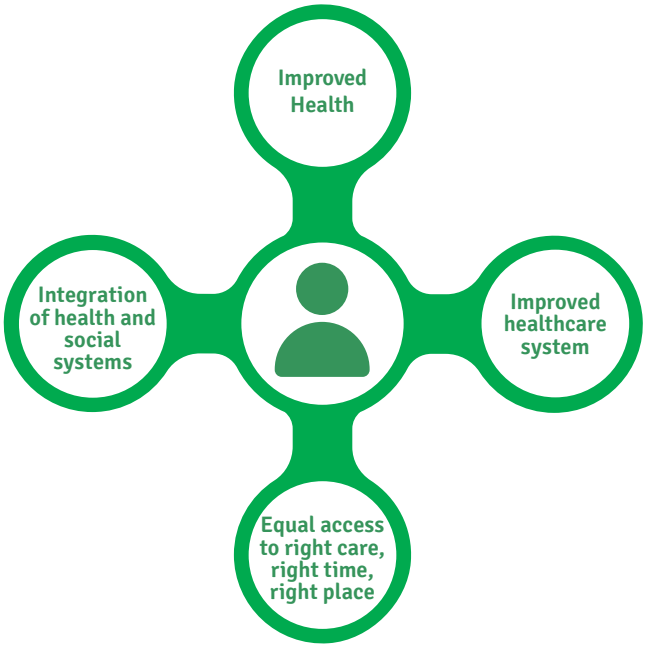


Figure 1. Perth South PHN investment activity areas.

Evidence of Poorer Health in the Region

Health outcomes measures in Perth South PHN are generally lower than Perth North PHN, including the prevalence of a number of chronic conditions, comorbidities, and healthy lifestyle behaviours (2011-13) (Public Health Information Development Unit [PHIDU], 2016). The rate of smoking, high or very high psychological distress, and obesity in Perth South PHN were all higher than the Australian average in 2012 (PHIDU, 2016).

Our investments will focus on: Funding patient-centred healthcare that aims to keep people out of hospital, healthy and well in the community.

Priorities for Action

In 2015, Perth South PHN — in consultation with health professionals and community representatives — identified the following priority needs for action within the community:

- Keeping people well in the community.
- People with multiple morbidities, especially chronic, co-occurring physical conditions, mental health conditions and drug and alcohol treatment needs.
- Services designed to meet the health needs of vulnerable and disadvantaged people, including those of Aboriginal heritage.
- System navigation and integration to help people get the right services, at the right time and in the right place.
- Capable workforce tailored to these priorities.

Overall, the level of socio-economic disadvantage Perth South PHN is similar to the State average; however, there are pockets of disadvantage. For those people who experience higher level of disadvantage, accessing the right healthcare can be more challenging as appropriate, affordable and targeted services for more vulnerable groups may not be readily available or accessible.

Understanding our community: key facts about the population

Migration and Population Flows

Perth South PHN has complex health care services, that provide care to both residents and non-residents of the region. We see a high level of population flow in relation to Country WA PHN residents traveling to health services in Perth South PHN.

It has been reported that 40% of specialist appointments attended outside a rural patient's area of residence were to capital cities (Strong, Trickett, Titulaer & Bhatia, 1998). If the patients are not able to return to their homes during the course of their treatment, they may become homeless in the metropolitan area.

People may seek health care in the proximity of their work, instead of their home. This may influence the number of services and practitioners in LGAs with a high number of businesses. A high proportion (17%) of the population consists of people who were born in non-English speaking countries (PHIDU, 2016). This is higher than Australian and WA averages.

Population Growth

The population of Perth South PHN is rapidly expanding and is expected to increase from 794,000 in 2011 to 1,161,840 people by 2026 (Western Australian Planning Commission, 2015).

Most of the population growth in Perth South PHN is expected to occur in Serpentine-Jarrahdale and Kwinana (Western Australian Planning Commission, 2015).

Population Demographics

The highest proportion of Perth South PHN residents were aged 20-49 years (43.2%). 12.9% were over the age of 65 years, 8.9% were over 70 years of age and 5.8% were aged 75 years and older (Australian Bureau of Statistics [ABS, 2011).

In 2015, the highest proportions of Perth South residents lived in Rockingham (13%), Gosnells (13%) and Cockburn (11%), Mandurah (14.7%), Murray (13%), and Waroona (12.2%) had the highest proportions of residents aged 70 years and older (ABS, 2015).

Emerging Populations

Population growth has occurred in every region of Perth South PHN, but has not followed a particular pattern over the past 12 years. The highest population growth has occurred in the Serpentine-Jarrahdale LGA.

In WA, the highest increase in people in the workforce (15-69 years of age) is predicted to occur in Perth South PHN (ABS, 2015).

Identified priority locations of highest health needs

- Armadale
- Belmont
- Cockburn
- Fremantle
- Gosnells
- Kwinana
- Mandurah (Peel)
- Murray (Peel)
- Rockingham
- Waroona

Aboriginal People

Perth South PHN has the second lowest proportion of Aboriginal people in WA, at 2.1% of the population. Kwinana (4.5%), Belmont (3.6%), and Waroona (3.6%) have the highest proportion of Aboriginal people in Perth South PHN (PHIDU, 2016).

Homeless People

Homelessness is associated with increased severity and complexity of chronic conditions and increased risk of infectious diseases due to poor living conditions (AIHW, 2012).

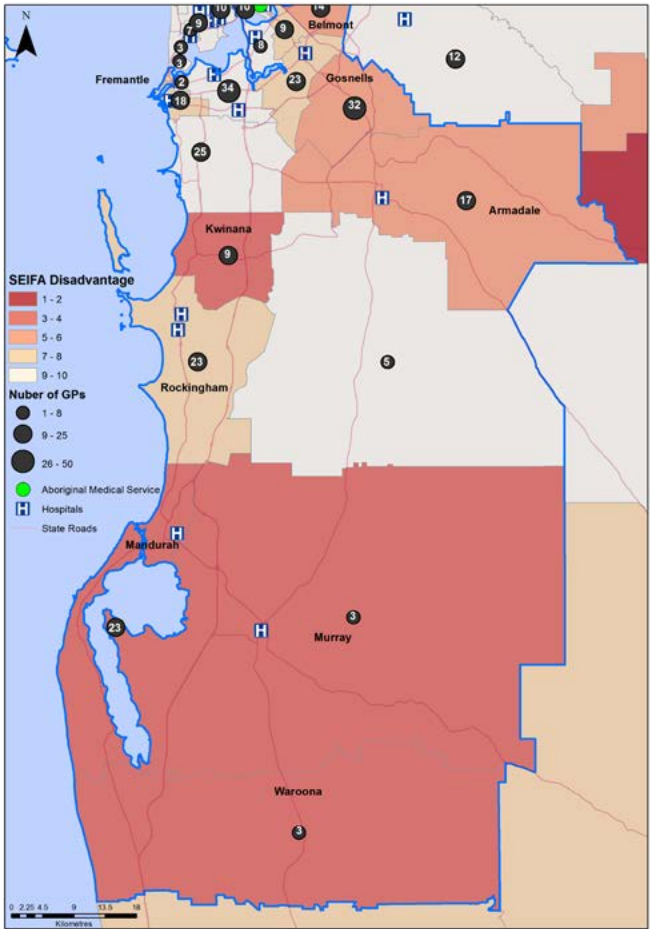
In Perth South PHN, the highest number of recorded homeless people was in Gosnells (417), Fremantle (383), and Canning (272) (ABS, 2011).

Disadvantaged Groups

Generally Perth South PHN experiences higher levels of socio-economic disadvantage than Perth North PHN. Although there are areas of affluence, areas of socio-economic disadvantage exist with lower Socio-economic Indexes for Areas (SEIFA) scores, higher rates of risky behaviours (drinking, smoking, illicit drug use); and increased prevalence of physical and mental health conditions. In 2011, the LGAs experiencing the most disadvantage were Waroona, Kwinana and Mandurah (ABS, 2011).

Our understanding of the people living in different Perth South PHN communities helps us to plan and commission services that are targeted at current and future needs. We work alongside a range of other funders and health providers to do this.

Perth South PHN: demand and supply



Map 1. Perth South PHN by region, SEIFA and services (ABS 2011; AIHW, n.d.; DoH, n.d.; WAPHA, 2016)

Local Government Area	Population
Rockingham	128,962
Gosnells	125,051
Cockburn	107,645
Melville	106,655
Canning	98,355
Mandurah	83,931
Armadale	80,287
South Perth	46,244
Belmont	41,344
Victoria Park	38,450
Kwinana	37,149
Fremantle	31,046
Serpentine-Jarrahdale	24,108
Murray	17,262
East Fremantle	7,743
Waroona	4,055
Total	978,287

Figure 2. Population distribution in Perth South by LGA, 2015 preliminary estimated resident population (ABS, 2015).

> *"The Perth South PHN covers a land area of 5,069.3 km² and consists of 16 LGAs ranging from 1,710 km² in Murray, to 3.1 km² in East Fremantle. Over 60% of the growth is occurring in the LGAs of Rockingham, Armadale, Gosnells, Cockburn and Mandurah"*
>
> *(ABS, 2015)*

Map 1 indicates that there is a mismatch between locations of socio-economic disadvantage and the number of GPs across the Perth South PHN. Highly disadvantaged locations are expected to have poorer health outcomes and higher demand for primary health care but generally have poorer supply of GP services.

People with Higher Health Needs

- There was a higher number of culturally and linguistically diverse (CALD) populations in the Perth South PHN, with 17% of the region's population born in non-English speaking countries. This was higher than the WA (14.5%) and Australian averages in 2011 (PHIDU, 2016).
- 3.8% of the Perth South PHN population is living with a profound or severe disability. Health differences between people with disabilities and the general population are likely to be socially determined, leaving people who live with a disability more vulnerable to poor health outcomes in 2012 (PHIDU, 2016).
- Carers frequently experience physical pain, chronic conditions and use more prescription medications than the general population. In the Perth South PHN, 9.5% of residents aged 15 years and over were caring for at least one person with a disability. The highest proportions (>10%) were in Waroona, Melville, Murray and East Fremantle LGAs in 2012 (PHIDU, 2016).

Access to Timely Health Care

Across the Perth South PHN there is inequity regarding access, cost and connectivity of services. Almost 1 in 4 (22%) people who saw a GP felt that they waited longer than acceptable to get an appointment, which is higher than the Australian average.

In Perth South PHN, 31% of residents report difficulty in accessing services:

- 14% could not afford a medical consultation
- 12% could not afford prescribed medication (NHPA, 2013).

There is one Aboriginal Community Controlled Organisation in the Perth South PHN, with the region also containing three Aboriginal medical services and a fourth satellite clinic site of the Perth North ACCHO.

Region and Population Characteristics

The Perth South PHN population profile

Who lives in Perth South PHN?

The estimated resident population of Perth South PHN is 965,997, which is 38% of the WA population (ABS, 2015). There is a higher proportion of older adults (65+ years of age) in Perth South PHN than Perth North and Country WA PHNs (PHIDU, 2016).

The highest proportion (42.9%) of Perth South PHN residents were aged 20-49 years. 12.1% were over the age of 65 years, 8.3% were over 70 years of age and 5.5% were aged 75 years and older (ABS, 2011).

In 2015, 2.1% of the Perth South PHN was estimated to be Aboriginal (20,544 people) (PHIDU, 2016, ABS, 2015).

There is a higher proportion of population born in predominantly non-English speaking countries in the Perth South PHN (17%) compared to the WA (14.45%) and Australian (15.7%) averages. Close to half (49%) of them reside in Canning, Gosnells and Melville LGAs (PHIDU, 2016, ABS 2015b).

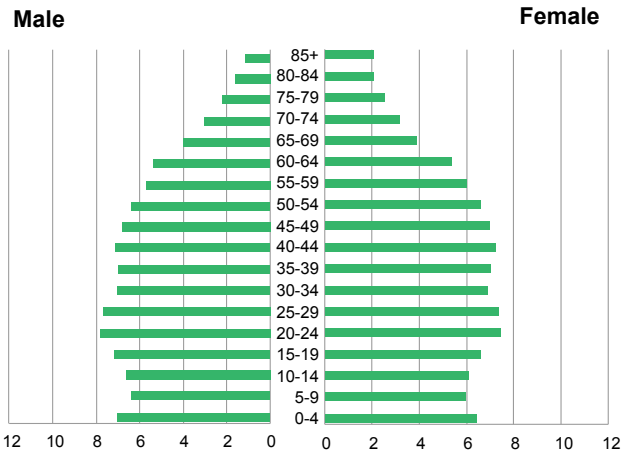


Figure 3. Perth South PHN population structure 2011 (ABS, 2011).

Projected Growth of the Population

The Perth South PHN population is expected to grow by 46% from 2011 to 2026 by 367,840 people, with the fastest population growth in the 70+ year group (55%) (Western Australian Planning Commission, 2015). High proportions of older adults (70+ years) were reported in Mandurah, Murray, Waroona, Melville, Fremantle and East Fremantle in 2015 (ABS, 2015). Despite the estimated growth in Perth South PHN's ageing population, the proportion of aged care places (per 1,000 people) is showing a declining trend (ABS, 2016; Australian Institute of health and Welfare [AIHW], 2016d).

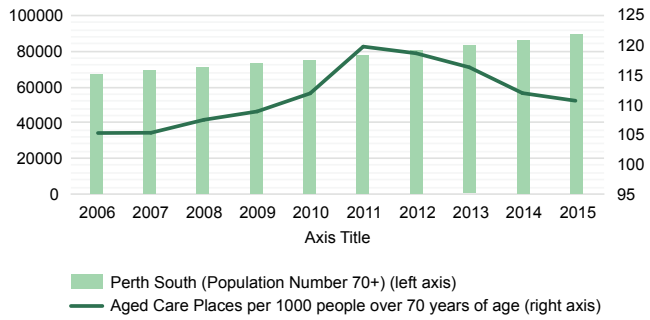


Figure 4. Growth of over 70 years and aged care places per 1,000 in Perth South PHN, 2006-2015 (ABS, 2016; AIHW, 2016d).

Total population (ERP 2014): 965,997

Aboriginal population (ERP 2015): 21,072

Population growth 2009-2014 18.19%

Population aged 65+ (ERP 2014): 13.13%

Immunisations: 90.4% of children in the region are fully immunised at five years of age (PHIDU, 2016)

Breast Cancer screening: 54.1% of women ages 50-69 years old in Perth South PHN participated in breast cancer screening in 2014-15 (AIHW, 2016c). This was lower than the BreastScreen Australia program participation target of 70% (Department of Health [DoH], 2009).

Social and Economic Status

Socio-economic Index for Areas (SEIFA) defines the relative social and economic advantage and disadvantage of a region, by measuring a community's access to material and social resources and their ability to participate in society. A low SEIFA score indicates a high proportion of relatively disadvantaged people in the area with the Australian average being 1,000. For Perth South PHN, the average SEIFA index score is 1,020 (PHIDU, 2016).

The least disadvantaged LGAs in the PHN are Cockburn (1,035), Rockingham (1,012), Fremantle (1,009) and Gosnells (1,004). The most socio-economically disadvantaged LGAs are Waroona (948), Kwinana (968) and Mandurah (978) (PHIDU, 2016).

Demographic trends and socio-economic status helps health planners to identify areas of high need due to variations in population characteristics. Prioritisation based on population characteristics allows tailoring of solutions to local needs, recognising 'one size does not fit all'.

Aboriginal and Torres Strait Islander people living in the region

Aboriginal Population in Perth South PHN

All health indicators are poorer for Aboriginal people including life expectancy, death rates, infant mortality and the incidence and prevalence of chronic conditions (AIHW, 2015c).

There are over 20,000 people (2.1% of the population) living across Perth South PHN who identified as Aboriginal in 2015. The highest proportion of Aboriginal people was in Kwinana (1,700), Belmont (3.6%), Waroona (3.6%) and Armadale (3.1%) (PHIDU, 2016).

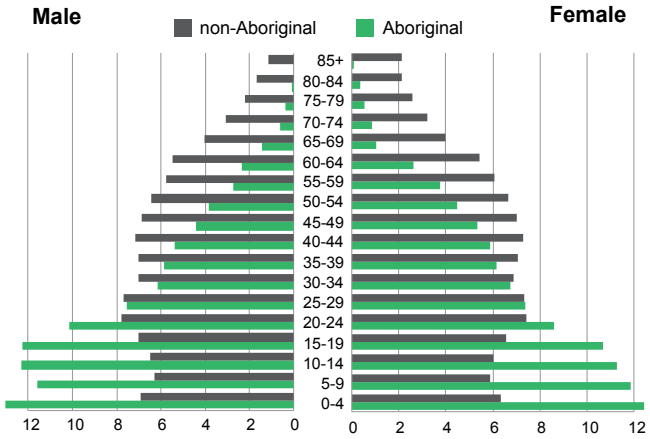


Figure 5. Aboriginal population structure Perth South PHN, 2011 (ABS, 2011).

Age Distribution

The largest age group for both male and female Aboriginal people were 15-19 year olds (12%), followed by 0-4 and 5-9 year olds (PHIDU, 2016).

There is a noticeable decrease in the Aboriginal population 55+ years of age for both males and females (PHIDU, 2016). This relates to the early onset and poor management of long-term health conditions.

Poorer Health Outcomes

Potentially preventable chronic conditions are higher in Aboriginal populations than in non-Aboriginal populations, and tend to occur at a younger age. The hospitalisation rate for chronic conditions in WA is 4.3 times higher for Aboriginal people than for non-Aboriginal people. The largest proportion of potentially preventable hospitalisations (PPHs) for chronic conditions in 2013 was for diabetes complications, followed by chronic obstructive pulmonary disease (COPD), an umbrella term which includes emphysema and chronic bronchitis (Australian Indigenous HealthInfoNet, 2013).

Determinants of Health

Region	Number of Aboriginal people	Proportion of Aboriginal people (%)
Australia	729,048	3.1
WA	95,707	3.6
Perth South PHN	21,073	2.1
Armadale	2,556	3.1
Belmont	1,507	3.6
Canning	1,229	1.2
Cockburn	2,260	2.0
East Fremantle	47	0.6
Fremantle	610	1.9
Gosnells	3,670	2.9
Kwinana	1,700	4.5
Mandurah	1,987	2.3
Melville	740	0.7
Murray	451	2.6
Rockingham	2,424	1.8
Serpentine-Jarrahdale	411	1.7
South Perth	605	1.3
Victoria Park	722	1.9
Waroona	152	3.6

Figure 6. Estimated Aboriginal population in Perth South PHN by LGA, 2015 (PHIDU, 2016).

Socio-economic factors such as overcrowded housing, low household income, and high imprisonment rates put Aboriginal people at higher risk of poor health.

In addition, access to mainstream health services is more difficult for the Aboriginal population due to socio-economic disadvantage, relatively poor mobility, poor record keeping, and a lack of culturally appropriate health services (Australian Health Ministers' Advisory Council [AHMAC], 2015).

> *"Life expectancy for Aboriginal people is much lower than non-Aboriginal people. In WA Aboriginal males have a life expectancy 14 years lower than non-Aboriginal males and Aboriginal females have a life expectancy 12.5 years lower than non-Aboriginal females"*
>
> *(AHMAC, 2015)*

Life Expectancy of Aboriginal People

In WA, Aboriginal people are known to have higher rates of death from chronic conditions, such as cardiovascular disease (CVD), diabetes, and kidney disease. The rate of suicide is consistently more than double that of non-Aboriginal Australians (ABS, 2014).

The Aboriginal concept of health is not the same as in Western society. Instead of the biomedical understanding alone, it is holistic and all-encompassing concepts that include the land, environment, community, relationships and physical (National Aboriginal Health Strategy, 1989). It is important that healthcare providers are appropriately trained and understand this concept.

Of the Perth South PHN population, 17% were born in countries culturally and linguistically different from Australia

Culturally and Linguistically Diverse (CALD)

People with low English proficiency or who have come from culturally diverse backgrounds experience language and cultural barriers in accessing the right service, in the right place, at the right time. The ethnic composition of a population can provide insight into potential health service requirements.

People who have migrated to Australia often experience a deterioration in mental health linked to the stressful process of immigration, change in culture, issues such as racism and discrimination, language and social difficulties and difficulty in finding employment (Office of Multicultural Interests, 2013).

There is a higher percentage (17%) of people born in predominantly non-English speaking countries among Perth South PHN residents than the WA (14.4%) and Australian (15.7%) averages in 2011 (PHIDU, 2016). An estimated 2.3% of the PHN residents had low English proficiency in 2011, which was lower than the Australian average (3.2%). Among people with low English proficiencies in Perth South PHN, 20% were born in Australia, and 17% in China. The LGAs with the largest number of residents with low English proficiencies were Gosnells and Canning (more than 4,000), and Cockburn (more than 2,400) (ABS, 2011).

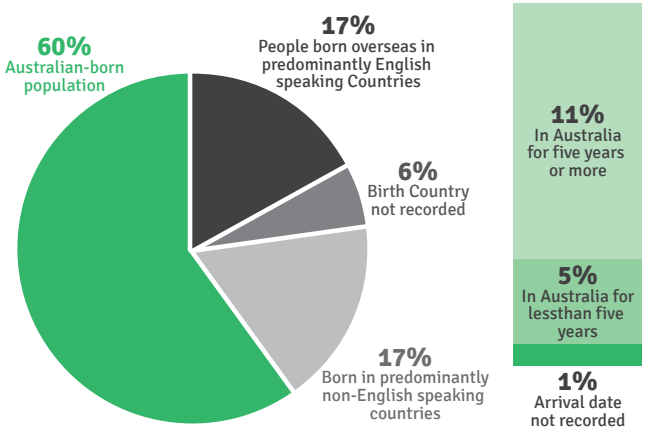


Figure 7. Country of birth, English proficiency and years since arrival in Perth South PHN, 2011 (PHIDU, 2016).

Refugees

As well as experiencing the same health conditions as the general population, refugees, humanitarian entrants and asylum seekers are at particular risk of mental health concerns as a direct result of the refugee experience and their displacement (Mindframe, 2014). During 2010-15, 2,406 humanitarian migrants were settled into Perth South PHN. The highest number resided in Gosnells (791), Canning (746) and Armadale (171) (Department of Social Services [DSS], 2015).

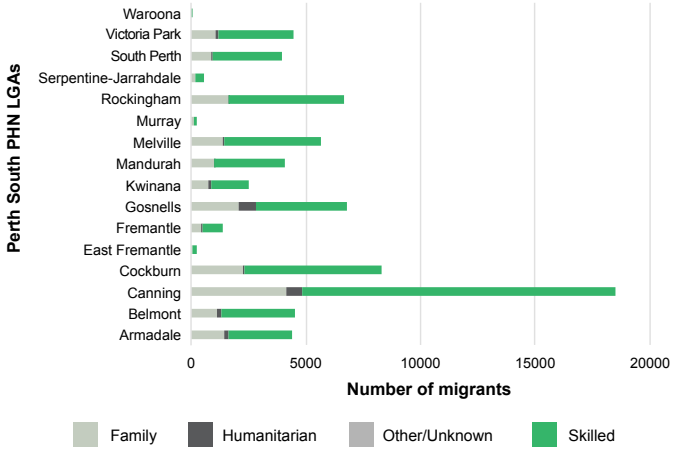


Figure 8. Type and number of migrants in Perth South PHN by LGA, 2010-2015 (DSS, 2014).

Homeless People

Homelessness is associated with increased severity and complexity of chronic conditions and increased risk of infectious diseases due to poor living conditions (AIHW, 2012). Of all homeless people in WA in 2011, 35% were Aboriginal. This proportion is large, as the Aboriginal population accounts for only a small proportion of the general population.

Most people who are homeless in WA were living in severely crowded dwellings (43.3%) in 2011. If they were not, they were staying temporarily with a household (22.61%), in a boarding house (13.94%), in supported accommodation for homeless people (9.7%), in improvised dwellings, tents or sleeping out (9.64%), or in temporary lodging (0.79%). In Perth South PHN, the highest number of recorded homeless people was in Gosnells (417), Fremantle (383), and Canning (272) (ABS, 2011).

Other Vulnerable Groups

People in disadvantaged groups are more likely than the general population to experience poor health outcomes due to physical, social and economic factors. Other vulnerable groups in Perth South PHN include: fly-in fly-out workers, people with disabilities, carers, the prison population, and the LGBTIQ community.

Vulnerable people have less access to the right services; this includes people who are disadvantaged by their age, gender or disabilities. Some services may not be culturally appropriate and therefore access is restricted to that individual.

Risk Factors and Health Status

Changing health behaviours can slow, stop or even reverse progression of disease and occurrence of multiple health conditions in the rising-risk population

The social determinants of health

The social determinants are the 'conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes' (Centres for Disease Control and Prevention, 2016). Between one third and one half of the differences in life expectancy are considered to be explained by differences in the social determinants of health (DoH, 2016b).

In rural and remote communities, social disadvantage is accentuated by factors including environmental and communication challenges and limited access to services (National Rural Health Alliance, 2016).

Due to the impact of social determinants on health inequalities, measuring the size of the health gap between groups is important for the development of policies and initiatives to address these differences (AIHW, 2016a).

Risk Factors and Lifestyle Behaviours

A person's health and wellbeing can be influenced by a number of related biological, behavioural and environmental factors. Risk factors and lifestyle behaviours such as smoking, harmful drinking of alcohol, physical inactivity and obesity can lead to the development and progression of chronic conditions.

In 2011-13, 66% of the population in Perth South PHN were estimated to be overweight or obese (Figure 9). The rates were similar to those for both WA (65%) and Australia (63%), indicating that this is an Australian-wide health issue (PHIDU, 2016).

The estimated rates of smoking for males (21%) and females (17%) for Perth South PHN were similar to the WA (males: 21% females: 17%) and higher than the Australian (males: 20% females: 16%) averages.

7% of Perth South PHN adults consume high risk amounts of alcohol.
(PHIDU, 2016)

19% of adults in Perth South PHN are current smokers.
(PHIDU, 2016)

29% of adults in Perth South PHN are obese (37% are overweight).
(PHIDU, 2016)

54% of adults in Perth South PHN are not sufficiently active.
(ABS, 2013b)

90% of metropolitan residents do not meet fruit and vegetable guidelines.
(ABS, 2013b)

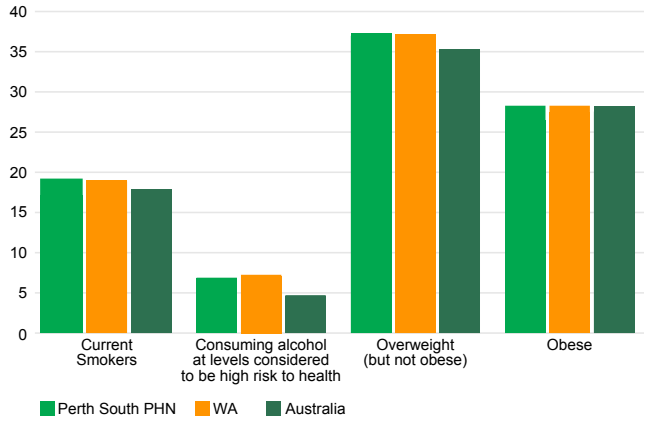


Figure 9. Prevalence of overweight/obesity, smoking and risk alcohol consumption in Perth South PHN, WA and Australia, 2011-2013 (PHIDU, 2016).

