WAPHA
WA Primary Health Alliance

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PERTH NORTH
An Australian Government Initiative

Population Health Needs Assessment Perth North PHN

WA Primary Health Alliance
November 2016



Acknowledgement

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

Acknowledgement to People and Country

WA Primary Health Alliance and Curtin University acknowledges the Traditional Owners and elders of the country on which we work and live and recognises their continuing connection to land, waters and community. We pay our respects to them and their cultures and to Elders both past and present.

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.

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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 North 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 coordinated and responsive primary health care system, 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 PHN North 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 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 North 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.

> *"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 23,833 episodes of preventable hospitalisations in Perth North 2013-2014"*
>
> *(National Health Performance Authority [NHPA], 2015b)*

Executive Summary

Perth North Primary Health Network: achieving better health care 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 [WHO, 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 North Primary Health Network (PHN) aims to achieve better health care and better access for people at risk of poor health outcomes by understanding the specific health needs of the population. It is recognised that health is only one part of an individual's existence, and the social, cultural and economic determinants must also be considered in responding to the needs in our community.

In this report, we explore locations of the greatest need within Perth North 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.

Evidence of Poorer Health in Some Locations Across the Region

Perth North PHN is the healthiest PHN in Western Australia (WA) with lower or similar chronic disease prevalence and self-reported health status. However, the proportion of people consuming alcohol at levels considered to be high risk to health and the proportion of people who are overweight (but not obese) were significantly higher than the Australian average in 2011-13. The prevalence of respiratory system disease is significantly higher than the Australian average in Bassendean-Bayswater, Kalamunda and Stirling in 2011-13 (Public Health Information Development Unit [PHIDU], 2016).

Figure 1. Investment activity areas, Perth North PHN.

The leading causes for chronic potentially preventable hospitalisations (PPHs) in Perth North PHN are congestive heart failure, iron deficiency anaemia, diabetes complications and COPD. PPHs due to dental conditions in Perth North PHN (423 per 100,000 people) was the highest reported rate among metropolitan PHNs in Australia, and the Australian average (273) in 2013-14 (NHPA, 2015b).

> *"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)*

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

Priorities for Action

Perth North PHN — in consultation with health professionals and community representatives — identified the following priority needs within the community:

- Keeping people well in the community through a continued relationship with primary care.
- 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 Perth North PHN experiences less socio-economic disadvantage than the Australian average; however, there are pockets of disadvantage. For those people who experience higher level of disadvantage, accessing the right health care can be more challenging as appropriate, affordable and targeted services for vulnerable groups may not be available.

Understanding our community: key facts about the population

Migration and Population Flows

Perth North 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 North 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 is may influence the number of services and practitioners in local government areas (LGA) with a high number of businesses, such as Perth. A higher proportion (16.7%) of the population are immigrants born in predominantly non-English speaking countries (PHIDU, 2016). This is higher than the Australian and WA averages.

Population Growth

The population of Perth North PHN is rapidly expanding, and is expected to increase from 969,950 in 2011 to 1,359,470 by 2026 (Western Australian Planning Commission, 2015).

Wanneroo is the fastest growing local government area in WA and the fifth fastest growing in Australia (City of Wanneroo, 2015).

Population Demographics

The highest proportion of Perth North PHN residents were aged 20-49 years (43.9%). 12.1% were over the ages of 65 years, 8.3% were over 70, and 5.5% were aged 75 years and older (ABS, 2011a). In 2015, the highest proportions of Perth North residents lives in Stirling (21%), Wanneroo (18%) and Joondalup (16%), and Peppermint Grove (13%), Nedlands (11.6%), and Mosman Park (11.2%) had the highest proportion residents aged 70 years and older (Australian Bureau of Statistics [ABS], 2015b).

Emerging Populations

The majority of growth (55% of total) is occurring in the 'Northern Coastal Growth Corridor' which encompasses Alkimos, Eglinton, Yanchep and Two Rocks.

The LGA of Swan is also growing rapidly, due to expansion in West Swan, a designated primary residential growth area (ABS, 2015).

Identified Locations of Highest Health Needs:

- Bassendean-Bayswater
- The Hills (Mundaring/Kalamunda)
- Perth
- Swan
- Stirling
- Wanneroo

Aboriginal People

Perth North PHN has the lowest proportion of Aboriginal people in WA, at 1.6% of the population. Swan (3.4%), Bassendean (3.1%) and Mundaring (3%) have the highest proportion of Aboriginal people in the Perth North PHN (PHIDU, 2016).

Homeless People

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

In Perth North PHN, the highest number of recorded homeless people was in Perth (909), Stirling (419), and Wanneroo (302) (ABS, 2011a).