The percentage of people from Perth South PHN (7%) who were estimated to be consuming alcohol at levels considered to be a high risk to health was also similar to the WA (7%) and significantly higher than the Australian (5%) averages (PHIDU, 2016).

In 2011-12, 54.2% of adults in Perth South PHN were insufficiently active for good health. The level of inactivity was higher than Perth North PHN adults (51.5%). During the same period, 90% of people in Perth South did not meet recommendations for fruit and vegetable consumption, which was higher than for Country WA (88.1%) (ABS, 2013b).

Rising-Risk Chronic Condition Population Group

The rising-risk chronic condition population group is a newly defined term, based on the Population Health Management (PHM) Care Model, which groups approximately 20-30% of the population with chronic conditions who actually account for a higher total healthcare spend than the high risk group (5%). The rising-risk chronic condition population group is not yet sick enough for expensive clinical care, and they are past the point where preventative solutions are effective. This is known as the care gap (Lobelo et al, 2016).

To stop the progression of disease and the occurrence of multiple health conditions, it is important to target the risk factors and behaviours that are the ultimate cause of chronic conditions, and to prevent this group moving into the high risk category.

By defining the rising-risk group, health providers can target at-risk populations, associated socio-economic determinants and health behaviours to slow, stop or even reverse chronic conditions.

Respiratory, musculoskeletal and mental health conditions are the highest rates of chronic conditions across the Perth South PHN, followed by circulatory system diseases

Long-term Poor Health

Long-term or 'chronic' conditions are the leading cause of disability and death in Australia and are associated with most of the burden of ill health. Approximately one in two Australians have a chronic condition, with one in five affected by multiple chronic conditions (AIHW, 2015a).

There are many conditions that can be considered chronic. These conditions pose a significant burden in terms of individual quality of life and health care costs in Australia, however they are amenable to preventive measures.

Respiratory system (29%) and musculoskeletal (29%) system diseases are the most prevalent chronic conditions within Perth South PHN. Cancer and circulatory system diseases are the most frequent cause of death in Perth South PHN and Australia. Within Perth South PHN, the LGAs with the largest number of chronic conditions in 2011-13 were Rockingham (99,227), Gosnells (96,678) and Cockburn (81,023) (Figure 11) (PHIDU, 2016).

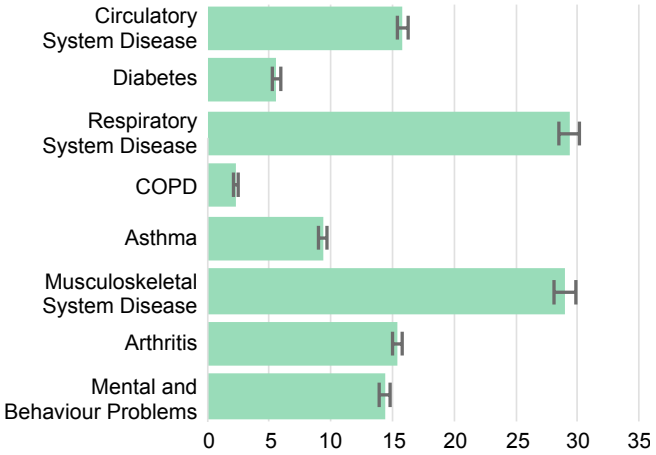


Figure 10. ASR of chronic conditions, per 100 population, Perth South PHN, 2011-13 (PHIDU, 2016).

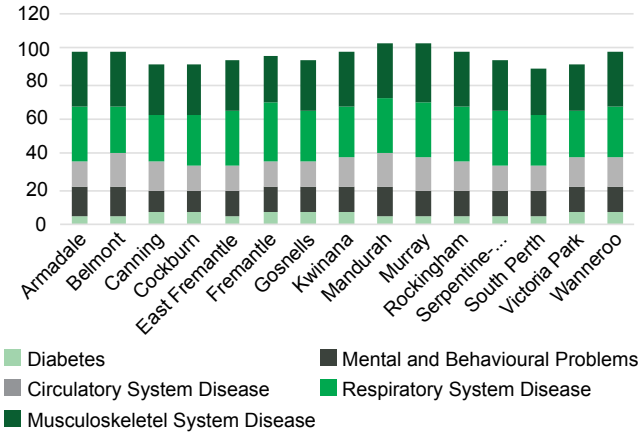


Figure 11. ASR of chronic conditions in Perth South by LGA, 2011-13 (PHIDU, 2016).

Diabetes Mellitus

It is estimated that in Australia, for every five diagnosed cases of diabetes, there are four undiagnosed cases (Baker ID, 2012). Estimated rates of diabetes are based on population trends and models and, when compared to the National Diabetes Services Scheme, appear to be an underestimate of the total diabetic population.

In 2016, 10% of the Perth South PHN population were registered diabetics with either type 1, type 2 or gestational diabetes (National Diabetes Services Scheme, 2016). This is considerably higher than the estimated rate in 2011-13 of 5.6% (PHIDU, 2016). To achieve consistency among rates of chronic condition the later proportion has been used.

Life Expectancy

The life expectancy for people in WA (80.1 for males and 84.8 for females) is slightly higher than the Australian average. The life expectancy gap between Aboriginal and non-Aboriginal people in WA (15.1 in males and 14.6 in females) is greater than the Australian gap (12.5 in males and 12 in females) (PHIDU, 2016).

During 2009-2013, the median age at death for residents across the Perth South PHN was 80 years old. The lowest median age at death was in Serpentine-Jarrahdale (73 years), Murray (75), Kwinana (75) and Armadale (76 years), and highest in East Fremantle and South Perth (86 years) (PHIDU, 2016).

> **44%** *of people in the Perth South PHN reported living with at least one chronic condition in 2013-14*
>
> *(NHPA, 2015a)*

Typically, males die earlier than females; during 2009-2013, the median age at death for Perth South PHN was 77 years for males and 84 years for females. The lowest median age at death in the PHN was 68 years (Serpentine-Jarrahdale) for males, and 75 years (Murray) for females (PHIDU, 2016).

It is important that people with chronic conditions have access to the right care, at the right time, in the right place. This supports them to manage their conditions outside the hospital setting.

Nearly 40% of people aged 45 years and over suffer from two or more chronic conditions

Potentially Preventable Hospitalisations due to Chronic Conditions

Poorly managed chronic conditions and risk factors can lead to the occurance of more than one condition, complications and PPHs.

44.1% of all PPHs in metropolitan WA were due to chronic conditions in 2015-16 (DOH, 2016d). In Perth South PHN, the most common PPHs are from chronic obstructive pulmonary disease (COPD), and congestive heart failure (NHPA, 2015b).

> *"People are living longer, but with more disease and disability: an unprecedented transition from a world with communicable diseases to one with chronic disease and disability, with implications for welfare of people worldwide."*
>
> *(Atun, 2015)*

Living with Several Chronic Conditions

Half of all Australians are living with a chronic condition, and a fifth have at least two (AIHW, 2015a). These proportions increase with age, with nearly 40% of people aged 45 years and over suffering from two or more chronic conditions.

Living with several long-term conditions (comorbidities) is associated with overall poorer health outcomes, more frequent use of health services and higher healthcare costs, including PPHs (AIHW, 2015a).

Diabetes, Heart and Chronic Kidney Diseases

Diabetes and hypertension (abnormally high blood pressure) are frequently co-occurring conditions; the coexistence of both conditions can exacerbate a number of complications including CVD, kidney disease, eye diseases and lower limb amputations (Long, A. & Dagogo-Jack, S., 2011).

Cardiovascular disease, especially hypertension, is one of the major causes of chronic kidney disease (AIHW, 2016b).

28% of adults in Mandurah have cardiovasular disease (CVD) in 2011-12.
(NHF, 2012)

64% of all CVD deaths in Australia occur in people with diabetes or pre-diabetes.
(AIHW, 2014)

Aboriginal people are 4 times more likely to have diabetes and die from it than non-Aboriginal Australians.
(AIHW, 2016a)

Over 30% of people with diabetes suffer from depression and anxiety.
(Tanamas et al., 2013)

Carers often experience significant declines in their physical, mental and emotional health.
(Brodaty & Green, 2002; Rammuthugala, Nepal & Brown, 2009)

Physical and Mental Health Co-morbidities

People with poor mental health generally have higher rates of physical conditions than the wider population, particularly for conditions related to behavioural factors such as smoking, drug and alcohol abuse, obesity and other lifestyle factors. People with poor mental health are also more likely to die from major diseases than the wider population (Coglan et al., 2001).

Oral Health

Oral health conditions are among the most common and costly health issues experienced by Australians, and poor oral health has been associated with poor general health (Garcia et al., 2000). More than 3,300 PPHs in Perth South PHN during 2014-15 were due to dental conditions. It is the most frequent cause and contributed to 30% of all acute preventable hospitalisations in the PHN (NHPA, 2015b).

Poor oral health is known to have resulted from chronic condition, lifestyle behaviour (such as illicit drug use, poor nutrition) or taking certain medications (Australian Research Centre for Population Oral Health, 2011).

Australia's ageing population means that there will be a significant rise in the prevalence of people with a number of conditions over the coming decade unless more effective preventative, management and treatment services are put in place.

Mental Health, Suicide Risk, Alcohol and Other Drugs

Mental health

Poor Mental Health

Mental illness is used to describe a wide spectrum of mental health and behavioural disorders, which can vary in both severity and duration. The most prevalent mental illnesses are depression, anxiety and substance use disorders. Less prevalent, and often more severe illnesses include schizophrenia, schizoaffective disorder and bipolar disorder.

> *In WA, **59%** of the adult and **65%** of the juvenile prison population, experiences a mental health condition*
>
> *(Western Australian Mental Health Commission [WA MHC], 2015)*

Mental Health and Disadvantage

Many people with mental health difficulties face compounding disadvantages, particularly Aboriginal people and those who are marginalised due to their sexuality, gender, cultural background or their job, people who have difficulties with alcohol or other drugs, people living with an intellectual disability and people who experienced childhood trauma (National Mental Health Commission [NMHC], 2014).

In Perth South PHN, an estimated 73,645 people aged 18 years and over were living with high or very high psychological distress based on the Kessler 10 Scale (K10) in 2011-13. The LGAs with the highest rates were Mandurah (13.3%), Waroona (12.1%), Belmont (11.6%) and Gosnells (11.6%) (PHIDU, 2016).

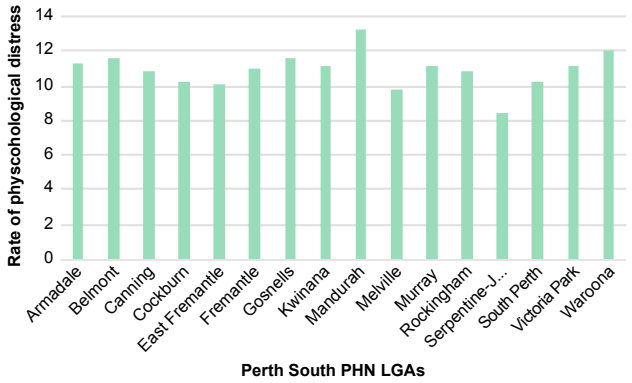


Figure 12. ASR of estimated adult population (18 years and over) with high or very high psychological distress, per 100 population, in Perth South PHN by LGA, 2011-13 (PHIDU, 2016)

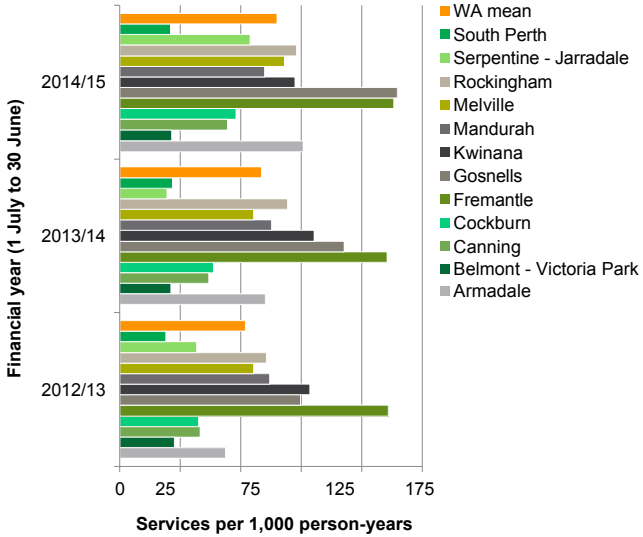


Figure 13. GP mental health assessments (Medicare Benefits Schedule Group A20) per 1,000 person-years by SA3 in WA, 2012-13 through 2014-15 (Department of Human Services [DHS], 2016).

Diagnosed Disorders

During 2011-2013, almost 110,500 people were living with diagnosed mental health or behavioural conditions in Perth South PHN. During 2012-13, there were 28,009 GP Mental Health Care Plans prepared in Perth South PHN. During 2014-15 financial year, 61,359 were prepared in this PHN, 18,412 of which were prepared for residents in Rockingham and Gosnells (DoH, 2016c). The majority of rates for GP mental health assessments have increased during the last few years, particularly in Serpentine-Jarrahdale which has seen a close to 70% increase from the 2012-13 to 2014-15 financial year. This means that less than half of people in the region who were experiencing poor mental health had an up-to-date Mental Health Care Plan. The majority of rates for GP mental health assessments have increased during the last few years, particularly in Gosnells which has seen a rapid increase.

The dementia prevalence in Perth South PHN is second highest in WA, with the most cases occurring in Melville (1,400 cases) in 2010 (Alzheimer's Australia WA, 2015).

> *Almost **1 in 2** people in Western Australia will experience a mental illness at some point in their lives*
>
> *(ABS, 2007)*

Mental Health Hospitalisation Rates

Rates for mental health hospital admissions were lower than the WA and Australian averages. Admissions for mental health related conditions were highest in Fremantle and East Fremantle (WA Health, 2014). There has been a significant increase in the rate of mental health related ED attendances in the Peel region from 2011-2013 (DoH, 2015a).

Mental health and wellbeing have a range of risk and protective factors that are related to socio-economic and environmental determinants, such as poverty, and inequity but also individual and family-related determinants.

Suicide risk across the PHN

Suicide Risk

Mental illness and suicide risk is intrinsically linked to the social determinants of health and socio-economic disadvantage experienced by high risk populations. Socio-economic factors may influence behavioural factors such as alcohol consumption and smoking status, and can contribute to an individual's decision to seek appropriate and timely health care.

Suicide and Aboriginal People

In Australia, there were 25.5 suicides per 100,000 Aboriginal people during 2015, which was double the rate for non-Aboriginal Australians (12.5) (ABS, 2016). Aboriginal people aged 15 years and older report stressful events at 1.4 times the rate of non-Aboriginal people (ABS, 2013a).

Suicide is the fifth most common cause of death for Aboriginal people, explaining in part the considerably higher rate of suicide in more remote parts of Australia. Identifying a deceased person as Aboriginal can be difficult to determine and, as a result, the quality of Aboriginal deaths data may be inaccurate and likely underrepresentation of suicide in indigenous people. Suicide was the leading cause of death in Aboriginal people among 15 – 24 and 25 - 34 years of age in 2015, at 3.9 and 3.2 times the rate of non-Aboriginal people respectively (ABS, 2016).

WA's suicide rate is **22%** higher than the Australian average (WA MHC, 2016)

In WA, **1** person died by suicide every day during 2012 (WA MHC, 2016)

Men die by suicide at nearly **3** times the rate of women (WA MHC, 2016)

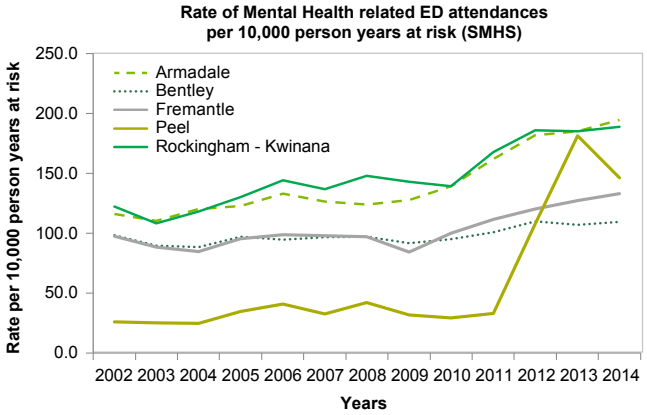


Figure 14. Rate of mental health-related ED attendances per 10,000 person years at risk, 2002-2014 (SMHS) (DoH, 2015a).

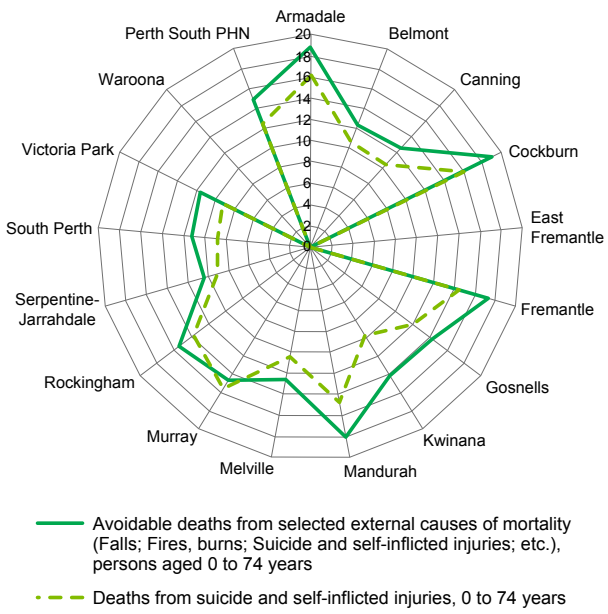


*Figure 15. Deaths from suicide and self-inflicted injury (0-74 years) in Perth South by LGA, 2009-13 (PHIDU, 2016).**

Suicide and Young People

Youth suicide rates for Aboriginal and non-Aboriginal people in Australia are higher than in many other countries, and are increasing. Suicide is the leading cause of death for 15 to 44 year olds in Australia. Considering all causes of death, suicide accounted for 21.9% of deaths among 15-19 year old males, and 28.7% of deaths among 20-24 year old males in 2012. The corresponding percentages for females in both of these age groups has been increasing (ABS, 2016).

> *"30% of mental health conditions in adults are related to adverse experiences in early childhood and up to half of lifetime poor mental health start by the age of 14."*
>
> *(Commissioner for Children and Young People, 2011)*

Suicide Risk in Perth South PHN

The LGAs of Gosnells, Fremantle and Belmont all have higher risk factors including social and economic status outside the regional average. Several areas in Perth South PHN had a rate of deaths from suicide and self-inflicted injuries (in people 0 to 74 years) that was above the Australian average (10.8 per 100,000), including Cockburn (16.1), Armadale (16.0), Murray (15.5) and Fremantle (14.7), but are not statistically significant due to a small sample size (PHIDU, 2016).

Suicide has a profound effect on others. Children whose parents suicide are three times as likely to take their own lives as children living with their parents (Wilcox et al., 2010). 'Postvention' strategies are key to supporting those at risk.

* Please refer to data limitations on page 55

Alcohol and other drugs (AoD): issues and concerns

Profile of Prescription Medication in WA

Opioids are commonly prescribed to ease persistent pain. There has been an increase in the use of medical and non-medical use of opioids (DoH, 2016e), with 4.5% of Australians (14+years old) self-reporting use of tranquilisers or sleeping pills for non-medical purposes (The Cabin, 2016).

The rate of prescription drug addiction in Australia is the second highest in the world. The most commonly misused opioids are codeine and oxycodone, due to their euphoric 'high' (The Cabin, 2016). During 2007 to 2011 there were 279 opioid-related deaths in WA (DoH, 2016e).

It has been suggested that there is a link between the use of non-medical use of prescription opioids and major depression. A correlation has also been established between the use of opioids and lower socio-economic status (Nicholas, Lee & Roche, 2011).

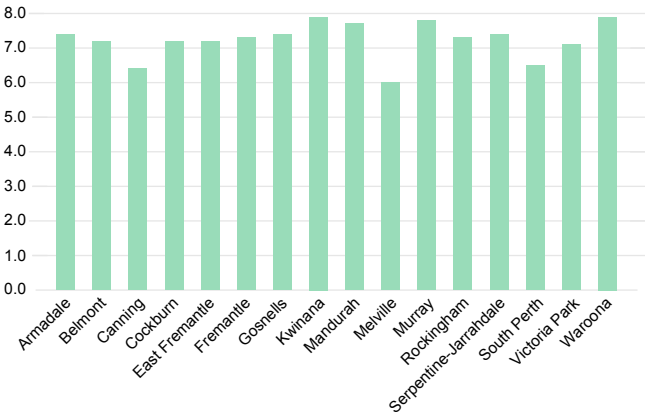


Figure 16. Estimated adult population (18 years and over) consuming alcohol at high risk levels in Perth South PHN by LGA, 2011-13 (PHIDU, 2016)

Alcohol

Alcohol is the most prevalent drug used in WA and causes the most drug-related harm (excluding tobacco) in the community. Harmful alcohol consumption is highest in Kwinana (7.9%), Waroona (7.9%), Murray (7.8%) and Mandurah (7.7%) (PHIDU, 2016). Alcohol-related hospitalisations in WA have consistently increased. For the period from 2007-2011, residents in the South Metro Health Region were hospitalised a total of 25,025 times for alcohol-related causes. A total of 131,985 bed days (32.4 per 1,000 capita) were consumed at a cost of $164,713,915 ($40.47 per capita) in the Perth south metropolitan area (Drug and Alcohol Office, 2014).

> *"People experiencing severe and multiple disadvantage have often grown up in worlds where alcohol or drug use, violence, or offending are normal. How much does it take for someone to recognise and challenge these norms? Services need to not just focus on the individual, but also support whole families and sometimes communities to change."*
>
> *(Innovation Unit, 2016)*

1 in 4 Western Australians are drinking at a level that is high risk of life-time harm (Hood, Miller & Christou, 2010)

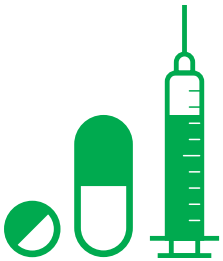
In WA, almost **1 in 3** people who died by suicide had alcohol and other drug use issues noted three months prior to their death (WA MHC, 2015)

Illicit drugs

Western Australians reported the joint highest rates of illicit drug use in the last 12 months within Australia (AIHW, 2015b). In WA, cannabis continues to be the most widely used illicit drug, despite its use declining over the past 10 years (de-identified data source, 2016).

Methamphetamine

In 2013, the National Drug Strategy Household Survey reported that methamphetamine was the illicit drug of most concern to the community. The proportion of Western Australians using methamphetamines (3.8%) was significantly higher than the proportion for Australia (2.1%) (AIHW, 2013). The number of drug treatment episodes for residents in WA for methamphetamine has almost doubled since 2010 to 2013 from 2,466 to 4,958 (de-identified data source, 2014).



AOD and Mental Health

Areas with high harmful alcohol consumption rates frequently have high rates of psychological distress. Kwinana, Waroona, Murray, Mandurah, Gosnells and Armadale have harmful alcohol rates equal to or higher than the average for Perth South PHN, and a rate of psychological distress equal to or higher than the average for Perth South (PHIDU, 2016).

Alcohol and other drug use can result in increased hospitalisation rates both as a direct result of AOD use and an indirect result of the onset of chronic physical and mental conditions and associated comorbidities.

Service Mapping and Utilisation Summary

Access to primary health services

General Practice

General practice is fundamental in ensuring seamless transfer of care between hospital and primary care pre- and post-discharge; and between GP and allied health services in the management of complex, chronic and multi-morbid conditions.

There are 232 general practices in Perth South PHN (National Health Service Directory [NHDS], 2016). The LGAs with the highest population number per general practices during business hours are Victoria Park, Rockingham and South Perth, indicating a poorer supply of services (NHSD, 2016; ABS, 2015).

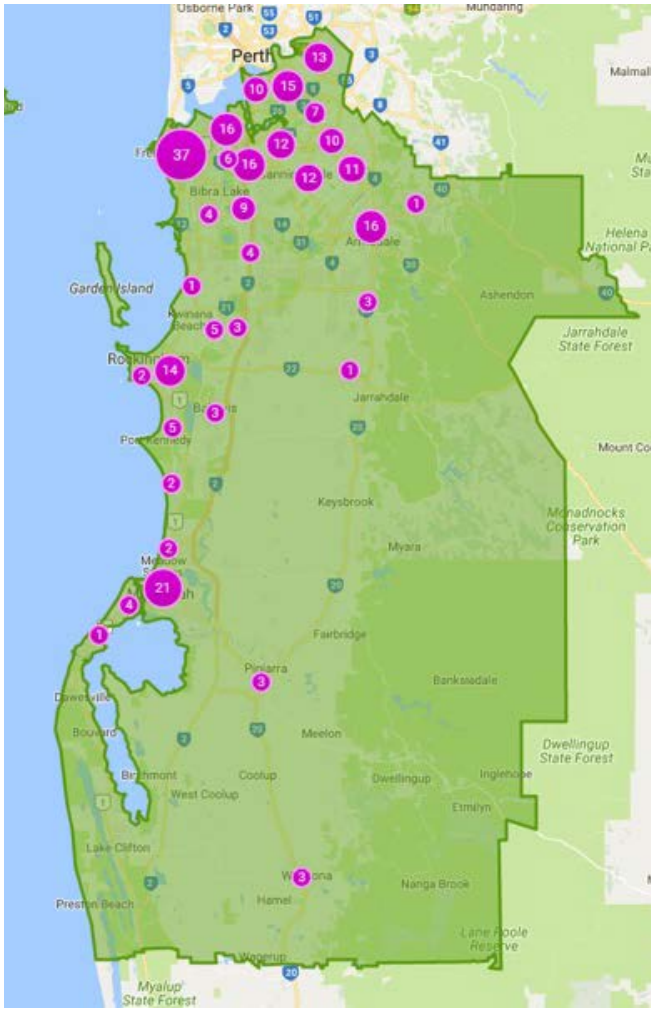
Barriers in accessing services identified in Perth South PHN adult population were:

- 31.2% have difficulty accessing services
- 13.8% could not afford medical consultation
- 12% could not afford prescription medication
- 2.9% cannot get to places due to transport
- 24.5% did not access internet at home in the past 12 months.

Cockburn, Kwinana and Murray had a higher than WA average of adults who limit their access to medical services due to unaffordability. Kwinana and Belmont had higher than WA average of adults who delayed purchasing prescriptions due to unaffordability (NHPA, 2013).

Workforce

The supply of registered health professionals was lower than major cities and inner regional Australia across all disciplines (GPs, nurses, pharmacists, dentists, physiotherapists, podiatrists, psychologists, occupational therapists were selected for analysis) in 2014. There is a tendency of clustering of registered clinicians practicing around Fremantle, East Fremantle, Melville and Canning.



Map 2. GP services in Perth South PHN, 2014 (NHSD, 2016).

In 2015, the highest numbers of GPs registered to practise were found in the LGAs of Melville, Canning and Rockingham; however, Fremantle, East Fremantle, Melville and Canning had the highest GP to population ratios. All other LGAs have consistently lower than the WA and Australian averages of GP to population ratios between 2013 and 2015 (DoH, 2015b; ABS, 2015). Serpentine-Jarrahdale had the highest population growth, but lowest GP to population ratio, which means this LGA may be under considerable strain from a lack of services (DoH, 2015b; ABS, 2015).

There were 810 registered dental practitioners in Perth South PHN in 2014. The LGAs with the highest numbers of dental practitioners were Melville (157), South Perth (102), and Canning (97) (DoH, 2015b). However, South Perth, Fremantle and Melville had the highest dental practitioners to population ratios (DoH, 2015b; ABS, 2015). Perth South PHN had similar supply of dental practitioners (dentists, oral health therapists, dental hygienists, and prosthetics) per unit population (81 per 100,000) to the Australian average in 2011, yet in 2013/14 this PHN had higher rates of dental condition PPHs than most metropolitan PHNs in Australia (NHPA, 2015b). Further investigation is required to explain this inconsistent finding.

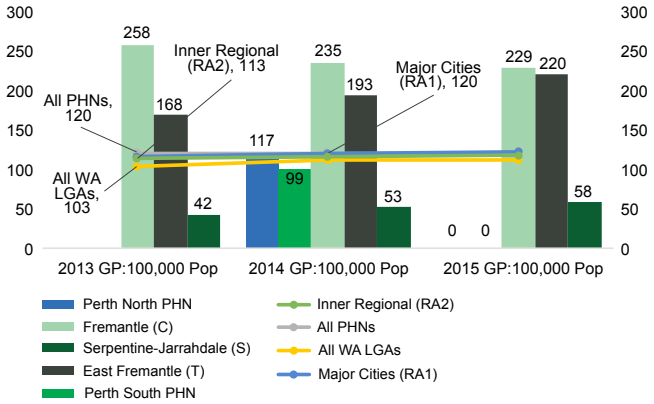


Figure 17. General practitioner to population ratio (per 100,000 population) in Perth South PHN, 2014 (DoH, 2015b; ABS, 2015).

Use of primary care services

MBS utilisation provides an indication of access and coverage of primary health care services in the region. Perth South PHN residents were among the least frequent users of MBS services in 2014-15 per 100 population in Australia's metropolitan PHNs across a number of MBS reporting groups.

Access to Primary Care

The rate of GP attendances (vocational and non-vocational registered) in the Perth South PHN is higher than most PHNs in Australia, at 45.2 services per 100 population in 2014-15 (Figure 18); however, there are less likely to be consultations for longer durations, and/or outside of consulting rooms (DoH, 2016c).

The GP chronic disease, GP health assessment and GP mental health MBS claims to population ratio are all comparably lower than other PHNs (Figure 18). MBS utilisation of nursing, Aboriginal health workers and allied health services are below the medium among all PHNs in 2014-15 (Figure 19) (DoH, 2016c).

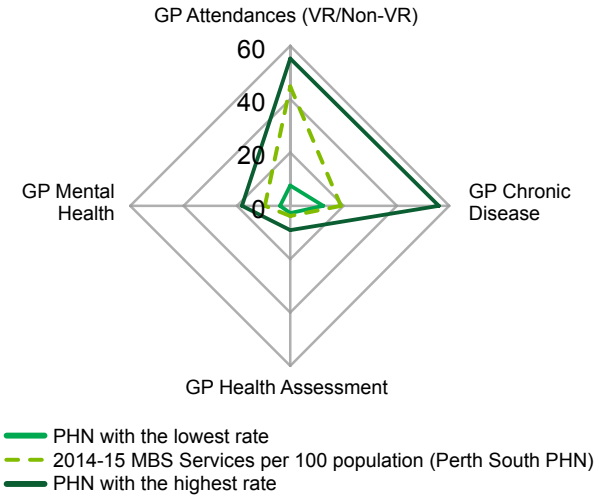


Figure 18. MBS GP services per 100 population in Perth South PHN, 2014-15 (DoH, 2016c).

Across all sub-regions in Perth South PHN, allied mental health incurs the highest out of pocket costs to the consumer, and there appears to be an increasing trend in the amount charged (DoH, 2016c). This raises issues on the sustainability of bulk-billing services for allied health service providers, as well as the affordability of allied health services for the consumers.

After Hours GP Services

In the 2015/16 financial year, 2,044,061 after hours services were delivered in the Perth metropolitan area. This translates to 36 services per 100 population. 71% of the after hours MBS services were delivered at health centres, and 23% were urgent attendances, shown in Figure 20 (DHS, 2016).

41% of the general practices in the Perth South PHN are delivering after hours services (NHSD, 2016). The most frequent users are children under 5 years of age and people over 65 years of age (NHPA, 2015b).

Victoria Park, South Perth, and Kwinana have the highest population number per general practice that opens during the after hours period, indicating a relatively poor supply of services (NHSD, 2016; ABS, 2015). PPH rates in

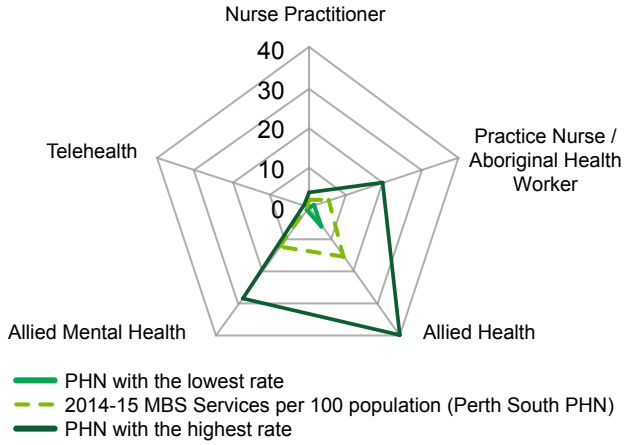


Figure 19. MBS services per 100 population in Perth South PHN, 2014-15 (DoH, 2016c).

Belmont-Victoria Park and Kwinana are also highest in the PHN, which may be influenced by a lack of services in these areas (NHPA, 2015b).

Cancer Screening Participation

Perth South PHN had similar rates to WA for breast, cervical and bowel cancer screening participation for 2014-15 (AIHW, 2016c). Armadale and Belmont-Victoria Park SA3s had participation rates lower than the PHN and WA for all cancers.

Participation rates % 2014-2015	Perth South PHN	WA
Breast screening (females 50-74 years)	54.1	55.2
Cervical screening (females 20-69 years)	53.7	55.7
Bowel screening (people 50-74 years)	40.7	41.0

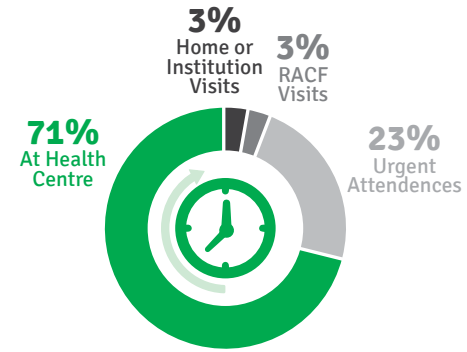


Figure 20. Proportion of MBS after hours services in Perth Metropolitan, July 2015-June 2016 (DHS, 2016).

After hours period is traditionally defined as: before 8:00am and after 6:00pm (weekdays); before 8:00am and after 12:00pm (Saturday); all day on Sunday and public holidays. Social hours are 6:00pm to 11:00pm and unsocial hours are 11:00pm to 7:00am.

Hospitalisations: potentially preventable or avoidable emergency presentations

PPHs are hospitalisation that could have been avoided by appropriate and accessible primary health care. There are three types of PPHs: acute, vaccine preventable and chronic (NHPA, 2015b). During 2013-14, 5.8% of the hospitalisations in WA were potentially preventable (AIHW, 2015a). PPHs can be an indication of under-utilised primary care, and a warning of health system failure.

Hospitalisations

There were 1,081,463 hospital separations in WA during the 2014-15 financial year, which was a 3% increase from 2010-11. During this time, the public-private split was 55% to 45%. Increases in demand for admitted patient care were experienced by 2.3% for public hospitals, and 3.8% for private hospitals (AIHW, 2015a).

Available beds in WA's public hospitals in 2014-15 (2.2 per 1,000 population) had declined by 2.2% since 2010-11, which was below the Australian average (2.6) (AIHW, 2015d). This could indicate that the increasing demand in admitted patient care is not matched by the supply of hospital beds.

Potentially Preventable Hospitalisations

Perth South PHN has one of the lowest PPH rates in Australia, but there were still 21,605 episodes of PPHs in 2013-14. COPD and congestive heart failure were the leading causes of chronic condition PPHs during this time (NHPA, 2015b).

PPHs due to acute conditions are typically higher in the rural and remote areas compared to metropolitan PHNs in Australia. Perth South ranks high among metropolitan PHNs in acute PPHs with dental conditions, kidney and urinary tract infections as the most frequent causes of presentation. PPHs due to dental conditions in Perth South PHN (358 per 100,000 people) was the second highest reported rate among metropolitan PHNs in Australia, and was higher than the Australian average (273) in 2013-14 (NHPA, 2015b).

Emergency Department Presentations

Perth South PHN has among the highest rate of ED presentations in the metropolitan WA PHNs (29,414 per 100,000 population) (PHIDU, 2016). Relative utilisation (RU) is an age/sex standardised comparison of attendance rates compared to the Australian average of 100. Areas with a RU of more than 100 have higher than average ED attendance rates (DoH, 2016a).

In 2013-14, Perth South PHN had a higher rate of semi-urgent (triage 4) ED attendance rates (RU=105 and 121,054 presentations), and a lower rate of non-urgent (triage 5) ED attendance rates (RU=73 and 17,994 presentations) when compared to the Australian averages. These are potentially preventable and could have been treated in primary care (DoH, 2016a).

Fremantle and Mandurah have considerably higher rates for non-urgent ED attendances (RU=119 and 130) when compared to the Australian average. Areas with semi-urgent ED attendances higher than the Australian average were Serpentine-Jarrahdale (111); Armadale (129), Rockingham (137), Kwinana (138), Bunbury-Perth South Part (140) and Mandurah (189) (DoH, 2016a).

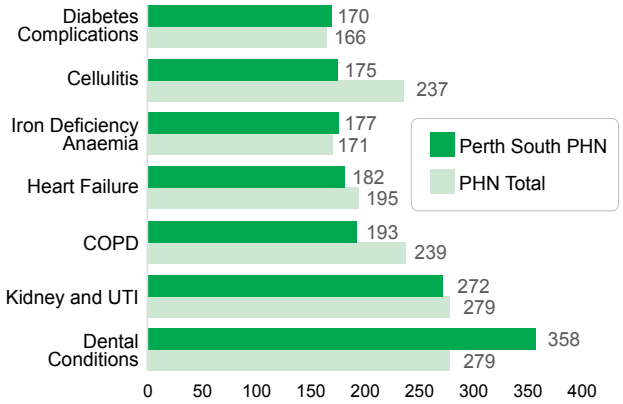


Figure 21. Leading Causes of PPHs in Perth South PHN and Australian PHN averages, hospitalisations per 100,000 population, 2013-14 (NHPA, 2015b).

After Hours Emergency Department Presentations

Stakeholder feedback indicates that some health consumers in WA have limited knowledge of how to access after hours GP services. ED and ambulance services are the default option. Trauma, neurological and abdominal conditions makes up over 60% of all ambulance presentations in the Perth South PHN (St John Ambulance, 2016), while ENT, digestive system, injuries, poisoning and toxic effects of drugs are the most common ED presentations in the after hours period (Curtin University, 2016).

Over half of the semi-urgent and non-urgent ED presentations in WA occurred in Perth metropolitan areas, with close to 30% of semi-urgent and 20% of non-urgent occurred in the after hours period (between 8pm to 8am) (Curtin University, 2016). This means that up to 70% of the semi-urgent and 80% of the non-urgent ED presentations, during the business or 'sociable hours' of 8am to 8pm, can potentially be prevented by accessing primary health care services.

PPHs may have been prevented by timely access and appropriate provision of primary health care. The rate of PPH can be used as an indicator of patients' access to community-based health care services and the effectiveness of these services.

Priority Locations of the Highest Health Needs

Perth South PHN priority locations of greatest health needs

What Defines Priority Locations of Greatest Health Needs?

As part of our commissioning activity, Perth South PHN has identified priority locations with the highest healthcare needs. Typically, these are local geographical areas where people live with poorer health, greater rates of hospital attendances and higher rates of inequalities. People living in these areas are often from more disadvantaged backgrounds, can sometimes delay treatment and don't always have access to appropriate health care in the region.

The methods used to identify areas in the Perth South PHN have been determined through comparing indicators to whole-of-region, WA and Australian averages. Indicators include socio-economic and demographic information, chronic disease prevalence rates, risk behaviours, childhood immunisation rates, cancer screening rates, mortality and morbidity data, and the rates of PPHs across the PHN compared to the WA average.

> *"Health literacy is the knowledge and skills needed to understand and use information relating to health issues such as drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid, emergencies and staying healthy"*
>
> *(ABS, 2009)*

Understanding these priority locations (or hotspots) enables us, as health planners, to target services to meet those individuals and communities who are in greatest need.

Regions also take into consideration stakeholder feedback and 'cold spots' i.e. where data is not available but there is an indication that the region has high health needs.

While overall the Perth South PHN is a relatively high ranking socio-economic region, there are local areas of low socio-economic, high disadvantage, high rates of chronic conditions and risky behaviours leading to long-term poor health. In addition, some areas do not have access to appropriate health workforce, both in and out-of-hours. While there may be adequate service provision across the PHN catchment, there are other access barriers including cost, transport or lack of cultural security.

Our analysis considers the three domains of:

- Social determinants
- Prevalence of risk factors and disease
- Poor access to and utilisation of services.

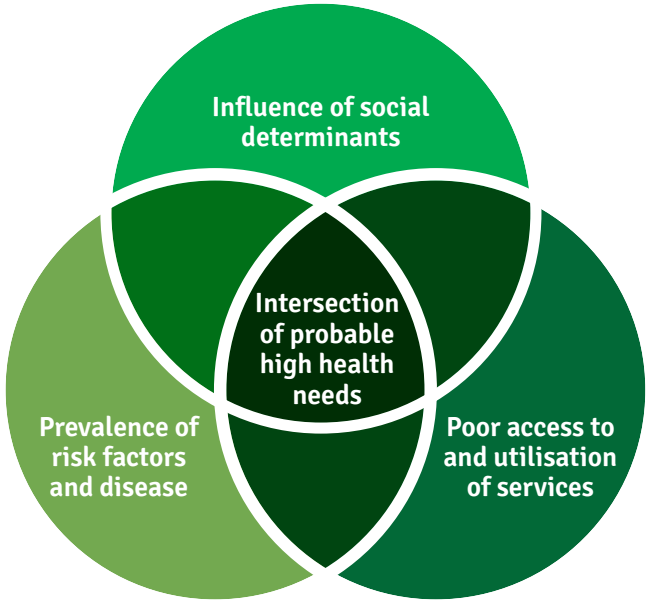


Figure 22. Domains of intersecting determinants of probable high health needs.

Where these domains intersect, it is likely that people living in these areas have lower health literacy and poorer health outcomes leading to higher rates of potentially preventable chronic conditions. We have identified 10 LGAs across the PHN as priority areas of greatest health needs. However, it should be emphasised that this is not a conclusive list. It is likely that there will be other areas across the PHN of unmet health needs affecting those individual that live there.

> *"The social determinants of health are complex and intertwined but education is one of the key social determinants that influences health literacy. Good public policy created by informed governments can strengthen social determinants and provide a means of both promoting health in general and reducing health inequalities to a minimum"*
>
> *(Raphael, 2012)*

Armadale: health needs

Of the Perth South PHN population, 8% lives in Armadale. In 2015, the number of residents identifying as Aboriginal (2,489) was estimated to be the third highest in the Perth South PHN. Armadale is an area of socio-economic disadvantage with high levels of avoidable mortality across multiple chronic conditions. Health risk behaviours, poor mental health and wellbeing, alcohol use, and suicide are of significant concern.

Health Outcomes

The median age at death for males (74 years) and females (80 years) in Armadale were both the fourth lowest in the Perth South PHN in 2009-13.

The rates of avoidable deaths from circulatory diseases (49.3 per 100,000 population) was significantly higher than the WA (36.6) and Australian (38) averages, while avoidable mortality for suicide and self-inflicted injuries (16 per 100,000) was significantly higher than the Australian average (10.8). Avoidable deaths from breast cancer, respiratory system disease and COPD are also higher than the Perth South PHN average (PHIDU, 2016). 15% of residents in Armadale reported fair or poor self-assessed health status (PHIDU, 2016).

Health Issues

In Armadale, the estimated prevalence of mental health and behavioural conditions (14.8%) and musculoskeletal system diseases (30.8%) were significantly higher than the Australian averages in 2011-13 (PHIDU, 2016).

Risk Factors

The prevalence of smoking (22.9%) and obesity (30.8%) in Armadale were significantly higher than the WA and Australian averages in 2011-13. The prevalence of people in Armadale who consume alcohol at a level considered high risk to health (7.4%) was significantly higher than the Australian average in 2011-13 (PHIDU, 2016).

The breast cancer screening rate was one of the lowest in Armadale SA3 in Perth South PHN (49.0%), and was considerably lower than the WA average (55%) in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score in Armadale (996) was close to the Australian average (1,000) in 2011, indicating relative socio-economic disadvantage. Twenty-eight percent of households in Armadale did not have internet access (PHIDU, 2016).

The proportion of children in Armadale who are developmentally vulnerable in one or more domains was 28%, third highest proportion in Perth South PHN and higher than the WA average of 23%. Armadale had the third lowest participation in secondary school education at 16 (63.4%), and school leaver participation in higher education was also the second lowest (17.2%), considerably lower than the Australian average (31.3%) (PHIDU, 2016).

The unemployment rate in Armadale (7.7%) was the third highest in the PHN. In this location, one in four (25%) of the families with children 15 years old or younger were single parented, which was the third highest in the PHN. The prevalence of low income households under financial stress from mortgage or rent (34.5%) was higher than the Stage average of 29.8% (PHIDU, 2016).

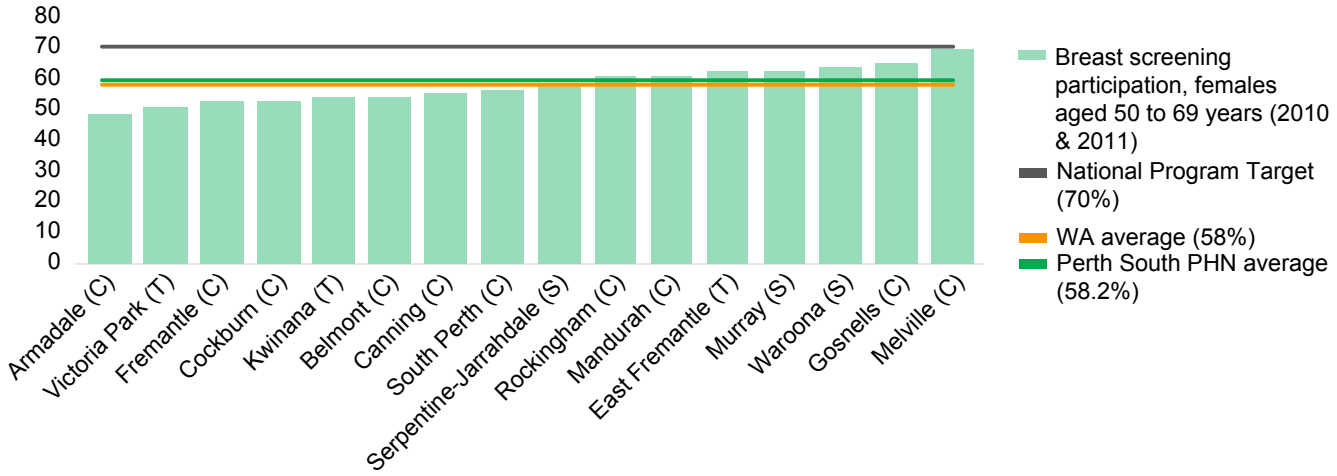


Figure 23. Breast cancer screening participation, females aged 50 to 69 years (2010 & 2011), (PHIDU, 2016).

Armadale: service gaps

Service Issues

There appears to be a mismatch of the demand for primary health care and workforce supply in Armadale. The significantly higher avoidable mortality from suicide and self-inflicted injuries, risky alcohol use, and prevalence of mental health and behavioural conditions in Armadale (PHIDU, 2016) suggest an increasing demand for mental health services. However, declines in GP and psychologist numbers were reported from 2013 to 2015 (DoH, 2015b).

The significantly high death rates from circulatory disease, high proportion of PPHs due to congestive heart failure and diabetes complications, and a comparable circulatory disease and diabetes prevalence to the WA and Australian averages points to delayed presentation and management (PHIDU, 2016).

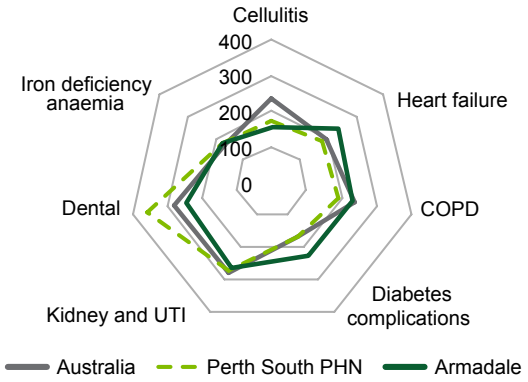


Figure 24. Leading causes of PPHs, hospitalisations per 100,000 population, in Armadale SA3, 2013-14 (NHPA, 2015b).

Potentially Preventable Hospitalisations

The rate of PPHs in Armadale was similar to the Perth South PHN rates in the 2013-14 financial year and both were lower than the Australian average. This represented 1,612 hospitalisations. The average length of stay was 3.7 days.

Almost 20% of the PPHs in Armadale were due to congestive heart failure and diabetes complications occurring at rates higher than the Perth South PHN, and Australian PHN averages. These may be associated with significantly higher mortality from circulatory disease, and significantly higher than the State and National average rates of smoking, obesity and risky alcohol consumption (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

Relative utilisation of semi-urgent (triage 4) ED presentations in Armadale was higher than the Australian average, while non-urgent (triage 5) presentations were slightly lower. This represented 11,785 semi-urgent and 1,817 non-urgent ED presentations in the 2013-14 financial year, close to 10% of Perth South PHN's non and semi-urgent ED presentations (DoH, 2016a).

Primary Care Workforce

Registered clinician to population ratio in Armadale was lower than WA, Australian, and all major cities and inner regional areas during 2013-15 for GPs, pharmacists, dental professionals (including dentists, hygienists, therapists etc.), psychologists and podiatrist (DoH, 2015b). Particular attention is required to understand the declining number of GPs and psychologists in the Armadale LGA since 2013-15, as Armadale residents appear to have higher needs for mental health services (DoH, 2015b).

Identified needs and gaps in the location:

1. Mismatch in the demand for management of mental health and behavioural conditions, and suicide prevention of suicide, and the supply of primary mental health workforce supply.
2. Delayed presentation of circulatory system disease.
3. Low breast cancer screening rate (49.0%).

Groups with specific needs:

- People who are socio-economically disadvantaged.
- Aboriginal and Torres Strait Islander people.
- Children who are developmentally vulnerable.

> *"I don't think there's enough support after, you know, the aftermath. You go to the hospital and you get diagnosed with whatever, you get administrated [sic] all these tablets to take, where's the support in the home? What happens is happening in the evenings. When the businesses shut down there's no-one out there. Health is 24/7."*
>
> *(Aboriginal Elder, Telethon Institute Looking Forward project, 2015*

How can the system address health needs?

- Community-based mental health services, including options for consumers and GPs.
- Integrated team care to support Aboriginal people with chronic disease.
- Work with general practice to support early detection and intervention of circulatory disease and diabetes through data extraction tools.
- Prioritise the improvement in uptake of HealthPathways for congestive heart failure and diabetes in Armadale.
- Primary mental health workforce development initiatives to both increase workforce numbers and capability to care for people living with mental health conditions.

Belmont: health needs

Belmont has the third highest proportion of residents born in predominantly non-English speaking countries (24.6%), and the second highest proportion of residents identifying as Aboriginal (3.6%) in Perth South PHN. It is a location of lower socio-economic status with a similar median age at death to the Perth South PHN average.

Belmont has high rates of smoking and risky alcohol consumption. The key health concerns in Belmont appear to be diabetes, circulatory and respiratory system conditions and poor mental health and wellbeing.

Health Outcomes

The median age at death for males (77 years) and females (83 years) in Belmont was similar to the Perth South PHN average for males (77 years) and females (84 years) in 2009-13 (PHIDU, 2016).

During the same period, it was estimated that Belmont had among the highest rates of avoidable deaths from circulatory disease (47%), diabetes (6.8%) and respiratory system diseases including COPD (9.3%) (PHIDU, 2016). 16% of residents in Belmont reported fair or poor self-assessed health status (PHIDU, 2016).

Health Issues

In 2011-13, the prevalence of circulatory system disease in Belmont (18.5%) was second highest among LGAs in the Perth South PHN. The prevalence of mental health conditions in Belmont (15.3%) was the second highest in Perth South PHN (PHIDU, 2016). 12% of Belmont residents reported high or very high psychological distress; this was third highest in the Perth South PHN (PHIDU, 2016).

Risks Factors

The prevalence of smoking (21.7%) and consumption of alcohol at levels considered high risk to health (7.2%) were significantly higher than the Australian average in 2011-13 (PHIDU, 2016).

The bowel cancer screening rate for adults (50-74 years) in Belmont-Victoria Park SA3 (38.0%) was the lowest in Perth South PHN, compared to the WA average of 41.0% in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score in Belmont (987) was lower than the Australian average (1,000) in 2011, indicating relative socio-economic disadvantage. 21% of households did not have internet connection (PHIDU, 2016).

It was estimated that 10,171 residents in Belmont came from non-English speaking backgrounds in 2015; 250 Mandarin speakers, 150 Arabic and 110 Cantonese speakers had low English proficiency (ABS, 2015).

There were approximately 249 homeless people in Belmont in 2011. This was the fourth largest number in the Perth South PHN (ABS, 2011).

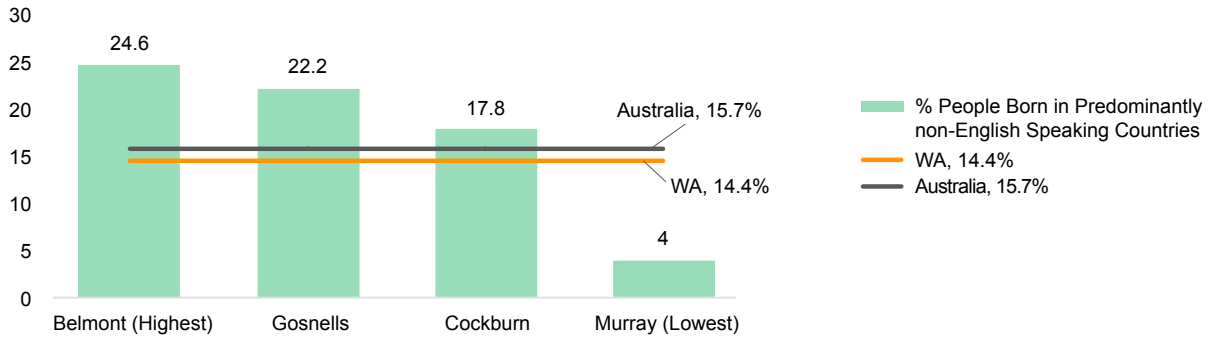


Figure 25. Highest proportions of residents born in predominantly non-English speaking countries in Perth South PHN by LGA, 2011 (ABS, 2011).

Belmont: service gaps

Service Issues

Belmont appears to have a mismatch between the prevalence of respiratory diseases, PPHs due to COPD and avoidable mortality from respiratory system diseases. This could be an indication of high rates of undiagnosed respiratory diseases in the population.

There also appears to be a mismatch between the higher demand for chronic condition care (circulatory and mental conditions) and lower supply of primary health workforce.

> *"[I need] a reliable and trusted GP who really cares and spends time to empower me to understand and manage my condition, not just less than five minutes consultation to prescribe medicine and claim Medicare payments."*
>
> *(Belmont community member)*

Potentially Preventable Hospitalisations

The rate of PPHs in Belmont-Victoria Park SA3 (2,721 PPH per 100,000) was the second highest in the Perth South PHN in 2013-14. There were 1,920 PPHs in this SA3 and the average length of stay was 4.4 days (NHPA, 2015b).

Belmont, together with the southern area of Victoria Park, had the highest PPH rates due to COPD among LGAs in Perth South PHN, resulting in 206 episodes of hospitalisations in the same year (NHPA, 2015b). The COPD PPH is reflected in Belmont's high avoidable mortality from respiratory diseases, but not reflected in its prevalence (PHIDU, 2016). The PPH rates due to heart failure and iron deficiency anaemia were also higher than Perth South PHN and the Australian averages. This coincides with the high prevalence of circulatory disease, high rates of avoidable mortality from diabetes and circulatory system diseases.

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) ED presentations was similar to the Australian average, while the utilisation of non-urgent (triage 5) presentations was lower. This represented 9,037 semi-urgent and 1,177 non-urgent ED presentations in the 2013-14 financial year in Belmont and south part of Victoria Park (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Belmont was lower than WA, Australia and major cities and inner regional areas in 2013-15 for GP, nurses, dental professionals (including dentists, hygienists, therapists etc), psychologists, podiatrists and occupational therapists (DoH, 2015b). There had been a declining trend in the number of nurses working in the Belmont LGA from 2013-15.

These trends are significant when mental and behavioural conditions, and circulatory system diseases are more prevalent in this LGA than other regions in Perth South PHN (DoH, 2015b).

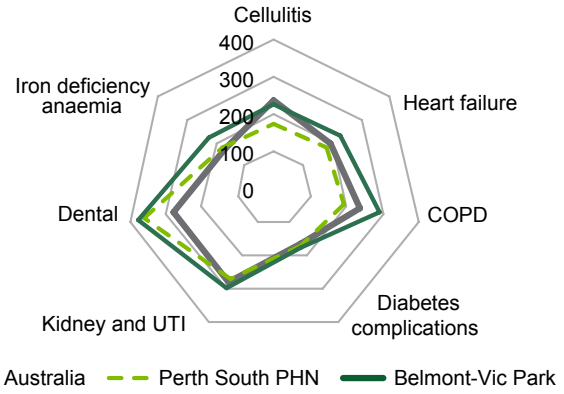


Figure 26. Leading causes of PPHs, hospitalisations per 100,000 population, in Belmont-Victoria Park SA3, 2013-14 (NHPA, 2015b).

Identified needs and gaps in the location:

1. Undiagnosed or delayed presentation of respiratory conditions particularly COPD.
2. High rates of health risk behaviours—smoking and risky alcohol consumption.
3. Risk of inadequate workforce supply to meet the demand of higher than average prevalence of chronic conditions (including mental health conditions, circulatory system conditions).

Groups with specific needs:

- People who are socio-economically disadvantaged.
- Aboriginal and Torres Strait Islander people.
- Children who are developmentally vulnerable.

	Risks	MH	DM	COPD	CVD
Early detection				•	
Timely management			•	•	•
Self-management	•	•	•	•	•
Team care		•	•	•	•
HealthPathways			•	•	•

How can the system address health needs?

- Early detection of respiratory diseases (CRC).
- Prioritise the improvement in uptake of HealthPathways for diabetes (DM), cardiovascular diseases (CVD), mental health conditions and COPD including management of COPD exacerbations.
- Supported self-management for:
  - people living with mental health conditions.
  - people living with diabetes, CVD, COPD.
  - people who wish to adopt a healthier lifestyle.
- Health workforce support to deliver multidisciplinary team care for people living with diabetes, CVD, CRC and mental health conditions.
- Integrated team care to support Aboriginal people with chronic disease
- Build capacity to deliver in-language services and health information for people from non-English speaking non-English speaking backgrounds.
- Consider the needs of homeless people.

Cockburn: health needs

Cockburn is a location of less socio-economic disadvantage which has lower than WA and Australian average prevalence of mental health and behavioural conditions.

However, the prevalence of health risk behaviours, and avoidable mortality from suicide and self-inflicted injuries in Cockburn were significantly higher than the State and National averages. 11% of Perth South PHN's population live in Cockburn, and 17.8% were born in predominantly non-English speaking countries.

Health Outcomes

The median age at death for Cockburn males (75 years) and females (81 years) were both lower than the Perth South PHN average for males (77 years) and females (84 years) (PHIDU, 2016).

The rate of avoidable deaths from suicide and self-inflicted injuries (16.1%) was significantly higher than the WA and Australian rates during 2009-13 (PHIDU, 2016). It was the highest rate in the Perth South PHN (Figure 26). In 2011-13, the proportion of people who reported being in fair or poor health status was 14.5% in Cockburn. This was similar to the State and National averages (PHIDU, 2016).

Health Issues

Despite the high rate of avoidable mortality from suicide and self-inflicted harm, Cockburn had the second lowest rate of mental health and behavioural conditions (13.3%) in the Perth South PHN in 2011-13. In 2011, 13.5% of adults over 65 years of age live in the community with a profound and severe disability. This was among the highest rates in the Perth South PHN (PHIDU, 2016).

Risk Factors

The proportion of residents in Cockburn who were smokers (19.1%), consume alcohol at levels high risk to health (7.2%) or obese (29.7%) was significantly higher than the Australian averages in 2011-13 (PHIDU, 2016).

Social Determinants

The SEIFA score for Cockburn (1,035) was higher than the Australian average (1,000) in 2011, indicating less socio-economic disadvantage.

It is estimated 19,161 residents in Cockburn came from non-English speaking backgrounds in 2015; 380 Italian speakers, 380 Mandarin, 310 Portuguese, 250 Croatian, 180 Serbian, 120 Spanish and 120 Cantonese speakers had low English proficiency (ABS, 2015).

It is estimated that there were 234 homeless people in Cockburn in 2011. This is the fifth largest number in the Perth South PHN (ABS, 2011).

Cockburn has a dynamic and rapidly changing economic environment. The impact of employment transitions to the health and wellbeing of adults in Cockburn have been raised as a concern by community stakeholders.

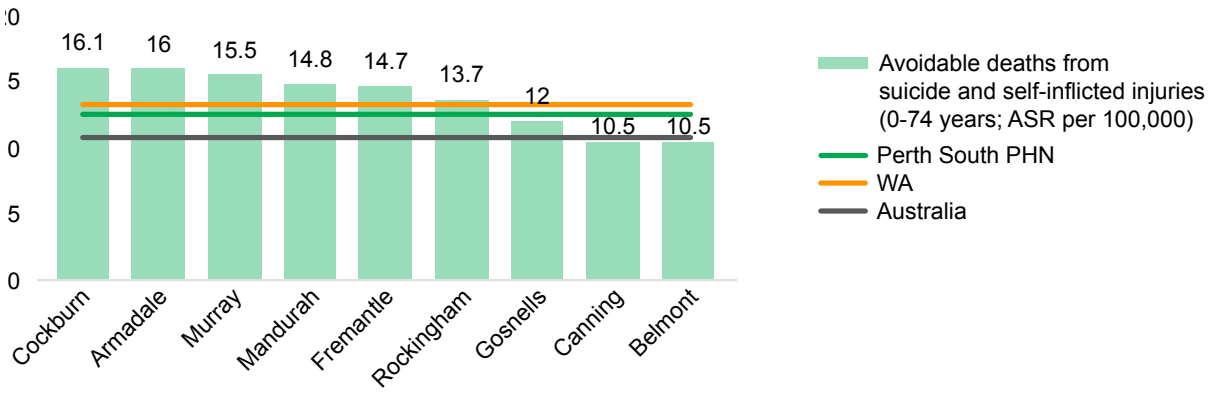


Figure 27. ASR of avoidable mortality from suicide and self-inflicted injuries, per 100,000, in Perth South PHN, 2009-13 (PHIDU, 2016).

Cockburn: service gaps

Service Issues

Mental health and wellbeing, and suicide prevention is the most apparent service need emerging in Cockburn.

High rates of older adults living in the community with profound or severe disability, and the significantly higher than National rates of health risk behaviours deserve attention.

Given the high proportion of people from non-English speaking backgrounds, there is a need to develop in-language services.

Potentially Preventable Hospitalisations

There were 2,122 PPHs in Cockburn during the 2013-14 financial year accounting for 10% of all PPHs in Perth South PHN. The average length of stay was 3.5 days (NHPA, 2015b).

The rate of PPHs in Cockburn (2,269 per 100,000 population) was similar to the Perth South PHN average (2,261). However, the rate of PPHs for dental, and kidney and urinary tract infections were higher than the Perth South PHN and Australian averages (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) and non-urgent (triage 5) ED presentations in Cockburn were substantially lower than the Australian utilisation. These represented 9,686 semi-urgent and 2,114 non-urgent ED presentations in the 2013-14 financial year, accounting for 8% of all semi-urgent and non-urgent presentations in the same year (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Cockburn is lower than WA, Australia and major cities and inner regional areas for GPs, nurses, pharmacists, dental professionals (including dentists, hygienists, therapists etc.), psychologists, podiatrists and physiotherapists (DoH, 2015b).

From 2013 to 2015, the number of registered clinicians across all disciplines experienced growth, except pharmacy and occupational therapy had remained unchanged (DoH, 2015b).

Identified needs and gaps in the regions:

1. High rates of health risk behaviours, including suicide and self-inflicted injuries.
2. Delayed presentation of kidney and urinary tract infection.
3. Health and wellbeing of individuals in transition.

Groups with specific needs:

- People from non-English speaking backgrounds.
- Older adults living with profound and severe disability.
- Adults in labour force during career transitions.

How can the system address health needs?

- Early intervention in suicide prevention.
- Prioritise improving HealthPathways uptake for kidney and urinary tract infections.
- Health Workforce support to deliver multidisciplinary team care for people with kidney and urinary tract infections, and older adults living with profound or severe disability.
- Build capacity to deliver in-language primary health services and health information delivery for people from non-English speaking backgrounds.

> *"Major barriers to accessing mainstream services are feelings of not being welcomed or included or not being familiar with the environment or it not being culturally welcoming."*
>
> *(Member of the Aboriginal community, Cockburn)*

Fremantle: health needs

Fremantle has a higher proportion of the population who are 70 years and over (11.3%) compared to the PHN average (9.8%). The location has significantly higher rates of avoidable death from circulatory system diseases and cancer. The prevalence of respiratory disease was also significantly higher than the WA and Australian averages in 2011-13.

Health Outcomes

The median age at death in Fremantle for males (80 years) and females (85 years) was similar to the State and National averages in 2009-13.

Fremantle had a significantly higher rate of avoidable death from circulatory system diseases than the Perth South PHN average in 2009-13, and the third highest avoidable mortality from cancer (second highest from breast cancer) in the Perth South PHN. This may be associated with higher proportion of residents who are over 70 years of age (PHIDU, 2016).

Health Issues

Fremantle had a significantly higher estimated prevalence of respiratory system disease (32.9%) than the Australian average (28.7%) in 2009-13 (PHIDU, 2016).

The proportion of fully immunised children aged 1 year (88%) and 2 years (85%) were both the second lowest in the Perth South PHN. This is compared to the WA and Australian average at 1 year (92.3%) and 2 years (89.3%) in 2015 (PHIDU, 2016).

In 2011, 13.9% of adults over 65 years of age living in the community with a profound and severe disability. This was the highest rate in the Perth South PHN (PHIDU, 2016).

Risk Factors

17% of the population in Fremantle were current smokers in 2011-13, which was lower than the PHN average (19.2%). The proportion of the population who were obese (24.7%) was also lower than the PHN average (28.5%).

Similar to other regions in WA, the proportion of the population who consumed alcohol at levels considered to be high risk to health (7.3%) was significantly higher than Australian average (4.7%) in 2009-13 (PHIDU, 2016).

Breast cancer screening for females (50-74 years) in Fremantle SA3 (54.1%) was similar to the WA average (55.2%) in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score in Fremantle (1,009) was close to the Australian average (1,000) in September 2014 and the unemployment rate was 7.64%. Close to 21% of the households had no internet connection in 2011 (PHIDU, 2016).

In the 2011 census, 383 people were reported as homeless in Fremantle, which was the second largest number in the Perth South PHN (ABS, 2011). In a 2016 survey, 106 homeless people were found in Fremantle, and majority were male. Among them, 5 families with a total of 15 children were found to be homeless. Three of the families had been victims of domestic violence, and the youngest child was one year old. The average time of homelessness in this group was 3 years and 7 months (RUAH, 2016).

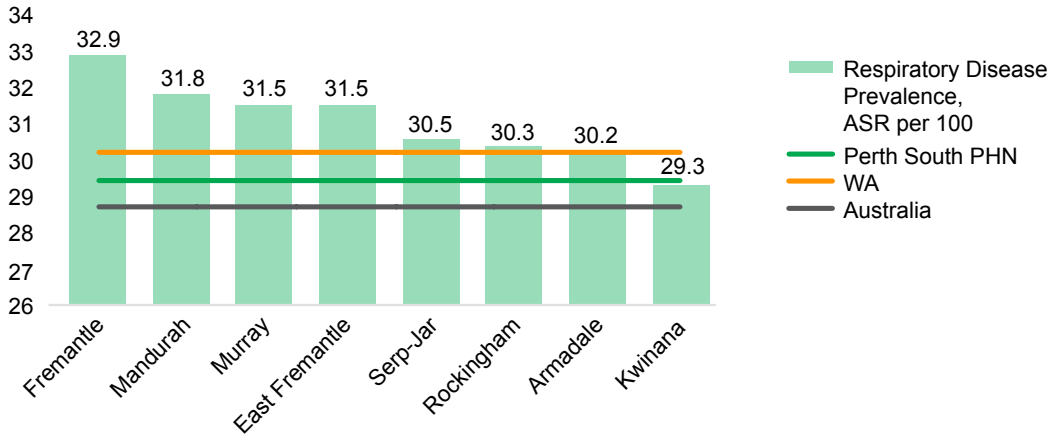


Figure 28. ASR of the highest estimated prevalence of population with respiratory system diseases, per 100 population, in Perth South PHN by LGA, 2011-13 (PHIDU, 2016).

Fremantle: service gaps

Service Issues

The main service issue in Fremantle is associated with an ageing population and available evidence paints a picture of delayed undiagnosed and/or delayed presentation of cardiovascular disease and cancer.

The significantly higher prevalence of respiratory conditions not accompanied by high COPD PPHs or avoidable mortality from respiratory conditions may signal effective primary care. It may also be due to factors not observable from the data sets sourced.

Other service considerations are homelessness, and older adults living with a profound or severe disability.

Potentially Preventable Hospitalisations

There were 922 PPHs in the Fremantle SA3 (including East Fremantle) during the 2013-14 financial year, and the average length of stay of 4.2 days (NHPA, 2015b).

The PPH rate in Fremantle SA3 was slightly lower than the Perth South PHN average. PPHs due to chronic conditions in Fremantle were lower than the Perth South PHN and Australian rates, while the rate of PPHs due to acute conditions was higher in this location (238 per 100,000 population) than the Perth South PHN (175) rate, primarily due to cellulitis (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) ED utilisation was higher than the Australian average, while urgent (triage 5) ED utilisation was lower. These represented 4,093 semi-urgent and 1,165 non-urgent ED presentations in the 2013-14 financial year, accounting for 4% of all semi-urgent and non-urgent presentations in the same year (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Fremantle was higher than WA, Australia, major cities and inner regional areas in 2013-15 for all disciplines. This includes GPs, nurses, pharmacists, dental professionals (including dentists, hygienists, therapists etc.), psychologists, podiatrists, physiotherapists and occupational therapists (DoH, 2015b).

Declining trends in the number of GPs, nurses, dentists and occupational therapists from 2013-15 is deserving of attention as demand for service is expected to increase as the population continues to age (DoH, 2015b).

> *"The diabetic educator used to be just down the road. So we have tried to come up with a list, the nurses have tried to come up with a list of services the patients can access closer. It is very hard to access the hospital diabetes clinic because the wait list to get in there is very hard and very long. So that has been difficult."*
>
> *(GP, Fremantle)*

Identified needs and gaps in the location:

1. Improve childhood immunisation (Imm).
2. Improve cancer screening (Scr) rates (breast, and colorectal cancer in males).
3. Primary health care for people living with cancer, circulatory (CVD) and respiratory system (CRC) conditions, have profound or severe disability.
4. Undiagnosed / delayed presentation:
   - Circulatory system conditions.
   - Cancer (breast cancer, and likely colorectal cancer in males).

Groups with specific needs:

- children, family and individuals who are homeless—may be experiencing interpersonal violence.
- people over 70 years of age.
- People living with disability.

	Imm	Scr	MH	DM	CRC	CVD	Cancer
Early detection						•	•
Timely management			•	•	•	•	•
Self-management	•	•	•	•	•	•	•
Team care			•	•	•	•	•
HealthPathways			•	•	•	•	•

How can the system address health needs?

- Early detection and follow through to early intervention to reduce avoidable mortality - circulatory system diseases (CVD), breast cancer, and colorectal cancer in males.
- Prioritise the improvement of up-take of HealthPathways for diabetes / cellulitis, CVD, and cancer.
- Supported self-management for:
  - Parents of young children on childhood immunisation.
  - People living with chronic respiratory conditions, mental health conditions, diabetes and circulatory diseases.
  - Older adults living with profound or severe disability.
- Health Workforce support to deliver multidisciplinary team care for people with complex multi-morbidities (CRC, DM, MH, CVD, cancer).
- Consider the needs of homeless people.

Gosnells: health needs

Of the Perth South PHN population, 13% live in Gosnells. This LGA is where the highest number of Aboriginal people in Perth South PHN (3,626 people) live. Gosnells also has the fourth highest proportion (22.2%) and second highest numbers (27,761) of people born in predominantly non-English speaking countries in the PHN.

Diabetes, circulatory system conditions, poor mental health, smoking and risky alcohol consumption appear to be the main health concerns in Gosnells.

Health Outcomes

The median age at death for males in Gosnells (73 years) was the second lowest in the Perth South PHN, and considerably lower than the Perth South PHN (77 years), WA (76 years), and Australian (78 years) averages in 2009-13. The median age at death for females (81 years) was lower than the Perth South PHN (84 years), State (83 years), and National (81 years) averages (PHIDU, 2016).

Gosnells had among the highest avoidable mortality from circulatory system disease and diabetes in Perth South PHN (PHIDU, 2016).

15% of adults in Gosnells reported fair or poor self-assessed health status in 2011-13. This was similar to the State and National averages (PHIDU, 2016).

Health Issues

The prevalence of diabetes in Gosnells (6.2%) was higher than the Perth South PHN (5.6%), WA (5.5%) and National (5.4%) averages. The prevalence of mental health and behaviour conditions (14.1%) was higher than the Australian average (13.6%), coinciding with the third highest rates of adults reporting high or very high psychological distress (11.6%) (PHIDU, 2016).

Risk Factors

During 2011-2013, Gosnells had a significantly higher rates of smoking (20.4%), obesity (30%) and alcohol consumption at levels considered to be high risk to health (7.4%) than the Australian averages.

The cervical cancer screening rate in Gosnells SA3 (49.9%) was one of the lowest in Perth South PHN, and was considerably lower than the WA average (55.7%) (AIHW, 2016c).

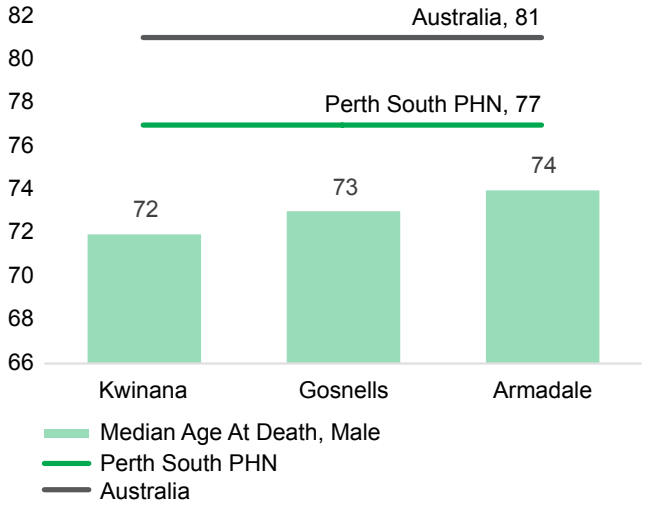


Figure 29. Lowest median age at death for males in Perth South PHN by LGA, 2009-13 (PHIDU, 2016).

Social Determinants

The SEIFA score in Gosnells (1,004) was similar to the Australian average (1,000) in 2011. Nonetheless, Gosnells had the second highest proportion of Health Care Card holders (7%) in 2014 (PHIDU, 2016). The September 2014 unemployment rate in Gosnells was 6.61%, higher than the WA (4.92%), and Australian (5.97%) averages (PHIDU, 2016).

28% of children were developmentally vulnerable on one or more domains in 2012. This was considerably higher than the WA (23%) and Australian (22%) averages. This was the second highest rate in Perth South PHN.

It is estimated that 27,761 Gosnells residents were born in predominantly non-English speaking countries in 2015; 900 Mandarin speakers, 360 Cantonese, 203 Malay/ Indonesian, 284 Arabic, 232 Karen and 176 Burmese speakers had low English proficiencies (ABS, 2015).

There were an estimated 417 homeless people in Gosnells in 2011. This is the largest number in the Perth South PHN (ABS, 2011).

Gosnells: service gaps

Service Issues

Primary health care services in Gosnells need to be culturally secure services to meet the needs of Aboriginal residents and people from non-English speaking backgrounds, and cognisant of the implications of homelessness.

The prevalence of circulatory system conditions is similar to the State and National averages. The high avoidable mortality from circulatory system diseases and high PPHs due to congestive heart failure may be an indication of high levels of undiagnosed circulatory system diseases.

The high prevalence and avoidable mortality from diabetes, and high rate of PPH due to diabetes complications points to a need for better management.

Potentially Preventable Hospitalisations

There were 2,476 PPHs in Gosnells during the 2013-14 financial year, and the average length of stay was 3.6 days. Among these, 1,121 were due to chronic conditions and 1,368 were due to acute and vaccine preventable conditions (NHPA, 2015b).

The rate of PPHs in Gosnells was similar to the Perth South PHN. PPHs rates due to chronic conditions in Gosnells were higher than the Perth South PHN average but lower than Australian rates, mainly as a result of high rate of PPHs due to congestive heart failure, diabetes complications and iron deficiency anaemia (NHPA, 2015b). This paints a picture consistent to the chronic condition profile in Gosnells.

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) and non-urgent (triage 5) ED utilisation in 2013-14 were both lower than the Australian average (100). These represented 14,636 semi-urgent and 2,219 non-urgent ED presentations in the 2013-14 financial year, accounting for over 12% of all semi-urgent and non-urgent presentations in the same year (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Gosnells was lower than WA, Australia and all major cities and inner regional areas in 2013-15 for GP, nurses, pharmacists, dental professionals (including dentists, hygienists, therapists etc.), psychologists, podiatrists, physiotherapists and occupational therapists (DoH, 2015b).

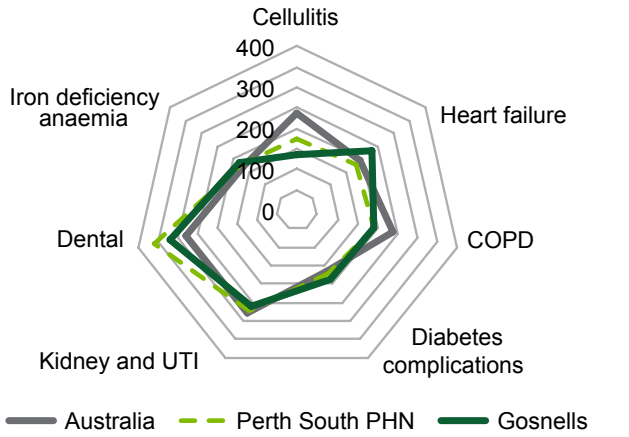


Figure 30. Leading causes of PPHs, hospitalisations per 100,000 population, in Gosnells SA3, 2013-14 (NHPA, 2015b).

> *"People can feel isolated as {alcohol and other drug issues} are not talked about in their community."*
>
> *(CALD community member at an AOD forum, Gosnells)*

Identified needs and gaps in the location:

1. Reduce rate of health risk behaviours—smoking, risky alcohol consumption, and obesity (Risks).
2. Undiagnosed or delayed presentations of circulatory system diseases (CVD).
3. Timely management of diabetes (DM) and its complications, and cardiovascular diseases (CVD)
4. Appropriate care for people living with mental health condition or in psychological distress (MH).
5. Risk of inadequate workforce supply to meet the demand of higher than average prevalence of chronic conditions (including mental health conditions, circulatory system conditions, and diabetes).

Groups with specific needs:

- people who are socio-economically disadvantaged.
- Aboriginal and Torres Strait Islander people.
- people from non-English speaking backgrounds.
- children who are developmentally vulnerable.

	Risks	MH	DM	CVD
Early detection				•
Timely management		•	•	•
Self-management	•	•	•	•
Team care		•	•	•
HealthPathways		•	•	•

How can the system address health needs?

- Early detection of circulatory system diseases
- Prioritise the improvement of up-take of HealthPathways for diabetes, mental health conditions and circulatory system conditions.
- Supported self-management for
  - people living with mental health conditions, diabetes and circulatory system conditions.
  - people who wish to adopt a healthier lifestyle.
- Health workforce support to deliver multidisciplinary team care for people living with complex multi-morbidities.
- Integrated team care to support Aboriginal people with chronic disease and promote culturally secure primary care services.
- Build capacity to deliver in-language services and health information to people from non-English speaking backgrounds.
- Consider the needs of homeless people.

Kwinana: health needs

The proportion of Kwinana residents who identify as Aboriginal (4.5%) was higher than the Australian average in 2011. Kwinana is a location of high health need and poorer self-assessed health status. The rates of smoking, risky alcohol consumption, avoidable deaths from cancer and chronic conditions were among the highest in Perth South PHN. However, the rate of avoidable deaths from intentional self-harm was lower.

Health Outcomes

Kwinana had the lowest median age at death for males (72 years) in Perth South PHN, and the second lowest for females (78 years). This may be related to the higher than Perth South PHN and WA rates of avoidable mortality from cancer (particularly colorectal cancer), diabetes and respiratory system diseases (particularly COPD). The rate of avoidable mortality from suicide and self-inflicted injuries in Kwinana (9.7 per 100,000) was one of the lowest in the PHN and considerably lower than the WA average (13.3) (PHIDU, 2016).

The proportion of Kwinana residents self-reported to have fair or poor self-assessed health status (17.4%) was significantly higher than the WA and Australian averages in 2011-13 (PHIDU, 2016).

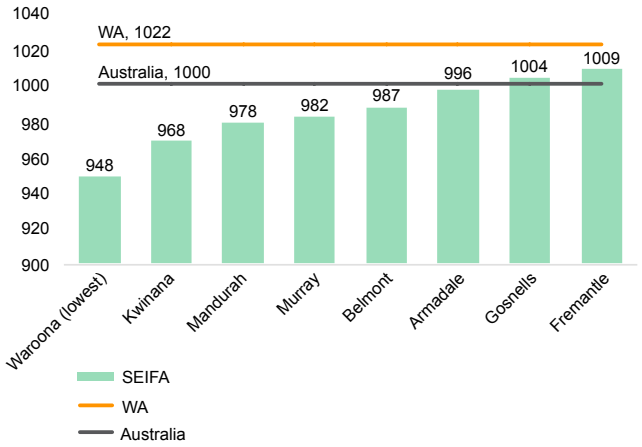


Figure 31. Lowest SEIFA scores in Perth South PHN by LGA, 2011 (PHIDU, 2016).

Health Issues

The prevalence of circulatory system disease (17.9%) and diabetes (6.3%) was higher than the WA and Australian averages during the same period (PHIDU, 2016).

Risk Factors

Kwinana had a significantly higher proportion of people in the Perth South PHN who engaged in health risk behaviours compared to both the WA and Australian averages. 26% of people over 18 years were smokers and 33% were obese, 7.9% consumed alcohol at levels considered to be a high risk to health. All were significantly higher than the Australian average (PHIDU, 2016).

Breast cancer screening for women (50-74 years) in Kwinana was among the lowest in the PHN (50.0%), and was lower than the WA average (55.2%) in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score in Kwinana (968) was the second lowest within Perth South PHN and lower than the Australian average (1,000) in 2011, indicating relative socio-economic disadvantage (PHIDU, 2016).

22% of children were developmentally vulnerable on one or more domains, which was higher than the WA average (23%). The proportion of children who were developmentally vulnerable on two or more domains (17.7%) was also higher than the WA average (11.2%). These rates were the highest among Perth South PHN LGAs in 2012 (PHIDU, 2016).

It was estimated that 42.4% of high school students left school at year 10 or below (WA average 32.8%) in 2011, and full-time participation in secondary school education at age 16 years in Kwinana (60.9%) was the lowest in Perth South PHN and below the Australian average (79.1%) in 2011. School leaver participation in higher education in Kwinana (12.7%) was substantially lower than the WA average of 28.2% in 2013 (PHIDU, 2016).

In the September 2014 quarter, Kwinana had the highest unemployment rate in the Perth South PHN (10.6%; Australian average 5.97%). 37% of low income households in 2011 was under financial stress from mortgage or rent (Australian average 31.7%), highest in the PHN, while proportion of households receiving rent assistance from the Government (20.6%) was the second highest (PHIDU, 2016).

In 2011, over a quarter (26%) of the families with children 15 years old or younger in Kwinana were single parent families. It was reported in June 2014 that 28% of children under 16 years of age live in low income, welfare dependent families (PHIDU, 2016).

Kwinana: service gaps

Service Issues

The major service issue in Kwinana appears to be early intervention for deteriorating health conditions, health literacy and supported self-management of chronic conditions for some of the most socio-economically disadvantaged population groups in Perth South PHN.

Evidence of delayed presentation and intervention is indicated by highest relative utilisation of semi-urgent ED presentations and highest rates of PPHs across multiple conditions.

Potentially Preventable Hospitalisations

There were 889 PPHs in Kwinana in 2013-14, and the average length of stay was 3.5 days. The rate of PPHs in Kwinana (2,898 per 100,000 population) was the highest in Perth South PHN (Perth South PHN average was 2,261 per 100,000 population). This is in contrast to the Australian rate (2,436) and Melville (1,926) which was the lowest LGA in the PHN.

Kwinana also has the highest PPH rates among LGAs in Perth North PHN due to diabetes complications, congestive heart failure, iron deficiency anaemia, and kidney and urinary tract infections (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) ED presentations is higher (RU=138) than the Australian average (100), while non-urgent (triage 5) presentation was lower (RU=67). This represented 5,963 semi-urgent and 615 non-urgent ED presentations in the 2013-14 financial year (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Kwinana is lower than the State and National averages, also lower than all major cities and inner regional locations in Australia for GPs, nurses, pharmacists, dental professionals (including dentists, hygienists, therapists etc.), psychologists, podiatrists, and physiotherapists. This is accompanied by a limited increase or fluctuations in the number of nurses, psychologists and physiotherapists (DoH, 2015b).

In 2013 and 2014, there were no occupational therapists registered to practice in Kwinana (DoH, 2015b); however, qualitative evidence indicates the presence of occupational therapists through mobile services.

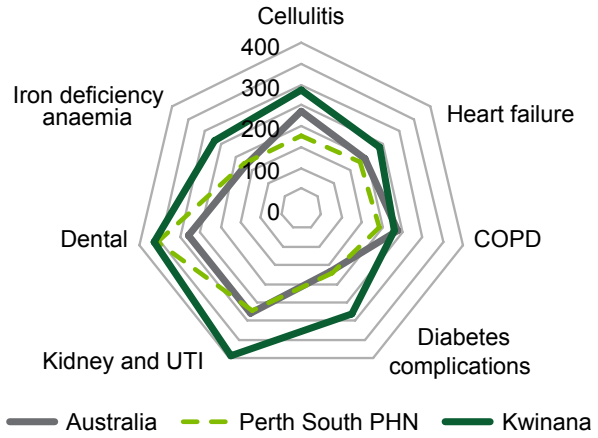


Figure 32. Leading causes of PPHs, hospitalisations per 100,000 population, in Kwinana SA3, 2013-14 (NHPA, 2015b).

Identified needs and gaps in the location:

1. Reduce percentage of the population that engages in health risk behaviours.
2. Primary health care for people living with diabetes, circulatory diseases, respiratory conditions and cancer.
3. Early detection and timely management of:
   - Colorectal cancer in both genders.
   - Acute infections (cellulitis, kidney and urinary tract infections).
4. Risk of inadequate workforce supply to meet high level of health needs.

Groups with specific needs:

- People who are socio-economically disadvantaged.
- Aboriginal and Torres Strait Islander people.
- Children who are developmentally vulnerable.

Service Gaps/ Needs	Risks	DM	CVD	CRC	Cancer	Infections
Early detection					•	
Timely management		•	•	•	•	•
Self-management	•	•	•	•	•	•
Team care		•	•	•	•	•
Healthpathways		•	•	•	•	•

How can the system address health needs?

- Early detection of colorectal cancer by increasing screening rates and following through to early intervention to reduce avoidable mortality.
- Prioritise the improvement in up-take of HealthPathways for diabetes, circulatory and respiratory system diseases and cancer
- Supported self-management for people living with diabetes, circulatory and respiratory system diseases, cancer and multi-morbidities focusing on reducing health risk behaviours.
- Health workforce support to deliver multidisciplinary team care for people with chronic conditions, particularly diabetes, circulatory disease, cancer and primary health intervention of acute infections.
- Integrated team care to support Aboriginal people with chronic disease and promote culturally secure primary care services.

Peel Mandurah: health needs

Mandurah has the highest proportion of population aged 70 years and over in the Perth South PHN. It is a location of relative disadvantage with significantly higher chronic disease prevalence than the National average, poor mental health and wellbeing, early childhood development issues and disability have been highlighted as health issues concerning residents in Mandurah.

Health Outcomes

The median age at death in Mandurah for males (79 years) was higher than the Perth South PHN average (77 years), and for females (84 years) was the same as the PHN average (PHIDU, 2016). Mandurah had a significantly higher proportion of the population self-reported to be in fair or poor health (16%) than the Perth South PHN and WA averages in 2011-13 (PHIDU, 2016).

Health Issues

The prevalence of a number of chronic conditions in Mandurah was significantly higher than the Perth South PHN, WA and/or Australian averages in 2009-13, including circulatory (17.8%), respiratory (31.8%) and musculoskeletal diseases (30.7%) conditions.

The prevalence of mental health and behaviour conditions (16.3%) and people in high or very high psychological distress (13.3%) were both higher than the PHN, State and National averages (PHIDU, 2016).

10% of adults aged over 65 years lives in the community with a profound or severe disability, while higher than State and National average proportion (2.8%) of residents under 65 years of age live in the community with a profound or sever disability (PHIDU, 2016).

Risk Factors

The rate of smoking (24.3%), overweight (but not obese) (36.2%), obese (31.8%), or high risk alcohol consumption (7.7%) were all significantly higher than the Australian rates in 2011-13 (PHIDU, 2016).

Breast cancer screening for females (50-74 years) in Mandurah SA3 (48.6%) was the second lowest in Perth South PHN in 2014-15, and was considerably lower than the WA average (55.2%) (AIHW, 2016c).

Social Determinants

The SEIFA score for Mandurah (978) was lower than the Australian average (1,000) in 2011, and the third lowest in Perth South PHN indicating relative disadvantage (PHIDU, 2016).

The unemployment rate in Mandurah (7.9%) was the second highest in the PHN in September 2014. During the same year, one in four households were receiving rent assistance from the Australian Government, which was the highest in Perth South PHN (PHIDU, 2016).

27% of children were developmentally vulnerable on one or more domains, which was higher than the WA (23%) and National (22%) averages. The proportion of children who were developmentally vulnerable on two or more domains (13.6%) was also higher than the WA (11.2%) and Australian averages(10.8%) (PHIDU, 2016).

In 2011, more than one in four (27.7%) families in Mandurah with children 15 years old or younger were single parented. This was the highest rate in the PHN (PHIDU, 2016).

It was estimated that there were 208 homeless people in Mandurah in 2011, one of the larger numbers estimated for SA3 in the Perth South PHN (ABS, 2011).

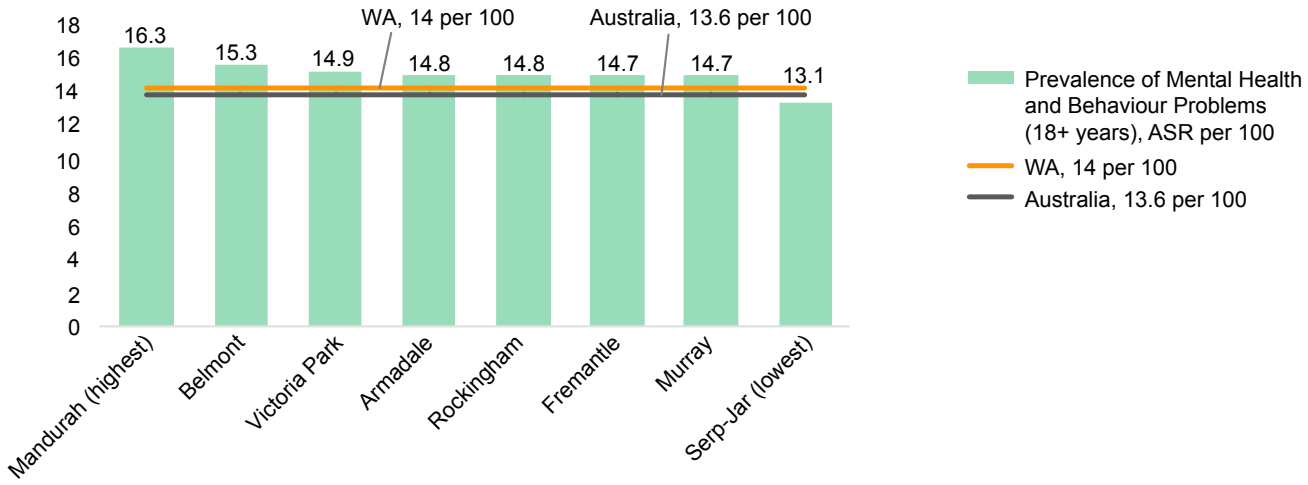


Figure 33. ASR of the highest prevalence of mental health and behavioural conditions in adults (18+ years), per 100, in Perth South by LGA, 2011-13 (PHIDU, 2016).

Peel Mandurah: service gaps

Service Issues

Data and feedback has identified the following service issues in the Mandurah region:

1. Priority population groups: older adults, people living with profound disability, people who are socio-economically disadvantaged.
2. Priority conditions: multiple chronic conditions including diabetes, circulatory, respiratory system conditions, mental health and wellbeing, musculoskeletal system conditions, acute infections.
3. Service delivery issues: undiagnosed and/or delayed presentation of diabetes, timely primary health management of chronic respiratory conditions at the point of exacerbations, primary health management of acute infections (cellulitis, UTI).
4. Supported self-management for those who wish to adopt a healthier lifestyle.

Potentially Preventable Hospitalisations*

There were 2,925 PPHs in the Mandurah SA3 (Mandurah and Murray LGAs combined) during the 2013-14 financial year, equalling 10% of all PPHs for that year, with an average length of stay of 3.6 days (NHPA, 2015b). Mandurah had higher PPH rates than Perth South PHN and the Australian averages mainly due to the rates of PPHs from COPD, diabetes, cellulitis, and kidney and urinary tract infections, which were all higher in the locations than the Perth South PHN and Australian rates (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

Mandurah and Murray had the highest relative utilisation of semi-urgent (triage 4) (RU=189) and non-urgent (triage 5) (RU=130) presentations in the Perth South PHN, which were higher than the Australian average (RU=100). This represented 22,198 semi-urgent and 3,213 non-urgent ED presentations in 2013-14 financial year, over 18% of all semi and non-urgent ED presentations in the Perth South PHN (DoH, 2016a).

* Please refer to data limitations on page 53

Primary Care Workforce

The registered clinician to population ratio in Mandurah is lower than WA, Australia and all major cities and inner regional areas for GPs, pharmacists, psychologists, podiatrists, physiotherapists and occupational therapists (DoH, 2015b). The declining trend in the number of GPs from 2013 to 2015 deserves urgent attention to meet the needs of an ageing population (DoH, 2015b).

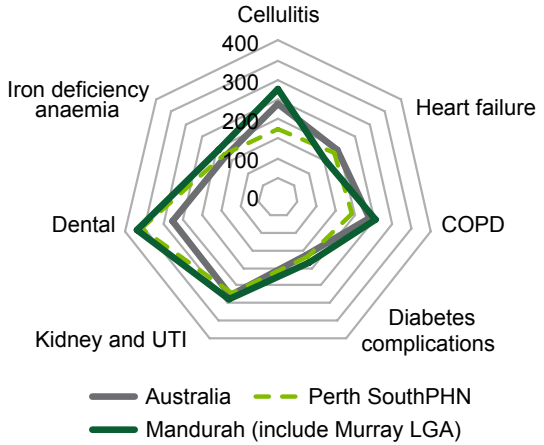


Figure 34. Leading causes of PPHs, hospitalisations per 100,000 population, in Mandurah SA3, 2013-14 (NHPA, 2015b).

Identified needs and gaps in the location:

5. High rates of health risk behaviours.
6. Primary health care for people living with multiple chronic conditions including mental health conditions.
7. Early detection and timely management of:
   - COPD and its exacerbations
   - diabetes complications and iron deficiency anaemia
   - acute infections (cellulitis, kidney and urinary tract infections).
8. Risk of inadequate workforce supply to meet the high level of health needs.

Groups with specific needs:

- People who are socio-economically disadvantaged / homeless
- Older adults
- People living with profound /severe disability.

Service Gaps/ Needs	Risks	MH	DM	CVD	CRC	MSK	AI
Early detection			•				•
Timely management			•		•		•
Self-management	•		•	•	•	•	•
Team care		•	•	•	•	•	•
HealthPathways		•	•		•	•	

How can the system address health needs?

- Early detection and timely management of diabetes (DM) and acute infections (AI).
- Prioritise the improvement in up-take of HealthPathways for diabetes, chronic respiratory conditions (CRC), musculoskeletal conditions (MSK), mental health conditions (MH).
- Supporting self-management for people:
  - living with multiple chronic conditions
  - with acute infections (cellulitis, kidney and urinary tract (UTI))
  - who wish to adopt a healthier lifestyle
  - who are older (70 years+ and people living with disability).
- Health workforce support to deliver multidisciplinary team care for people with chronic conditions, particularly mental health and respiratory conditions.
- Consider the needs of homeless people.

Peel Murray: health needs

It is estimated that 13% of the population who lives in Murray is aged 70 years and over — this is the second highest proportion in the PHN. It is a LGA with relative socio-economic disadvantage, with a higher proportion of people participating in health risk behaviours, and poorer health outcomes. Key health concerns are suicide and self-inflicted injuries, circulatory, respiratory and musculoskeletal diseases.

Health Outcomes

The median age at death in Murray for males (75 years) and females (75 years) were lower than the Perth South PHN averages for males (77 years) and females (84 years). Females in Murray had the lowest median age at death in the PHN. In 2009-13.

Murray had one of the highest rates of avoidable death from colorectal cancer, and suicide and self-inflicted injuries (PHIDU, 2016).

A significantly higher proportion of the population in Murray self-reported to be in fair or poor health (17.2%) in 2011-13. This is higher than both the Perth South PHN, WA and National averages (PHIDU, 2016).

Health Issues

Murray had one of the highest prevalence of chronic conditions in the Perth South PHN in 2011-13, including significantly higher prevalence of circulatory system diseases (19.2%) and musculoskeletal system diseases (31.7%). This area also had the third highest respiratory system disease rate (31.5%) in the PHN (PHIDU, 2016).

Risk Factors

Murray had among the highest rates of smoking (24.5%), obesity (35.6%), and risky alcohol consumption (7.8%). All were significantly higher than the WA and Australian averages during 2011-13. 37.7% of the population in Murray were overweight but not obese (PHIDU, 2016). (Refer to Figure 34 for obesity prevalence).

Social Determinants

The SEIFA score for Murray (982) was below the Australian average (1,000) in 2011, indicating relative socio-economic disadvantage. 21% of the households in Murray did not have internet connection. The unemployment rate in Murray was 7.2%, higher than the State and National averages in September 2014 (PHIDU, 2016).

In 2011, the proportion of people who left school at year 10 or below in Murray (42.3 per 100 people) was the second highest in the PHN, and was higher than the Australian average (34.3) (PHIDU, 2016).

Murray had the lowest proportion of low income households under financial stress from mortgage or rent (24.1%) in 2011. In 2014, 19.6% of households in Murray were receiving rent assistance from the Australian Government. This was the third highest in the PHN (PHIDU, 2016).

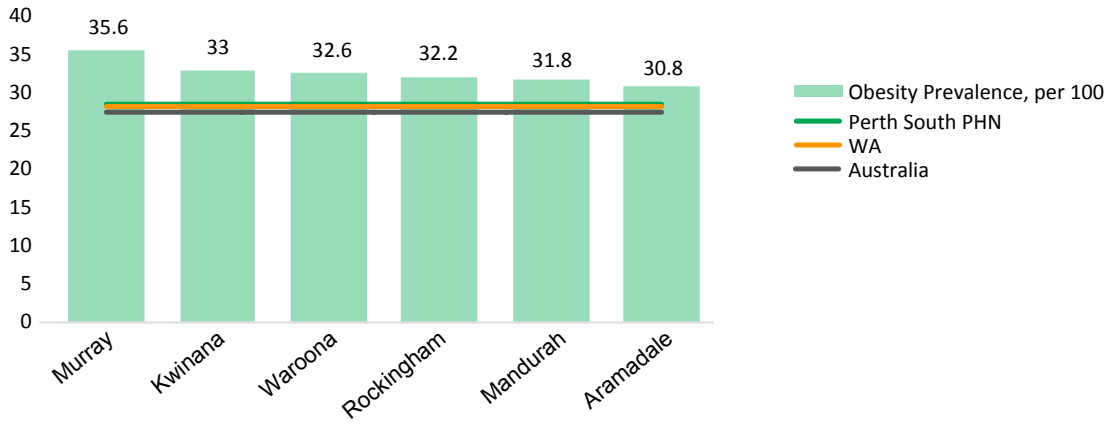


Figure 35. Highest prevalence of obesity in adult residents (18+ years), per 100 population, in Perth South PHN by LGA, 2011-13 (PHIDU, 2016).

Peel Murray: service gaps

Service Issues

Affordable services tailored to the needs of the ageing population with high prevalence of chronic comorbid conditions. Suicide prevention also presents as a health service need in the Murray LGA.

Potentially Preventable Hospitalisations*

There were 2,925 PPHs in the Mandurah SA3 (Mandurah and Murray LGAs combined) during the 2013-14 financial year, equalling 10% of all PPHs for that year, with an average length of stay of 3.6 days (NHPA, 2015b).

Mandurah had higher PPH rates than Perth South PHN and the Australian averages mainly due to the rates of PPHs from COPD, diabetes, cellulitis, and kidney and urinary tract infections, which were all higher in the locations than the Perth South PHN and Australian rates (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

Mandurah and Murray had the highest relative utilisation of semi-urgent (triage 4) (RU=189) and non-urgent (triage 5) (RU=130) presentations in the Perth South PHN, which were higher than the Australian average (RU=100). This represented 22,198 semi-urgent and 3,213 non-urgent ED presentations in 2013-14 financial year, over 18% of all semi and non-urgent ED presentations in the Perth South PHN (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Murray was lower than WA, Australia and all major cities and inner regional areas for GPs, nurses, pharmacists, dental professionals (including dentists, hygienists and therapists etc.), psychologists, podiatrists, physiotherapists and occupational therapists (DoH, 2015b).

There was a declining trend in the number of GP and nurses registered to practice in this LGA from 2013 to 2015 (DoH, 2015b).

> *"We need to have the people to refer them to, and we need to know what services they are providing to best assist patients, and where to direct them to go. Sending them to someone where we don't know what they do, then that's not going to be very helpful for the patients. They are going to say that wasn't what I needed. So we need to be aware of the whole big picture for them."*
>
> *(GP, Peel Murray)*

Identified needs and gaps in the location:

1. High rates of health risk behaviours including suicide and self-inflicting injuries.
2. Primary health care for people living with multiple chronic conditions—circulatory disease (CVD), chronic respiratory conditions (CRC), musculoskeletal conditions (MSK)
3. Early detection and timely management of:
   - COPD and its exacerbations
   - Diabetes complications and iron deficiency anaemia
   - Acute infections (cellulitis, kidney and urinary tract infections).
4. Risk of inadequate workforce supply to meet the high level of health needs.

Groups with specific needs:

- People who are socio-economically disadvantaged / homeless
- Older adults.

Service Gaps/ Needs	Risks	Sui	DM	CVD	CRC	MSK	AI
Early detection			•				•
Timely management		•	•		•		•
Self-management	•	•	•	•	•	•	•
Team care			•	•	•	•	•
HealthPathways			•		•	•	

How can the system address health needs?

- Early detection and timely management of diabetes (DM) and acute infections (AI).
- Early intervention in suicide (sui) prevention.
- Prioritise the improvement in up-take of HealthPathways for diabetes, chronic respiratory conditions (CRC), musculoskeletal conditions (MSK).
- Supported self-management for people:
  - living with multiple chronic conditions
  - with acute infections (cellulitis, kidney and UTI)
  - identify as having risk of suicide
  - who wish to adopt a healthier lifestyle
  - who are older (70 years+ and people living with disability).
- Health workforce support to deliver multidisciplinary team care for people with chronic conditions, particularly circulatory, respiratory and musculoskeletal conditions.

* Please refer to data limitations on page 53

Rockingham: health needs

Rockingham is home to 13% of the total Perth South PHN population, and it is also where 11% of the Aboriginal people (2,321) in the PHN live. Rockingham is a locality of less relative disadvantage, but 99,227 people living with at least one chronic condition during 2011-13— the largest number in Perth South PHN. A third of all households were under financial stress, and a low proportion of school leavers attended higher education.

Health Outcomes

The median age at death in Rockingham for males (76 years) and females (81 years) was lower than the Perth South PHN average for males (77 years) and females (84 years) in 2009-13 (PHIDU, 2016).

Health Issues

The prevalence of musculoskeletal system diseases in Rockingham (30.9%) was significantly higher than the Australian average in 2011-13.

Risk Factors

Rockingham had significantly higher than State and National average rates of smoking in males (23.7%) and obesity (32.2%) in 2011-13. The rate of high risk alcohol consumption (7.3%) was also significantly higher than the Australian average (PHIDU, 2016).

Cervical cancer screening for females (20-69 years) in Rockingham (50.1%) was lower than the WA average (55.7%) in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score for Rockingham (1,012) was higher than the Australian average (1,000) in 2011, indicating less socio-economic disadvantage (PHIDU, 2016). However, a third (33.2%) of the low income households in Rockingham were under financial stress from mortgage or rent, which was higher than the WA average.

Over a quarter (25.9%) of the children were developmentally vulnerable in one or more domains, and 13.3% were vulnerable on two or more domains. Both were higher than the WA average in 2012 (PHIDU, 2016). Close to a fifth (17.6%) of school leavers in Rockingham participated in higher education in 2012. This was the second lowest participation in Perth South PHN and was substantially lower than the Australian average (31.3%) (PHIDU, 2016).

Rockingham had one of the lowest proportion of households without internet connection (16.5%) in 2011, placing it among the most cyber-connected LGAs in the Perth South PHN (PHIDU, 2016). Unemployment rate was 6.77% in Rockingham for the September 2014 quarter, this was compared to the WA average of 4.92% and Australian average of 5.97% during the same period (PHIDU, 2016).

It was estimated that there were 222 homeless people in Rockingham in 2011, one of the larger numbers estimated for SA3 in the Perth South PHN (ABS, 2011).

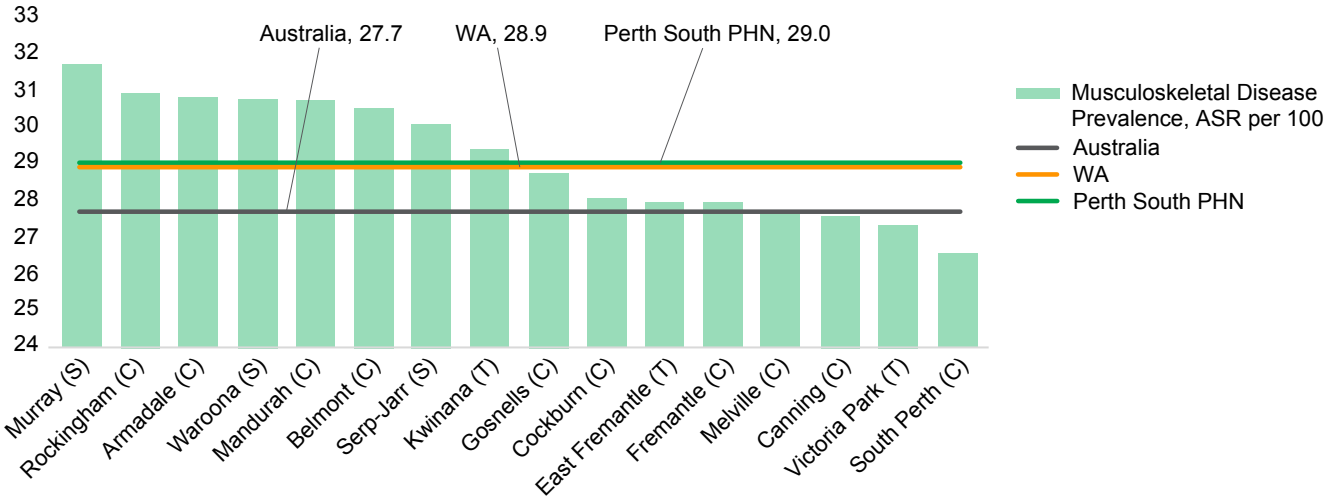


Figure 36. ASR of the highest prevalence of musculoskeletal disease, per 100 population, in Perth South PHN by LGA, 2011-13 (PHIDU, 2016).

Rockingham: service gaps

Service Issues

The key service issue in Rockingham is the high volume of PPHs and semi and non-urgent ED presentations. The higher rate of PPH due to COPD and diabetes complications was not reflected in the respective prevalence rates pointing to the possibility of undiagnosed or delayed presentation of these conditions. The higher than Australian average of semi-urgent ED utilisations may be a reflection of the above trend.

Potentially Preventable Hospitalisations

There were 2,720 PPHs in Rockingham during the 2013-14 financial year, equalling 13% of all PPHs in the Perth South PHN for that year. The average length of stay was 3.4 days (NHPA, 2015b).

The rate of PPHs in Rockingham (2,323 PPHs per 100,000 population) was similar to the Perth South PHN average. Rockingham had a higher rate of chronic conditions PPHs and lower rate of acute PPHs than the Perth South PHN. These are mainly due to higher than Perth South PHN, and Australian rates of PPHs resulting from COPD and diabetes complications (NHPA, 2015b). The similar to Perth South PHN average prevalence of both conditions points to a possibility of undiagnosed or delayed presentation of these conditions.

Semi and Non-Urgent ED Presentations

Rockingham had higher semi-urgent (triage 4) ED utilisation than the Australian average, while the relative score for non-urgent (triage 5) ED utilisation was well below the Australian average. These represented 20,655 semi-urgent and 1,989 non-urgent ED presentations in the 2013-14 financial year, equalling over 16% of all semi and non-urgent ED presentations in the Perth South PHN (DoH, 2016a).

In April/May 2016, the GP after hours which was operating from the hospital ceased to open. Residents of Rockingham are likely to be utilising ED services during after hours periods at a higher rate than previous periods.

Primary Care Workforce

The registered clinician to population ratio in Rockingham was lower than WA, Australia, and all major cities and inner regional areas, for GPs, nurses, pharmacists, psychologists, podiatrists and physiotherapists (DoH, 2015b).

From 2013 to 2014, there was a decrease in the number of pharmacists and psychologists registered to practice in Rockingham (DoH, 2015b).

> *"One of the main issues that came up time and again was the challenge within many multicultural communities of acknowledging that mental health conditions exist. They talked about how despite this lack of acknowledgment, mental health is a huge issue and young people from refugee and migrant backgrounds are often especially vulnerable due to their experiences of trauma, displacement and discrimination."*
>
> *(Young participant at YACWA Youth Summit)*

Identified needs and gaps in the location:

1. Reduce rates of health risk behaviour (Risk)
2. Undiagnosed / delayed presentation of diabetes (DM) and COPD
3. Appropriate management of musculoskeletal conditions (MSK)
4. May be a gap in semi / non-urgent emergency services—business hours or after hours

Groups with specific needs:

- Aboriginal and Torres Strait Islander people
- children who are developmentally vulnerable
- children, family and individuals who are homeless

Service Gaps/Needs	Risks	DM	COPD	MSK
Early detection		•	•	
Timely management		•	•	
Self-management	•	•	•	•
Team care		•	•	
HealthPathways		•	•	•

How can the system address health needs?

- Early detection and timely management of COPD and diabetes (DM).
- Prioritise the improvement of up-take of HealthPathways for diabetes, COPD and musculoskeletal conditions (MSK).
- Supported self-management for:
  - people living with chronic conditions particularly COPD, diabetes complications, and musculoskeletal conditions.
  - for people who wish to adopt healthier lifestyle.
- Health workforce development to support multidisciplinary team care for people with complex multi-morbidities particularly COPD and its exacerbations.
- Provide accessible and affordable after hours care.
- Ensure integrated, cultural security service delivery to Aboriginal people.
- Consider the needs of homeless people.

Waroona: health needs

Waroona is a relatively small LGA with population of 4,055 people. 12% of the residents are 70 years and older and 3.6% of the residents identify as Aboriginal descent.

The key health issues are childhood immunisation, diabetes, musculoskeletal system diseases, and death from transport accidents, as well as cancer screening (bowel and cervical) and mortality from cancer.

Further investigation will enhance understanding of the association between the high prevalence of musculoskeletal condition, transport accidents and the severe and profound disability among people younger than 65 years of age.

Health Outcomes

The median age at death in Waroona for males (75 years) and females (83 years) were lower than the Perth South PHN average for males (77 years) and females (84 years) in 2009-13. Waroona has the highest rate of avoidable death from cancer (28.4 per 100,000) in the Perth South PHN and from transport accidents (29.5) compared to the WA (8.9) and Australian (6.5) averages in 2009-13 (PHIDU, 2016).

17% of the Waroona reported fair or poor health in 2011-13. This was significantly higher than the WA and Australian averages (PHIDU, 2016).

Health Issues

Within the context of the highest avoidable death from cancer in Waroona during 2011-13, the bowel cancer screening rate for males in Waroona (22.5%) was the lowest in the PHN and considerably lower than the WA average (32.7%) in 2010 and 2011. The prevalence of diabetes in Waroona (8%) was highest in the PHN, while the prevalence of musculoskeletal system disease (30.8%) was the third highest during 2011-13. Considering the high mortality from transport accidents, the highest estimated rate of 3.4% under 65 years of age residents in the community with a profound or severe disability in 2011 presents an area for further study (PHIDU, 2016).

The childhood immunisation rate in Waroona is among the lowest in the PHN. In 2015, 85.2% of children were fully immunised at age 1 and 5, while 86% were fully immunised at 2 years. This is substantially lower than the Australian rates of 92.3% at 1 year, 89.3% at 2 years and 89.3% at 5 years of age (PHIDU, 2016).

Risk Factors

In 2011-13, the smoking rate in adult males was 28.4% in Waroona. This was significantly higher than the Australian average (20.3%). In the same year, 7.9% of adults in Waroona consumed alcohol at high risk levels. This was compared to an Australian average of 4.7%. The rate of obesity in Waroona was 32.6% during 2011-13, while the National average was 27.5% (PHIDU, 2016).

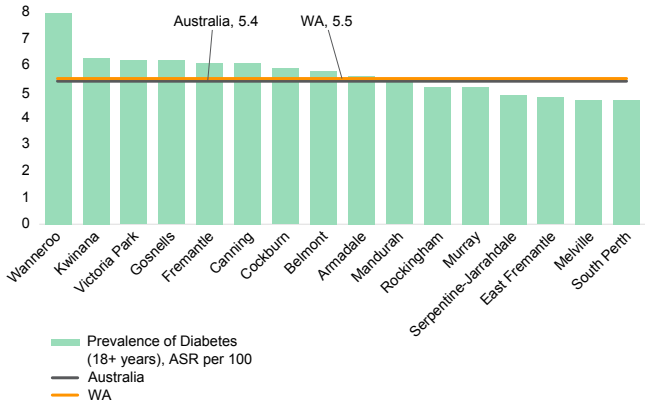


Figure 37. ASR of diabetes, per 100 population, in Perth South PHN by LGA, 2011-13 (PHIDU, 2016).

The rate of females in Waroona who participated in cervical cancer screening (46.4%) was also the lowest in the PHN and considerably lower than the WA average (55%) (PHIDU, 2016). Both bowel and breast cancer screening rates have improved levelling the State averages in 2014-15 (AIHW, 2016c).

Social Determinants

The SEIFA score in Waroona (948) was the lowest within the Perth South PHN indicating relative disadvantage (PHIDU, 2016). Over a quarter (26.9%) of the household in Waroona did not have internet connection in 2011, this was the highest rate in the PHN (PHIDU, 2016).

In 2011, close to half (47.5%) of high school students in Waroona leave school at year 10 or below, while in 2014, a third (33%) of the children under sixteen came from low income, welfare dependent families (PHIDU, 2016).

The number of people aged 65 years and over on an aged pension in Waroona (77.5%) was the highest in the PHN (PHIDU, 2016).

Waroona: service gaps

Service Issues

Waroona has a considerable service need. Affordable service is required to meet the needs of an ageing population with greater proportion of the people living with diabetes and musculoskeletal conditions and declining workforce numbers. Supported self-management is also required for residents in Waroona who are more likely to engage in health risk behaviours and less likely to engage in health protection behaviours.

Transport has been raised as a barrier for older adults accessing services.

Potentially Preventable Hospitalisations

PPHs for Waroona was reported in combination with Bunbury and four other LGAs (SA3 of Bunbury) in the South West region of Country WA PHN.

There were 2,708 PPHs in the Bunbury SA3 region during the 2013-14 financial year, and the average length of stay was 3.3 days (NHPA, 2015b).

This SA3 region had a higher rate for PPHs (2,567 PPHs per 100,000 population) than the Perth South PHN (2,261). PPHs due to both chronic and acute conditions was higher than the Perth South PHN. These were mainly due to higher than Perth South PHN and Australian averages of PPHs resulted from congestive heart failure, COPD, diabetes, kidney and urinary tract infections (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

The Perth South area of the Bunbury SA3, where Waroona LGA is situated, had a higher relative utilisation of semi-urgent presentations (triage 4) than the Australian average, while the non-urgent presentations (triage 5) was lower. This represented 646 semi-urgent and 85 non-urgent ED presentations in the 2013-14 financial year (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in Waroona was lower than WA, Australia and all major cities and inner regional areas for GPs, nurses, pharmacists, dental professionals (including dentists, hygienists and therapists etc.), psychologists, podiatrists, physiotherapists and occupational therapists (DoH, 2015b).

From 2013 to 2015, GP numbers fluctuated and the number of pharmacists, dental professionals, psychologists, podiatrist, physiotherapists and occupational therapists declined (DoH, 2015b).

> *"Having counsellors come to the school complemented the ongoing work that our School Psychologist and School Chaplain were doing. It also enabled the students to seek professional help without parents needing to travel to take them to appointments or wait for weeks sometimes months to be seen."*
>
> *(Community member, Waroona)*

Identified needs and gaps in the location:

1. Improve childhood immunisation (Imm) particularly at 1 and 5 years of age.
2. Improve cancer screening (Scr) rates (Bowel CS in male and cervical cancer screening in female).
3. Reduce rate of health risk behaviours—smoking, risky alcohol consumption, obesity (Risks).
4. Possibly undiagnosed/delayed presentation of circulatory (CVD) and respiratory (CRC) system conditions.
5. Possibly early detection and timely management of kidney and urinary tract infections.

Groups with specific needs:

- People who are socio-economically disadvantaged
- Aboriginal and Torres Strait Islander people
- Older adults
- Younger adults (0-64 years) living with profound and severe disability.

Service Gaps/ Needs	Risks	DM	CVD	COPD	MSK	CA	IM	UTI
Early detection			•	•		Scr		•
Timely management			•	•		•		•
Self-management	•	•	•	•	•	•	•	•
Team care		•	•	•	•	•		
HealthPathways		•	•	•	•			•

How can the system address health needs?

- Early detection and follow through to timely management to reduce avoidable hospitalisations and/ or mortality— cancer, CVD, COPD.
- Prioritise the improvement of up-take of HealthPathways for musculoskeletal conditions (MSK), diabetes (DM), circulatory conditions (CVD), COPD and UTI.
- Supported self-management for:
  - parents of young children on childhood immunisation
  - people living with complex chronic conditions including cancer (CA)
  - acute infections such as UTI
  - people who wish to adopt a healthier lifestyle.
- Health workforce support to deliver multidisciplinary team care for people with complex multi-morbidities and catering to groups with special needs.
- Ensure cultural security in health service delivery to Aboriginal people.

Commissioning Activities

What we intend to achieve

Our Expected Outcomes

Good commissioning is person-centred and focuses on the outcomes that people say matter to them most. It empowers people to have choice and control in their lives and over their care and support. Health systems should be built around desired outcomes that are achieved through a range of integrated activities which collectively contribute to progress and positive change.

Our work is built on the foundation of achieving improved outcomes by using an outcomes hierarchy approach. We are commissioning activities, and working with agencies across the health system. We use three levels: by starting at level 1 (population health outcomes) we are focused on a long-term or strategic approach. The vision is 'optimised health life' and an 'optimised health system'; everything we do in our work is shaped towards this horizon.

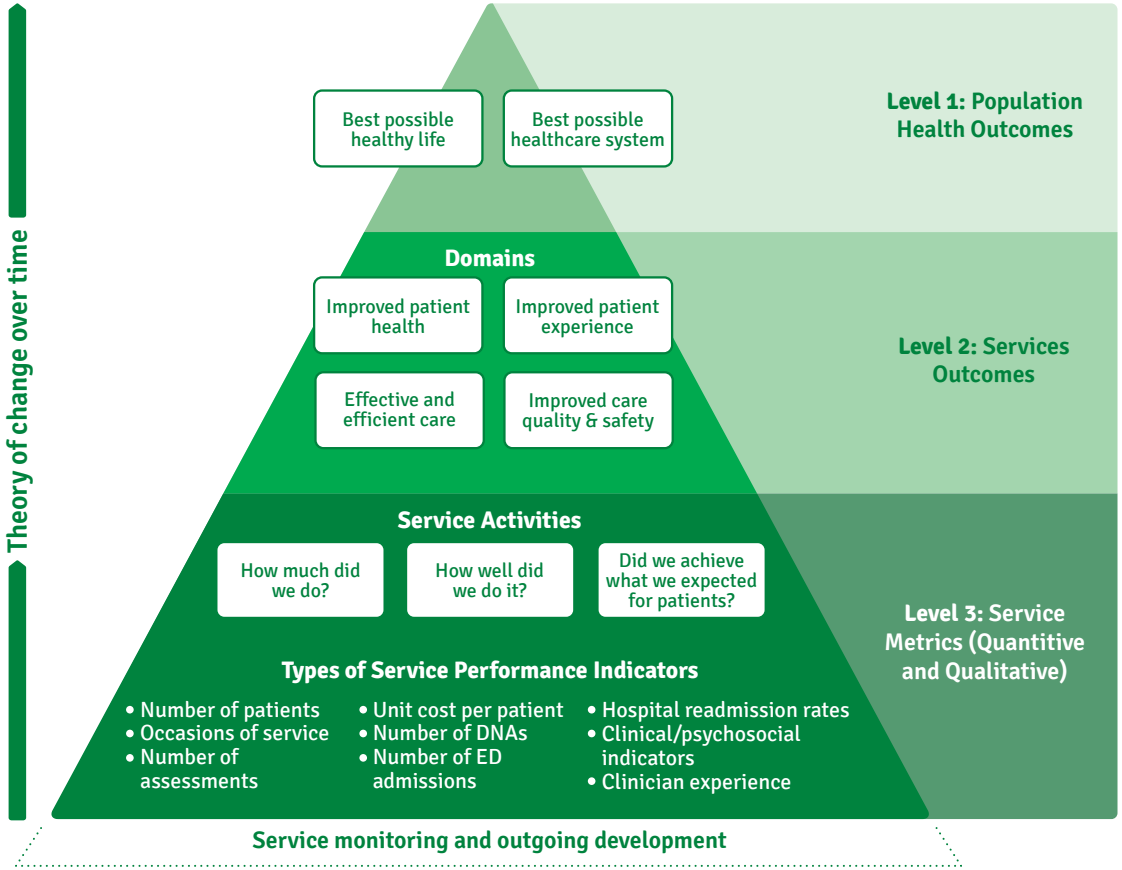


Figure 38: Population health outcomes hierarchy: population health, investment domains and service delivery

Effective and efficient commissioning achieves tangible outcomes for patients, clinicians and the system. Investment in health activities should result in the following changes:

- Improved patient health
- Improved patient experience
- Effective and efficient care
- Improved care quality and safety

We are working with service providers to ensure investments achieve these results through continual monitoring and evaluation.

Our Priorities for Action

Figure 39. WAPHA's priorities

As part of our PHN population health planning, issues are considered in consultation with local communities, consumers and healthcare providers as well as analysis of local-level data and information.

During our initial data analysis and stakeholder consultation process in 2015, we identified the priorities for action in Figure 38. We will continue to focus on these priorities for action in all our work.

Improving health outcomes in our communities

Perth South PHN is investing in a range of activities across the region. The PHN team, including primary health liaison staff, the regional coordination teams, HealthPathways staff and others, work with general practice and other primary care providers, as well as our partners in the hospital sector and other stakeholders, to ensure these activities are integrated across the health and social care systems at a local level.

Comprehensive Primary Care (CPC)

CPC is a targeted program for general practice to build their capacity to better care for patients with chronic and complex chronic disease. The PHN provides workforce training, IT tools and other support to enable patients to be better cared for in the community and avoid unnecessary trips to hospital.

The program is based on the 10 building blocks of high performing health care (Bodenheimer et al, 2014) (See Figure 39).

The program will be offered across the PHN, targeted to the priority locations identified in this report: Armadale, Belmont, Cockburn, Fremantle, Gosnells, Kwinana, Mandurah, Murray, Rockingham and Waroona.

Coordinating Care for Chronic Disease

CareFirst is a behaviour change program – integrated with Comprehensive Primary Care – for patients who have been diagnosed with a chronic condition in one of five key disease areas: chronic heart failure, chronic obstructive pulmonary disease, osteoarthritis, type 2 diabetes and cardiovascular disease. The CareFirst Disease Management program uses an enhanced care management IT platform, provides training in chronic disease management to primary care clinicians, education and self-management materials to patients, and administrative support to improve the effectiveness of the existing chronic disease management practices and provide coordinated care for patients.

The program will be offered to complement the Comprehensive Primary Care program and targeted to the priority locations identified in this report: Armadale, Belmont, Cockburn, Fremantle, Gosnells, Kwinana, Mandurah, Murray, Rockingham and Waroona.

Local Integrated Team Care (LITC)

Local Integrated Team Care (LITC) is a program approach that delivers place-based coordinated care to targeted vulnerable patient groups through a local network of providers, led by a lead agency. The aim of LITC is to provide responsive primary care that is integrated with other health and social services used by this group.

An Innovation Hub with key stakeholders is planned for summer 2016/17 to confirm the scope of this work. It is planned to be targeted in one of the priority locations identified in this report: Armadale, Belmont, Cockburn, Fremantle, Gosnells, Kwinana, Mandurah, Murray, Rockingham and Waroona.

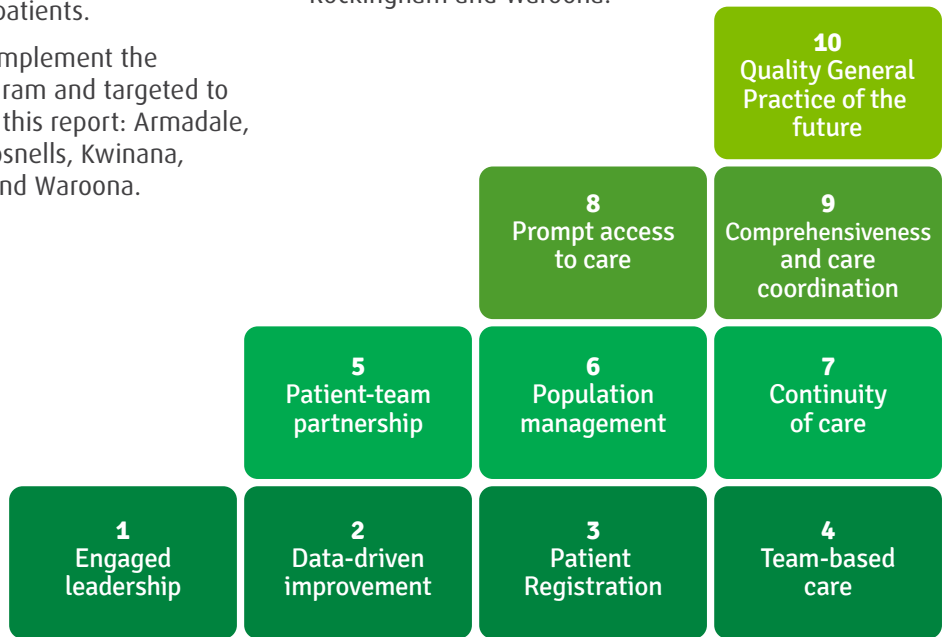


Figure 39. The 10 building blocks of high performing health care

Improving health outcomes in our communities

Integrated Team Care for Aboriginal People

The Integrated Team Care (ITC) program aims to contribute to improving health outcomes for Aboriginal and Torres Strait Islander people with chronic health conditions and contribute to closing the gap in life expectancy. It does this by providing care coordination services and more accessible multidisciplinary care, and by working with general practice to improve access to culturally appropriate mainstream primary care services for Aboriginal and Torres Strait Islander people. The PHN's Aboriginal Health Coordinator will support providers across the Perth North and Perth South PHNs to provide a coordinated service across both regions, integrated with other health and social services for Aboriginal people.

This program is available across the Perth South PHN in two ITC regions: Perth South West which consists of SA2 regions of Coolbellup, Fremantle (SA3), Greenfields, Kwinana (SA3), Mandurah, Pinjarra-Rockingham, South Lake - Cockburn Central, Warnbro; and Perth South East which consists of SA2 regions of Armadale-Wungong-Brookdale, Belmont-Ascot-Redcliffe, East Victoria Park-Carlisle, Gosnells, High Wycombe Kalamunda-Maida Vale-Gooseberry Hill, Maddington-Orange Grove-Martin, Rivervale-Kewdale-Cloverdale, Serpentine-Jarrahdale Thornlie, Victoria Park-Lathlain-Burswood.

Innovation and Evidence Fund

This fund enables the PHN to respond to locally identified opportunities for innovation in line with PHN priority needs. Grants will be allocated to one-off projects that demonstrate evidence of working across health and social care systems to improve health outcomes given the need to improve the integration of services.

Applications for the first round of grants closed in October 2016 and are due to be in place from early 2017. Invitations were sought from the priority locations in this report: Armadale, Belmont, Cockburn, Fremantle, Gosnells, Kwinana, Mandurah, Murray, Rockingham and Waroona.

Mental Health and AoD

The PHN is implementing an Integrated Primary Mental Health Care–Stepped Care approach across the region. This model is built around three core components: Integrated care management, low intensity telephone and eHealth, and community support services. This model has been developed based on research that shows that in most cases primary care practitioners who are able to recognise mental health conditions, independent of the reason for presentation, can provide effective treatment without the need to involve or refer to specialist services. In addition, where a diagnosable mental health problem is co-morbid with common chronic physical disorders, treating the mental disorder reduces preventable hospitalisations for the primary physical conditions.

The PHN also commissions headspace centres in Armadale, Fremantle and Rockingham. The centres are there to help young people access health workers–including GPs, psychologists, social workers, AoD workers, counsellors, vocational workers or youth workers.

From 1st January 1 2017, the PHN will commission a range of AOD treatment and support services within the metropolitan area. Target groups include young people, adults, people with co-occurring issues and Aboriginal people. Services will be available across the PHN.

Improving systems for better health outcomes

Perth South PHN staff are working across the health system to support health professionals and service providers to deliver efficient and effective care. Our activities include:

HealthPathways

HealthPathways is an online portal – designed for GPs by GPs – with condition-specific 'pathways'. Each pathway provides clinicians with information about assessment, management and local referral options for people with particular conditions. The HealthPathways site is designed to be used at point of care primarily by general practitioners but is also available to hospital specialists, nurses and other health professionals across WA.

Digital Health and My Health Record

Digital health includes a broad range of innovative technologies including: telehealth initiatives, sharing of health information, data extraction and analytics. Perth South PHN supports primary care clinicians to navigate and enhance patient care by providing advice, resources, advocacy and support. A number of practices are participating in a pilot initiative to share their de-identified data with the PHN as a step towards benchmarking their own performance against practices across the region.

Mental Health Lead Site

Having been selected as a Lead Site for primary mental health care reform the PHN is trialling an Integrated Primary Care Model approach to suicide prevention. The approach will be a community-based, four level intervention that incorporates the education of primary care physicians, a professional public relations campaign, training for community facilitators, and interventions with affected persons and high risk groups.

Initially this will be located in the Rockingham, Kwinana and Peel regions focussing on youth suicide prevention.

Supporting General practice

PHN staff work with GPs and other practice staff across the region on a range of issues including improving immunisation rates, improving cancer screening rates, accreditation, quality improvement, MBS queries, data for improvement, and other issues. For example, in spring 2016 over 140 practice managers attended local Practice Manager Networking Sessions on the topic of "Immunisation: Prevention is better than a cure".

Sector Capacity Building

Perth South PHN works with general practice and other primary care providers to enhance the capacity of the existing workforce and services. We do this through education, consultation, innovation hubs and workshops. We do this in partnership with other organisations including the WA General Practice Education and Training (WAGPET), the Australian Primary Health Care Nurses Association, WA hospitals and other providers.

We are developing an outcomes framework which will apply across all commissioning activities to ensure services are monitored and evaluated in a consistent way. Relevant information will be collected and analysed to provide evidence to support longer-term patient and systems change.

For further information on the activities that have been commissioned in each Perth South PHN LGA, see Appendix A.

Further Information

Contact us for more information

This report is an extension of a more in-depth analysis of Western Australian population health status and outcomes. Further information is available on request by emailing **info@wapha.org.au**.

WAPHA acknowledges all stakeholders that have been involved in this Report.

More information can be found at **wapha.org.au**

Primary Health Exchange

Primary Health Exchange is an online engagement site hosted by the WA Primary Health Alliance. The site supports stakeholders to join the conversation and inform the planning and design of primary health care in their community.

WAPHA and the PHNs recognise that engagement is an ongoing process and Primary Health Exchange provides a platform where people can exchange ideas, opinions and experiences across primary health.

By registering through the site stakeholders can get involved in forums, surveys and ideas boards, and stay in touch with their local Primary Health Network and its activities.

For more information about Primary Health Exchange and to register to participate, visit the website at **phexchange.wapha.org.au**

How do I get involved?

facebook.com/waphaphns

@WAPHA_PHNs

Curtin University

This report has been prepared by WAPHA's academic partner, Curtin University. All data is accurate on the date of publication (November 2016).

The information, tables and maps contained in this report have been sourced by Curtin University from multiple data sources for needs analysis purposes only. While Curtin University takes care in the compilation, analysis and provision of the information and data, it does not assume or accept any liability for the accuracy, quality, suitability and currency of the information or data, or for any reliance on the information or data. Curtin University recommends that users exercise their own care, skill and diligence with respect to the use and interpretation of the information and data.

References

Atun, R. (2015). Transitioning health systems for multimorbidity. The Lancet, 386, 721 – 722. Retrieved from: http://dx.doi.org/10.1016/S0140-6736(14)62254-6

Australian Bureau of Statistics. (2007). National Survey of Mental Health and Wellbeing: Summary of Results, 2007 (No. 4326.0) . Retrieved from: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4326.02007

Australian Bureau of Statistics. (2011). Census of Population and Housing: Socio-economic Indexes for Areas (SEIFA), Australia, 2011 (No. 2033.0.55.001). Retrieved from: http://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001

Australian Bureau of Statistics. (2013a). Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-13 (No. 4727.0.55.006). Retrieved from: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4727.0.55.006main+features12012-13

Australian Bureau of Statistics. (2013b). Australian Health Survey 2011-12. Retrieved from: http://www.abs.gov.au/australianhealthsurvey

Australian Bureau of Statistics. (2014). Causes of Death, Australia, 2012 (No. 3303.0). Retrieved from: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/3303.0main+features100012012

Australian Bureau of Statistics. (2015). Regional Population Growth (No. 3218.0). Retrieved from: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3218.02013-14?

Australian Bureau of Statistics. (2016). Causes of death Australia 2015 (No. 3303.0). Retrieved from: http://www.abs.gov.au/ausstats/abs@.nsf/mf/3303.0

Australian Health Ministers' Advisory Council. (2015). Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report. Canberra: AHMAC.

Australian Indigenous HealthInfoNet. (2013). Overview of the health of Indigenous people in Western Australia 2013. Retrieved from: http://www.healthinfonet.ecu.edu.au/uploads/docs/wa-overview-2013.pdf

Australian Institute of Health and Welfare. (2012). Australia's Health 2012. Canberra, A.C.T: AIHW

Australian Institute of Health and Welfare. (2013). National Drug Strategy Household Survey Detailed Report 2013. Retrieved from: http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129549848

Australian Institute of Health and Welfare. (2014). Cardiovascular disease, diabetes and chronic kidney disease— Australian facts: Mortality. Cardiovascular, diabetes and chronic kidney disease series no. 1. Cat. no. CDK 1. Canberra, A.C.T: AIHW.

Australian Institute of Health and Welfare. (2015a). Admitted Patient Care 2014-15: Australian hospital statistics. Cat. No. HSE 172. Canberra, A.C.T: AIHW

Australian Institute of Health and Welfare. (2015b). Alcohol and other drug treatment services in Australia 2013- 2014: state and territory summaries. Drug treatment series no. 25. Cat. no. HSE 158. Canberra, A.C.T: AIHW

Australian Institute of Health and Welfare. (2015c). The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147. Canberra, A.C.T: AIHW.

Australian Institute of Health and Welfare. (2015d). Hospital resources 2014-15: Australian hospital statistics. Cat. No. HSE 176. Canberra, A.C.T: AIHW.

Australian Institute of Health and Welfare. (2016a). Australia's Health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW

Australian Institute of Health and Welfare. (2016b). What is chronic kidney disease?. [Online] Retrieved from: http://www.aihw.gov.au/chronic-kidney-disease/what-is-ckd/ (Accessed October 2016)

Australian Institute of Health and Welfare. (2016c). Cancer screening in Australia by small geographical areas. Retrieved from: http://www.aihw.gov.au/cancer-data/cancer-screening/

Australian Institute of Health and Welfare. (2016d). National Aged Care Data Clearinghouse: National Aged Care Places Stocktake Reporting Tool. Retrieved from: http://www.aihw.gov.au/national-aged-care-data-clearinghouse/nacp/

Australian Institute of Health and Welfare. (n.d.). My Hospitals. [Online] Retrieved from: http://www.myhospitals.gov.au/

Australian Research Centre for Population Oral Health, The University of Adelaide, South Australia. (2011). Chronic disease and use of dental services in Australia. Australian Dental Journal, 56: 336–340

Baker IDI .(2012). Diabetes: the silent pandemic and its impact on Australia. Retrieved from: https://static.diabetesaustralia.com.au/s/fileassets/diabetes-australia/e7282521-472b-4313-b18e-be84c3d5d907.pdf

Brodaty, H. & Green, A. (2002). Who cares for the carer? The often forgotten patient. Australian Family Physician, 31, 833-836.

Bodenheimer, Thomas, et al. (2014). "The 10 building blocks of high-performing primary care." The Annals of Family Medicine 12, 166-171.

The Cabin .(2016). Prescription drug addiction is out of control. Retrieved from: http://www.thecabinsydney.com.au/prescription-drug-addiction-in-australia-is-out-of-control/

References

Centres for Disease Control and Prevention. (2016). Social Determinants of Health: Know What Affects Health. Retrieved from: http://www.cdc.gov/socialdeterminants/

Coglan, R., et al., Duty to Care: Physical Illness in people with mental illness. 2001, Perth: The University of Western Australia

Curtin University. (2016). Perth South Primary Health Network: needs assessment of the after hours primary health care services. Perth: Health Systems & Health Economics School of Public Health.

Department of Health. (2009). Evaluation of the BreastScreen Australia Program – Evaluation Final Report. Retrieved from: http://webarchive.nla.gov.au/gov/20140309231618/http://www.health.gov.au/internet/screening/publishing.nsf/Content/br-evaluation-report-cnt

Department of Health. (2015a). Epidemiology Branch data

Department of Health. (2015b). National Health Workforce Dataset. Retrieved from http://data.hwa.gov.au/webapi/jsf/dataCatalogueExplorer.xhtml

Department of Health. (2016a). Emergency Department comparison files. Available from: http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Secure

Department of Health. (2016b). Health determinants. Retrieved from: http://www.health.gov.au/internet/publications/publishing.nsf/Content/oatsih-healthplan-toc~determinants

Department of Health. (2016c). Medicare Benefit Schedule Data. Retrieved from: http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data

Department of Health. (2016d). Metropolitan Health Service: Annual Report 2015–16. Retrieved from: http://ww2.health.wa.gov.au/~/media/Files/Corporate/Reports%20and%20publications/Annual%20reports/2016/metro-annual-report-2015-16.ashx

Department of Health. (2016e). WA Framework for Persistent Pain: 2016-2021 [draft]

Department of Health. (n.d.) Consumer Health Services Directory. Retrieved from: http://www.health.wa.gov.au/services/category.cfm?Topic_ID=10

Department of Human Services. (2016). Medicare Locals Statistics Reports. Retrieved from: http://medicarestatistics.humanservices.gov.au/statistics/med_locals.jsp

Department of Social Services. (2015). Settlement Reports: Local government areas by migration stream. Retrieved from: https://www.dss.gov.au/our-responsibilities/settlement-and-multicultural-affairs/settlement-reporting-facility/settlement-quick-reports/migration-stream-by-local-government-area

Drug and Alcohol Office. (2014). Alcohol-related hospitalisations and deaths in Western Australia. Regional profile: South Metro. Drug and Alcohol Surveillance Report. Perth: Drug and Alcohol Office.

Duckett, S. & K. Griffiths (2016). Perils of place: identifying hotspots of health inequalities, Grattan Institute. Retrieved from: http://grattan.edu.au/wp-content/uploads/2016/07/874-Perils-of-Place.pdf

Garcia, R.I., Henshaw, M.M. & Krall, E.A. (2000). Relationship between periodontal disease and systemic health. Periodontology, 25.

Hood, R., Miller, J. & Christou, A. (2010) National Drug Strategy Household Survey 2010: Western Australian Supplementary Tables, DAO Surveillance Report. Western Australia: Drug and Alcohol Office, Perth; 2012. Report number 06.

Innovation Unit. (2015). Hard Edges: the Lives Behind the Numbers. https://hardedgesthestories.com/

Lobelo, F., Trotter, P. & Healther, A. J. (2016). White Paper: Chronic Disease is Healthcare's Rising Risk. Retrieved from: http://www.exerciseismedicine.org/assets/page_documents/Whitepaper%20Final%20for%20Publishing%20(002)%20Chronic%20diseases.pdf

Long, A. & Dagogo-Jack, S. (2011). The Comorbidities of Diabetes and Hypertension: Mechanisms and Approach to Target Organ Protection. J Clin Hypertens, 13(4), 244-251.

Mindframe (2014). Culturally and linguistically diverse populations. Canberra, A.C.T: Hunter Institute of Mental Health.

Morgan, V., Marwick, P., Waterreus, A., Jablensky, A., Rock, D. ... Prinzio, P. (2013). Survey of High Impact Psychosis (North Metro SHIP). Retrieved from: http://www.psychiatry.uwa.edu.au/__data/assets/pdf_file/0009/2806119/2013-Morgan_NorthMetroSHIP_REPORT.pdf

National Aboriginal Health Strategy Working Party. (1989). The National Aboriginal Health Strategy. Canberra, A.C.T.

National Diabetes Services Scheme (2016). Diabetes Map. Retrieved from: http://www.diabetesmap.com.au/#/

The National Heart Foundation (2015). Prevalence of Heart Disease in Western Australia [Fact sheet]. Available from: http://heartfoundation.org.au

References

National Health Performance Authority (2013). Healthy Communities: Australians' experiences with access to health care in 2011–12. Retrieved from http://www.myhealthycommunities.gov.au/our-reports/australians-experiences-with-primary-health-care/june-2013

National Health Performance Authority (2015a). Healthy Communities: Australian's with a long-term health condition 2013-14. Retrieved from: http://www.myhealthycommunities.gov.au/our-reports/australians-experiences-with-primary-health-care-updates/october-2015

National Health Performance Authority (2015b). Healthy Communities: Potentially preventable hospitalisations in 2013-14. Retrieved from: http://www.myhealthycommunities.gov.au/our-reports/potentially-preventable-hospitalisations/december-2015

National Health Service Directory (2016). http://www.nhsd.com.au/

National Mental Health Commission (2014). The National Review of Mental Health Programmes and Services. Sydney: NMHC

National Rural Health Alliance (2016). Social determinants of health. Retrieved from: http://ruralhealth.org.au/advocacy/current-focus-areas/social-determinants-health

New Local Government Network (NLGN). (2016). Get Well Soon: Reimagining Place-Based Health, London. Retrieved from: http://www.nlgn.org.uk/public/wp-content/uploads/Get-Well-Soon_FINAL.pdf

Nicholas, R., Lee, N., & Roche, A. (2011). Pharmaceutical Drug Misuse in Australia: Complex Problems, Balanced Responses. National Centre for Education and Training on Addiction (NCETA), Flinders University, Adelaide.

Office of Multicultural Interests (2013). Cultural Diversity in Western Australia: A Demographic Profile. In: Communities, D. O. L. G. A. (ed.). Perth, W.A: Government of Western Australia.

Public Health Information Development Unit (PHIDU). Social Health Atlas of Australia: Primary Health Networks (online). Retrieved from: http://www.phidu.torrens.edu.au/social-health-atlases/data (accessed September 2016).

Ranmuthugala, G., Nepal, B. & Brown, L. (2009). Impact of home based long term care on informal carers. Australian Family Physician, 38.

Raphael, D. (2012). Tackling health inequalities: Lessons from international experiences. Canadian Scholars' Press.

RUAH (2016). Perth Registry Week 2016 Final Report. Accessed from: http://www.ruah.com.au/wp-content/uploads/Ruah-Perth-Registry-Week-2016-Final-Report.pdf

St John Ambulance (2016). Ambulance attendances data set [unpublished]

Strong K, Trickett P, Titulaer I & Bhatia K 1998. Health in rural and remote Australia: the first report of the Australian Institute of Health and Welfare on rural health. Cat. no. PHE 6. Canberra: AIHW

Tanamas, S., Magliano, D., Lynch, B., Sethi, P., Willenberg, L., Polkinghorne, K., Chadban, S., Dunstan, D. & Shaw, J. (2013). AusDiab 2012: The Australian Diabetes, Obesity and Lifesyle Study. Australia: Baker I.D.I. Heart and Diabetes Institute

WAPHA. (2016). WA Primary Health Alliance databases.

Western Australian Mental Health Commission (2015), Better Choices. Better Lives. Western Australian Mental Health, Alcohol and Other Drug Services Plan 2015-2025. Perth, W.A: Western Australian Mental Health Commission.

Western Australian Mental Health Commission (2016). Suicide Prevention 2020: Together we can save lives

Western Australian Planning Commission (2015). Western Australia Tomorrow Population Report No.10: Medium Term Population Forecasts for Western Australia 2014-2026 and Sub-regions 2016-2026. Retrieved from: http://www.planning.wa.gov.au/publications/6194.asp

Wilcox, H.C., Kuramoto, S.J., Lichtenstein, P., Långström, N., Brent, D.A., Runeson, B. (2010). Psychiatric morbidity, violent crime, and suicide among children and adolescents exposed to parental death. Journal of the American Academy of Child & Adolescent Psychiatry, 49, 514-23.

World Health Organization. (1948). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948

Methodology and data limitations

1. Hospitalisation (potentially preventable hospitalisations, ED, admitted patient care, and MBS utilisation data are available at SA3, but not at LGA levels. For instances where over 90% of the population in a SA3 resides in the same LGA, the SA3 and LGA was taken as fully aligned and the hospitalisation rates and MBS utilisation data were applied directly in this analysis. Perth City SA3 comprises of the LGAs of Vincent (34.21%), Perth (17%), Stirling (18%), Subiaco (16%), Cambridge (13%), Bayswater (0.8%), and Nedlands (0.1%). Hospitalisation and MBS utilisation were reported as a whole, while other indicators were analysed and reported separately in order to make small area inferences on the potential locations of highest health need within the SA3 region. Mandurah SA3 comprises of the entire Mandurah LGA and 95% of the resident population in Murray LGA. Identical hospitalisation and MBS utilisation data were reported for both priority locations.
2. Australian Bureau of Statistics (ABS) provides regional population growth numbers to LGA levels by age, gender but not Indigenous status. ABS does not provide population projections as it has been agreed that small area projections should be performed at the state and territory level to allow inclusion of local assumptions. WA Department of Health provides population projections and growth numbers to health service regions; however, these do not align with Perth South and Perth North PHN boundaries. Therefore, population numbers from 2011 Population Census was applied directly to produce the population pyramids for both metropolitan PHNs in WA.
3. The small sample sizes, and consequently large confidence intervals, for majority of the modelled estimates at LGA levels created challenges in establishing statistical significance to the comparators (state/national/PHN or comparison among LGAs). Where statistical significance could be established, it was highlighted in the report as 'significantly' higher or lower. For indicators which statistical significance could not be established when comparing state and national averages to LGAs, the rates were ranked within the PHN to establish localities with 'higher' or 'lower' than Australian, WA or PHN average rates.
4. Australian Health Practitioner Regulation Agency (AHPRA) registered Health Workforce Data were available in two separate sets for each disciplines. The data collection methods for the earlier data set 2010-2012 and the latest data set 2013-2015 were not identical therefore longer term trend analysis was not possible. Workforce trends were reported based on the changes from 2013 to 2014 in most disciplines with the exception of GP and nurses where it was possible to study the changes from 2013-2015. Due to small numbers in some LGAs, it was only possible to report changes in number of clinicians.
5. Number of aged care places extracted from the National Aged Care Places Stocktake Reporting Tool was available by Aged Care Planning Regions (ACPR), which aligns with the boundaries of two Perth metropolitan PHNs and 7 planning regions in Country WA PHN. Finer granularity was not available at the time of this analysis.
6. The data used to determine suicide rates is a modelled estimate, so must be interpreted with caution. In the instances where there is no number provided for a location or area, there may have been no suicides occur, or no data was available to determine a rate. When numbers are very low, or zero, they will not appear on graphs, such as for Waroona. There is a potential that the data may be skewed, as the coroner does not always release suicide information.
7. The NHSD data is based on the self-reporting of practices, so therefore it may be inaccurate in terms of practices and opening hours.
8. The number of general practitioners reported includes those employed within general practices, Aboriginal medical services and hospitals.

Abbreviations

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Ministers' Advisory Council
AHW	Aboriginal Health Worker
AOD	Alcohol and other Drugs
ASR	Age Standardised Rate
BMI	Body Mass Index
CALD	Culturally and Linguistically Diverse
CBD	Central Business District
CDC	Centres for Disease Prevention and Control
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
DAO	Drug and Alcohol Office
DoH	Department of Health
DSS	Department of Social Services
ED	Emergency Department
ERP	Estimated Residential Population
ENT	Ear Nose Throat
FIFO	Fly In Fly Out
GP	General Practitioner
IT	Information Technology
ITC	Integrated Team Care
K10	Kessler 10 Scale
LGA	Local Government Area
LGBTIQ	Lesbian, Gay, Bisexual, Transgender, Intersex and Questioning
LITC	Local Integrated Team Care
MBS	Medicare Benefits Schedule
MHC	Mental Health Commission
NDSS	National Diabetes Services Scheme
NHF	National Heart Foundation
NHPA	National Health Performance Authority
PHN	Primary Health Network
PHIDU	Public Health Information Development Unit
PPH	Potentially Preventable Hospitalisation
SA3	Statistical Area Level 3
SEIFA	Socio-economic Indexes for Areas
SMHS	South Metropolitan Health Service
UTI	Urinary Tract Infection
VR	Vocational Registered
WA	Western Australia
WAPHA	WA Primary Health Alliance
WHO	World Health Organization

Glossary

Aboriginal

The term Indigenous is used to refer to Australian Aboriginal and Torres Strait Islander people. The most widely adopted definition of Aboriginal or Torres Strait Islander (the 'Commonwealth working definition') is:

- a person of Aboriginal or Torres Strait Islander descent;
- who identifies as being of Aboriginal or Torres Strait Islander origin; and
- who is accepted as such by the community with which the person associates.

This definition was developed during the period 1967 to 1978 and is now widely accepted by Commonwealth and other government agencies. In WA, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islanders peoples, in recognition of the Aboriginal peoples as the Traditional Owners of WA. No disrespect is intended towards the Torres Strait Islanders members of the Western Australian community.

Admission

The formal process, using registration procedures, under which a person is accepted by a hospital or an area or district health service facility as an inpatient.

Age- standardised rate

A method of adjusting the crude rate to eliminate the effect of differences in population age structures when comparing crude rates for different periods of time, different geographic areas and/or different population sub-groups (e.g. between one year and the next and/or States and Territories, Indigenous and non-Indigenous populations). Adjustments are usually undertaken for each of the comparison populations against a standard population (rather than adjusting one comparison population to resemble another). Sometimes a comparison population is referred to as a study population.

Avoidable mortality

Refers to deaths from certain conditions that are considered avoidable given timely and effective health care. Avoidable mortality measures premature deaths (for those aged 0–74 years) for specific conditions defined internationally and nationally as potentially avoidable given access to effective health care

Body Mass Index (BMI)

The most commonly used method of assessing whether a person is normal weight, underweight, overweight or obese (see overweight and obesity). It is calculated by dividing the person's weight (in kilograms) by their height (in metres) squared; that is, $kg \div m^2$. For both men and women, underweight is a BMI below 18.5, acceptable weight is from 18.5 to less than 25, overweight is from 25 to less than 30, and obese is 30 and over. Sometimes overweight and obese is combined, and is defined as a BMI of 25 and over.

Culturally and linguistically diverse (CALD)

Culturally and linguistically diverse (CALD) populations generally have poorer health outcomes than other population groups, suggesting a need for additional or better targeted health services. The ethnic composition of a population can provide insight into potential health service requirements. People from CALD backgrounds experience higher levels of disadvantage and other risk factors than Anglo-Australians.

Chronic diseases

A chronic condition is a human health condition or disease that is persistent or otherwise long-lasting in its effects or a disease that comes with time. The term chronic is usually applied when the course of the disease lasts for more than three months.

Co-morbidities/multi-morbidities

The presence of one or more additional disorders (or diseases) co-occurring with a primary disease or disorder; or the effect of such additional disorders or diseases.

Coronary heart disease

Coronary heart disease, also known as ischaemic heart disease, is the most common form of heart disease. There are two major clinical forms—heart attack (often known as acute myocardial infarction) and angina.

Chronic obstructive pulmonary disease (COPD)

Chronic obstructive pulmonary disease is a serious, progressive and disabling condition that limits airflow in the lungs. It includes emphysema and chronic bronchitis. People with COPD are often short of breath and may have frequent coughing. The condition mainly affects older people and its main cause is active smoking or exposure to smoking, although some people with COPD have never smoked in their lives.

Dental practitioner

Dental practitioner refers to the sum of dentists, oral health therapists, dental hygienists and therapists.

Glossary

Diabetes mellitus

A chronic condition marked by high levels of glucose in the blood. This condition is caused by the inability to produce insulin (a hormone produced by the pancreas to control blood glucose levels), or the insulin produced becomes less effective, or both. The three main types of diabetes are: Type 1, Type 2 and gestational diabetes.

- Type 1 diabetes, an autoimmune condition, is marked by the inability to produce any insulin and those affected need insulin replacement for survival. Type 1 diabetes is rare among Indigenous Australians;
- Type 2 diabetes (non-insulin dependent) is the most common form of diabetes. Those with Type 2 diabetes produce insulin but may not produce enough or cannot use it effectively. There is a high prevalence of Type 2 diabetes among Indigenous Australians, who tend to develop it earlier than other Australians and die from the disease at younger ages;
- Gestational diabetes occurs during pregnancy and usually disappears after birth.

Dialysis

A medical procedure for the filtering and removal of waste products from the bloodstream. Dialysis is used to remove urea, uric acid and creatinine (a chemical waste molecule that is generated from muscle metabolism) in cases of chronic end-stage renal disease. Two main types are:

- haemodialysis — blood flows out of the body into a machine that filters out the waste products and returns the cleansed blood back into the body;
- peritoneal dialysis — fluid is injected into the peritoneal cavity and wastes are filtered through the peritoneum, the thin membrane that surrounds the abdominal organs.

Foetal alcohol spectrum disorders (FASD)

Conditions that may result from foetal exposure to alcohol during pregnancy. Disorders include foetal alcohol syndrome, alcohol-related neurodevelopmental disorder and alcohol-related birth defects. These disorders include antenatal and postnatal growth retardation, specific facial dysmorphology and functional abnormalities of the central nervous system.

Health care provider

Health professional or health organisation involved in supplying health services.

Health literacy

Is the ability to obtain, read, understand and use healthcare information to make appropriate health decisions and follow instructions for treatment.

Illicit drugs

Illicit drugs include illegal drugs (amphetamine, cocaine, marijuana, heroin, hallucinogens), pharmaceuticals when used for non-medical purposes (pain-killers, sleeping pills) and other substances used inappropriately (inhalants such as petrol or glue).

Incidence

The number of new cases (of an illness or event, and so on) occurring during a given period. Compare with prevalence.

Life expectancy

The average number of years of life remaining to a person at a particular age. Life expectancy at birth is an estimate of the average length of time (in years) a person can expect to live, assuming that the currently prevailing rates of death for each age group will remain the same for the lifetime of that person.

Overweight and obesity

Overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height. The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health conditions. See also Body Mass Index (BMI).

Potentially preventable hospitalisations (PPH)

Hospital separations from a specified range of conditions where hospitalisation is considered to be largely preventable if timely and adequate care were provided through population health services, primary care and outpatient services. The PPH conditions are classified as vaccine-preventable, chronic and acute. Respective examples include influenza and pneumonia, diabetes complications and COPD, and dental and kidney conditions. The rate of PPHs is currently being used as an indicator of the effectiveness of a large part of the health system, other than hospital inpatient treatment.

Prevalence

The number or proportion (of cases, instances, and so forth) in a population at a given time. In relation to cancer, refers to the number of people alive who had been diagnosed with cancer in a prescribed period (usually 1-, 5-, 10- or 26-years). Compare with incidence.

Primary health care

Primary health care usually is the first point of contact a person encounters with the health care system. In mainstream health throughout Australia primary health care is normally provided by general practitioners, community health nurses, pharmacists, environmental health officers etc., although the term usually means medical care. Primary health care may be provided through an ACCHO or satellite clinic (AH&MRC 1999).

Glossary

Respiratory disease

Respiratory disease includes conditions affecting the respiratory system — which includes the lungs and airways — such as asthma, COPD and pneumonia (see also Chronic Obstructive Pulmonary Disease).

Risk-rising population

The rising-risk chronic disease population group typically represent 20-30% of the population, and due to their numbers, can actually account for a higher total healthcare spend than the high risk group. The rising-risk group is not yet sick enough for expensive clinical care, and they are past the point where preventative solutions are effective.

SA3

Statistical Areas Level 3 (SA3s) are geographical areas that will be used for the output of regional data, including 2011 Census Data. There is no equivalent unit in the Australian Standard Geographical Classification (ASGC). The aim of SA3s is to create a standard framework for the analysis of ABS data at the regional level through clustering groups of SA2s that have similar regional characteristics. There are 351 SA3s covering the whole of Australia without gaps or overlaps. They are built up of whole SA2s. Whole SA3s aggregate directly to SA4s.

Secondary health care

Secondary health care refers to particular services provided by hospitals, such as acute care, as well as services provided by specialists.

Socio-cultural determinants influencing health

Social and cultural determinants of health are the broader social, cultural and economic conditions that contribute to disease. These are the conditions into which people are born, grow, live, work and age. According to this view, a person's occupation, education, material resources, social support networks and socio-economic status can affect their health and contribute to health inequalities.

Socio-economic Indexes for Areas (SEIFA) The SEIFA Index of Disadvantage can be used to determine the relative level of disadvantage of different areas based on a range of statistics gathered through census surveys. The indicators reflecting social disadvantage include low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. A higher SEIFA score indicates an area with a lower relative level of disadvantage, while a lower score signifies and area with a higher level of disadvantage.

Tertiary health care

Tertiary health care refers to highly specialised or complex services provided by specialists or allied health professionals in a hospital or primary health care setting, such as cancer treatment and complex surgery.

Unemployment rate

The number of unemployed people expressed as a proportion of the labour force (i.e. employed and unemployed).

Vulnerable person

A vulnerable person is someone who has less access to the right services; this includes people who are disadvantaged by their age, gender or disabilities. Some services may not be culturally appropriate and therefore access is restricted to that individual.

Years of life lost

Is an indicator of premature mortality and is calculated by multiplying the number of deaths by the standard life expectancy (in years).

Appendices

Appendix A — Commissioning activities by Local Government Area

Activity/LGA/ Pillar	Whole PHN	Armadale	Belmont	Cockburn	Fremantle	Gosnells	Kwinana	Mandurah	Murray	Rockingham	Waroona	Aboriginal Health	Mental Health	Aged Care	Population Health	Digital Health	Workforce
Comprehensive Primary Care																	
headspace																	
50 Lives 50 Homes																	
Telehealth structured psychological services																	
Mental health care managers																	
Structured psychological substitution service																	
Community support mental health services																	
Social and Emotional Wellbeing Teams Care Trial																	
Primary Health Providers Cultural Awareness Training																	
Arbor suicide bereavement support																	
General Practice Support																	
HealthPathways																	
Lead site suicide prevention																	
Integrated Team Care																	
Alcohol and other drug treatment services																	
Local Integrated Team Care	Activity being scoped. Locations to be confirmed.																
Innovation and Evidence Fund	First round of grant applications being assessed. Locations to be confirmed.																
Mental Health Hospital Transitions Project																	

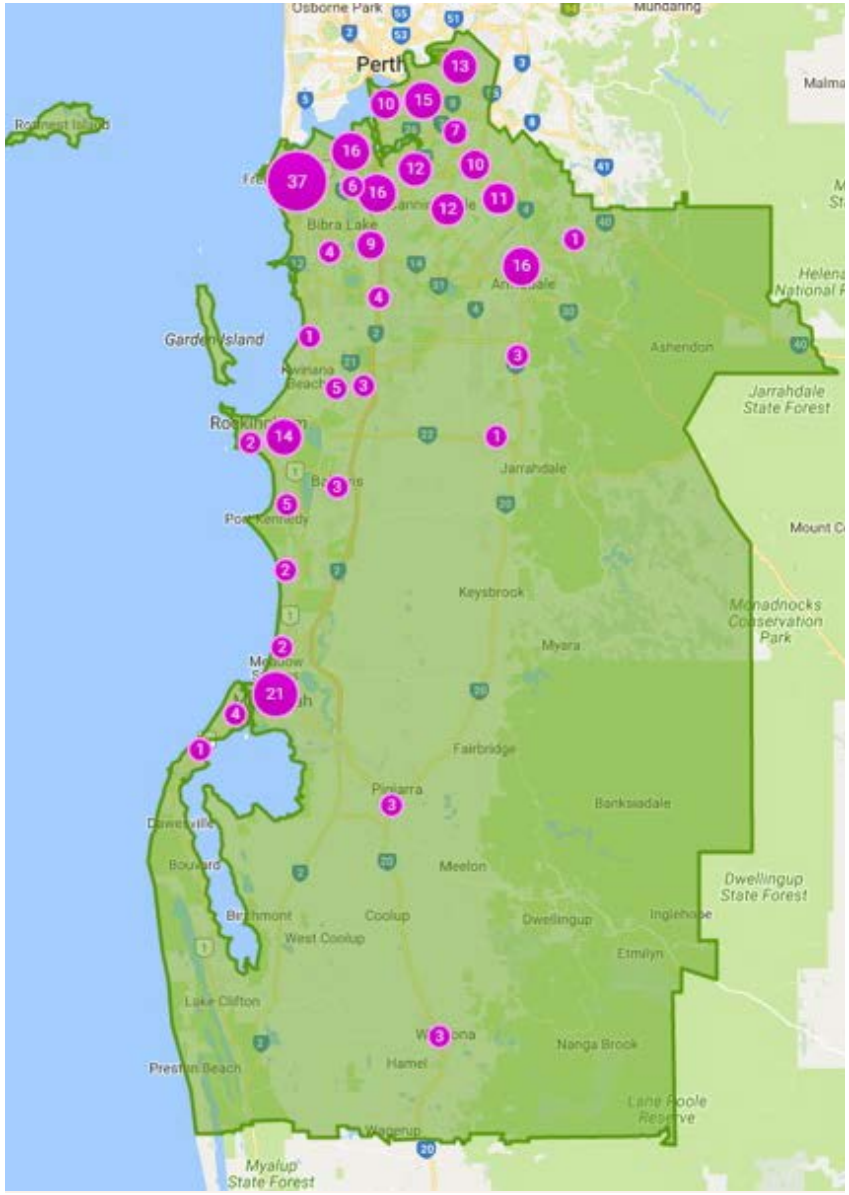
activity is in place

activity is planned

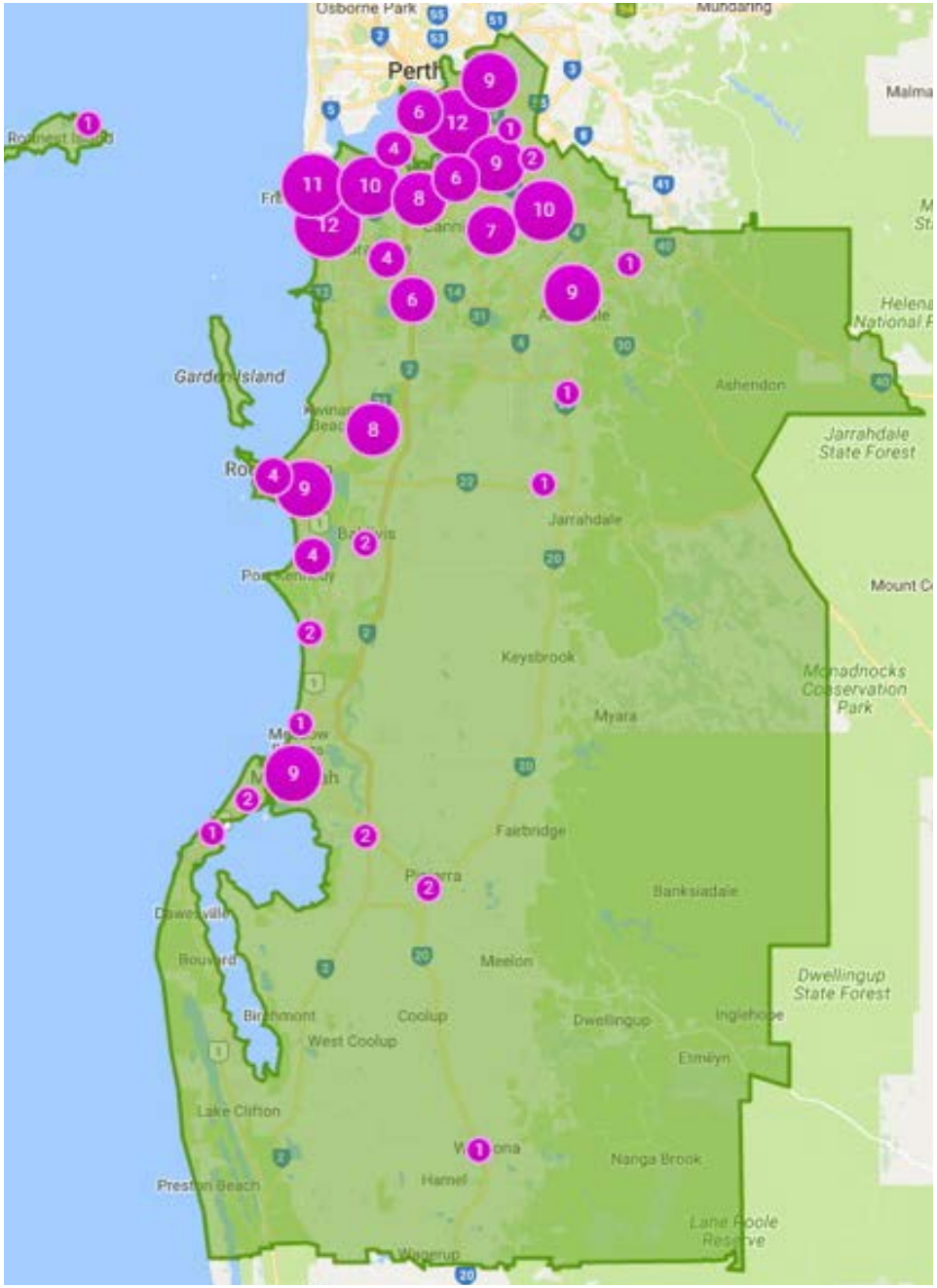
activity is being scoped

Appendix B — Services in Perth South PHN

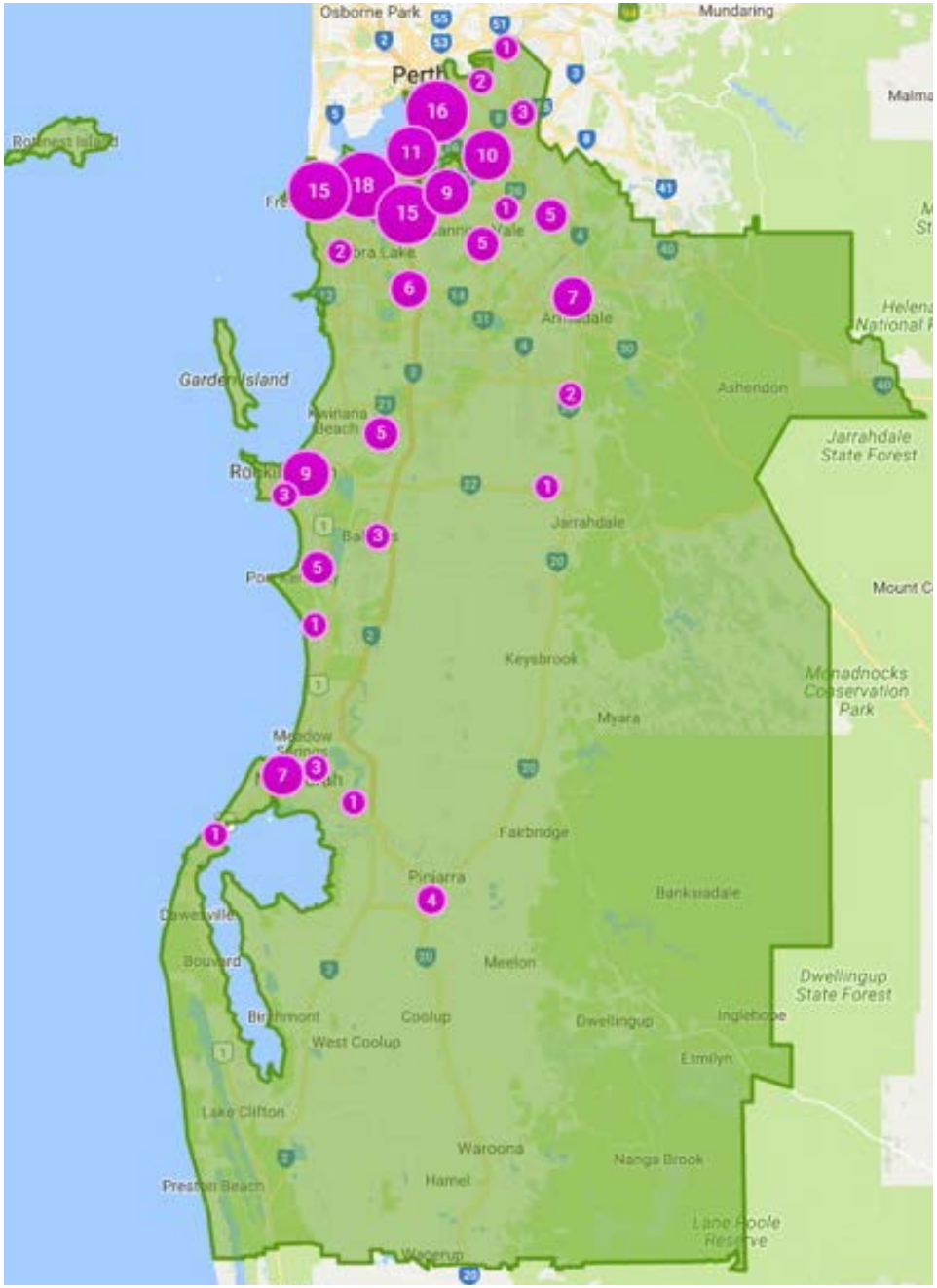
Maps in the appendices indicate the supply of selected primary health providers across the Perth South PHN catchment.



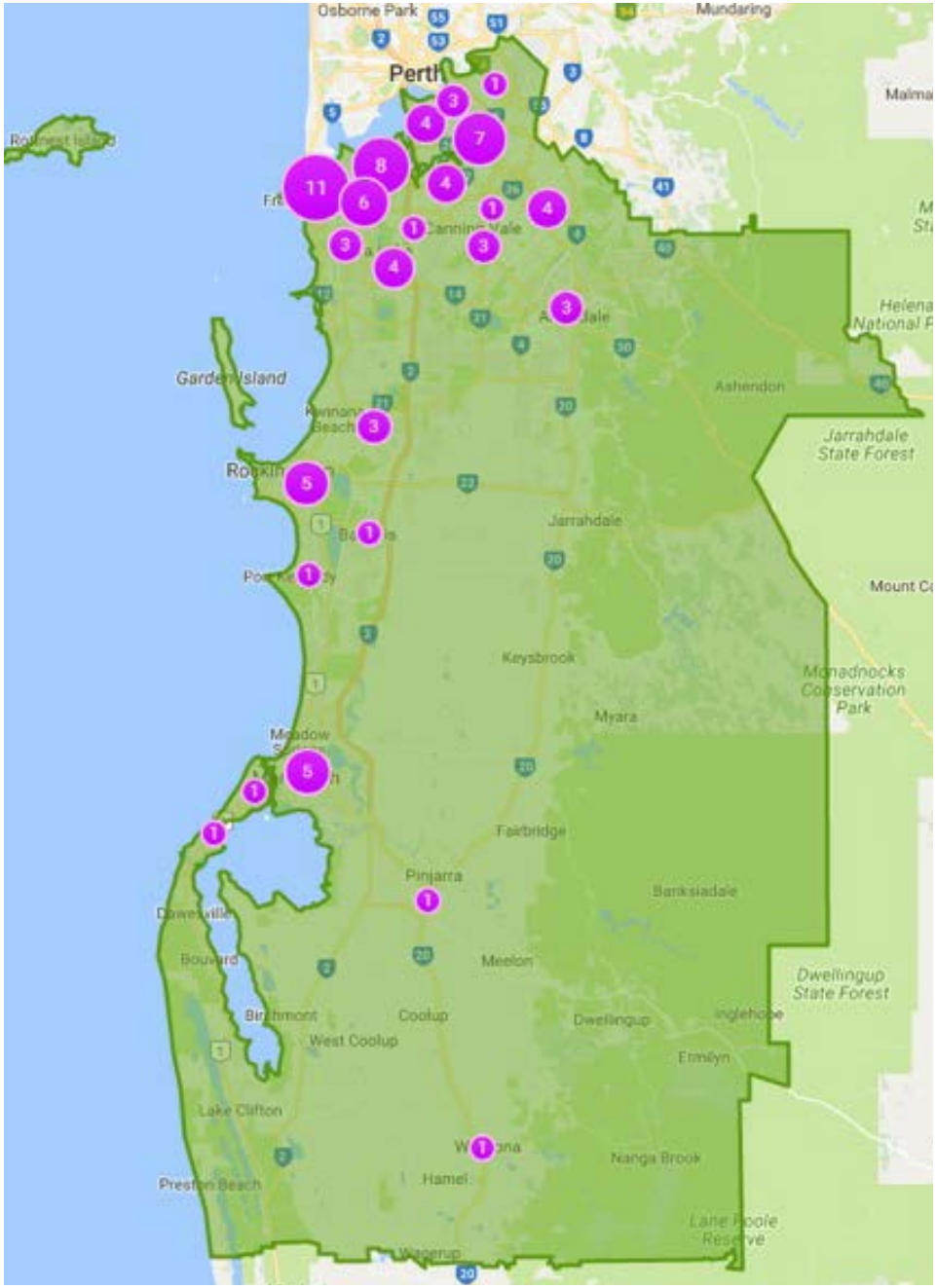
Map 3. GP services in Perth South PHN, 2016 (NHSD, 2016).



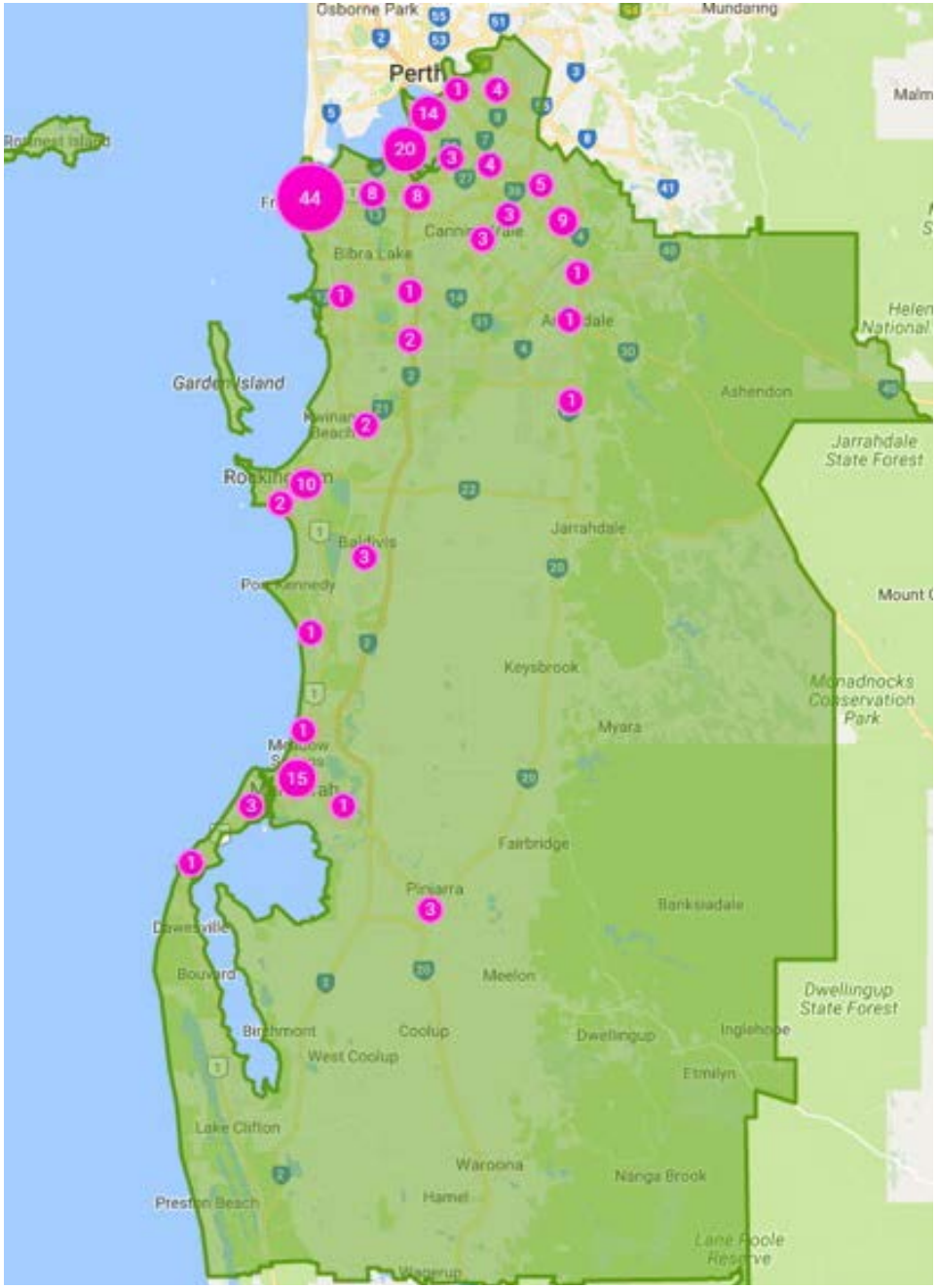
Map 4. Pharmacy services in Perth South PHN, 2016 (NHSD, 2016).



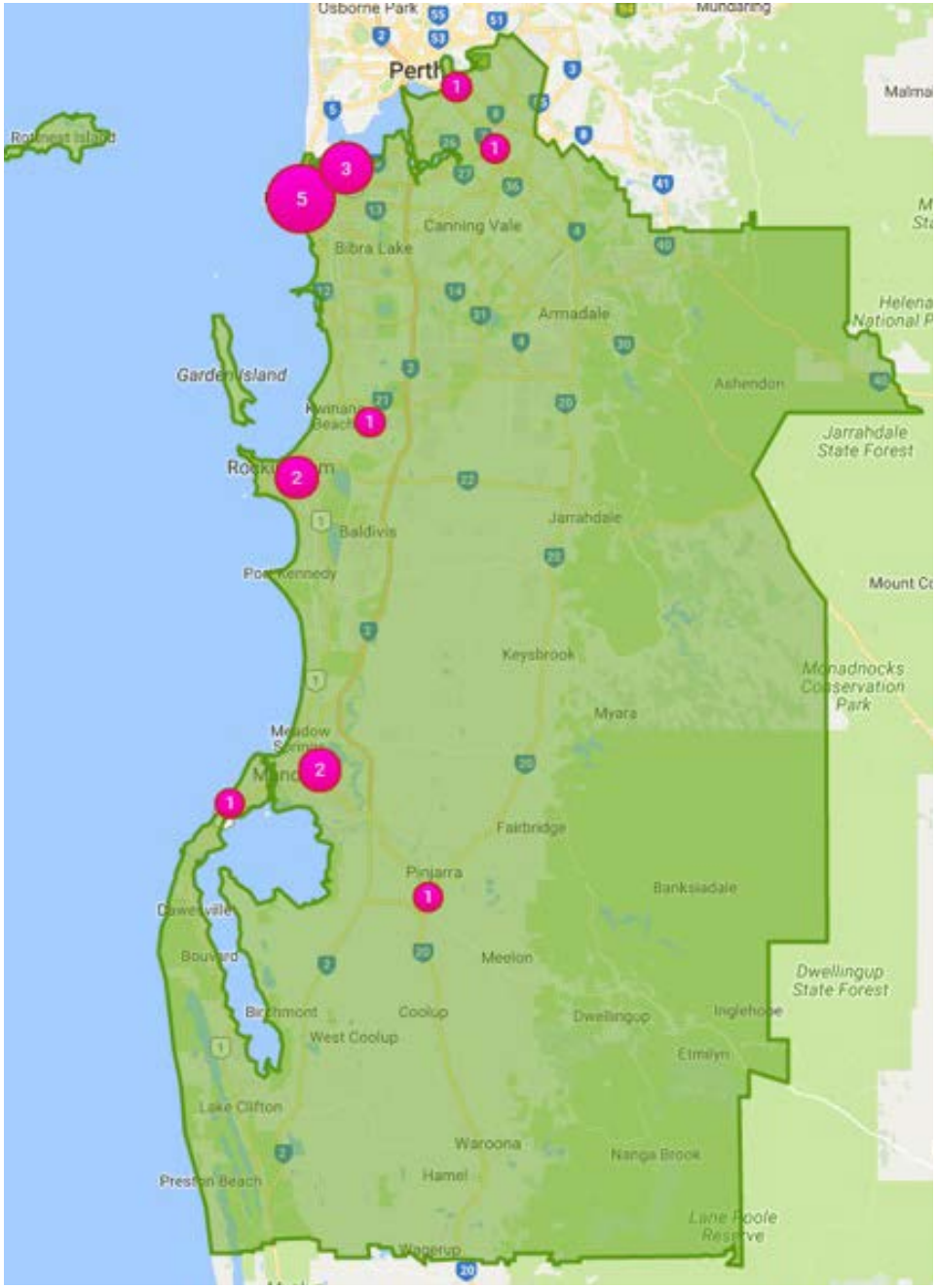
Map 5. Physiotherapy services in Perth South PHN, 2016 (NHSD, 2016).



Map 6. Podiatry services in Perth South PHN, 2016 (NHSD, 2016).



Map 7. Psychology services in Perth South PHN, 2016 (NHSD, 2016).



Map 8. Social work services in Perth South PHN, 2016 (NHSD, 2016).

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Acknowledgement

WA Primary Health Alliance would like to acknowledge the traditional owners of the country on which we work and live and recognise the continuing connection to land, waters and community.

Australian Government