Disadvantaged Groups

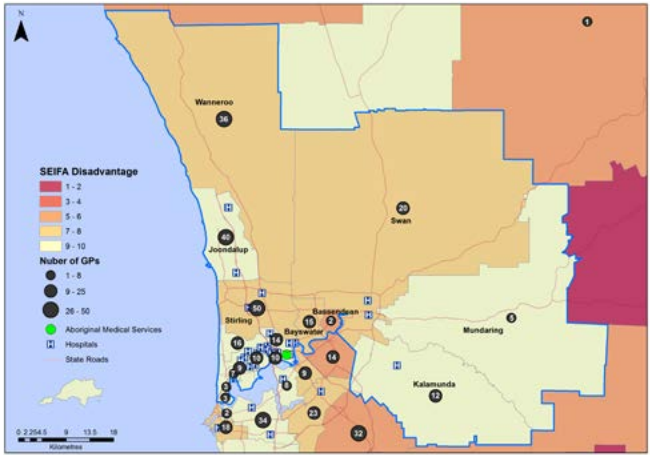
Generally Perth North PHN experiences lower level of disadvantage than the Australian population. However there are still pockets of disadvantage with lower Socio-Economic Indexes for Areas (SEFIA) scores, higher rates of risky behaviours (drinking, smoking, illegal drug usage); and increased prevalence of physical and mental health conditions. In 2011, the LGAs experiencing the most disadvantage were Bassendean and Swan (ABS, 2011a).

Our understanding of the people living in different Perth North 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 North PHN: demand and supply

People with Higher Health Needs

- There is a higher number of culturally and linguistically diverse (CALD) populations in the Perth North PHN (16.7%) than the WA (14.45%) and Australian (15.7%) averages. The Perth LGA has a considerably large proportion of its population who are from CALD backgrounds (33.8%) (PHIDU, 2016).
- In 2012, 3.4% of the Perth North PHN population was 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 (PHIDU, 2016).
- In Perth North PHN, 9.4% of residents aged 15 years and over were caring for persons with a disability in 2011. The highest proportion (11%) was in Nedlands (PHIDU, 2016).
- While the overall smoking and obesity rates are similar to the State and National averages, Swan has significantly higher proportion of current smokers and obese residents.



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

Local Government Area	Population
Stirling	227,566
Wanneroo	188,785
Joondalup	167,891
Swan	133,303
Bayswater	70,472
Kalamunda	60,830
Mundaring	40,015
Vincent	37,461
Cambridge	28,250
Nedlands	23,084
Perth	21,092
Subiaco	20,423
Bassendean	16,101
Claremont	10,706
Mosman Park	9,547
Cottesloe	8,602
Peppermint Grove	1,646
Total	1,065,774

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

The map above indicates that there is a mismatch between locations of socio-economic disadvantage to the number of GPs across the Perth North 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.

Access to Timely Health Care

Across Perth North PHN, there exists equity differences regarding access, cost and connectivity of services. The proportion of people in Perth North PHN who saw a GP felt that they waited longer than acceptable to get an appointment (24%) was higher than the Australian average (21%) (NHPA, 2013).

In 2013, one in three (30%) of people in Perth North PHN reported having difficulty accessing health services. The barriers included:

- Did not access internet at home in the past 12 months (22.9%)
- Cannot afford medical consultation (12.6%)
- Could not afford prescription medication (10.4%)
- Cannot get to places with transport (2.7% of adult population).

Particular limitations were experienced in Swan, Wanneroo and Bayswater due to an inability to afford medical services and prescriptions (NHPA, 2013).

There is one Aboriginal Community Controlled Organisation with this services primary practice location located in the Perth North PHN region, with this service having three service sites and a residential facility mainly supporting renal patients in the region.

> *"Perth North PHN covers a land area of 3,029.1 km², and consists of 17 LGAs, ranging from 1043km² in Swan, to 1.1km² in Peppermint Grove. Over half of the population growth is occurring in the LGAs of Wanneroo and Swan"*
>
> *(ABS, 2015)*

Region and Population Characteristics

The Perth North PHN population profile

Who lives in Perth North PHN?

The estimated resident population of Perth North PHN is 1,065,774 which is 41% of WA's population. This consists of a high proportion of immigrants from both English speaking and CALD backgrounds.

There was a higher number of culturally diverse populations in the Perth North PHN (16.7%) than WA (14.45%) and Australian (15.7%) averages in 2011. Over 30% of all culturally diverse people in the PHN resided in the Perth CBD LGA. In 2011, the highest percentage of people born in non-English speaking backgrounds living in Perth North PHN were from India, followed by Malaysia and China (PHIDU, 2016).

In 2015, it was estimated that 1.6% of Perth North PHN identified as Aboriginal (17,502 people) (PHIDU, 2016; ABS, 2015).

Almost one in three (31.1%) Perth North PHN residents were aged 20-39 years in 2014. 12.5% were over the ages of 65 years, and 5.3% were aged 75 years and older. A higher proportion of older adults (65 years and older) lived in Claremont, Mosman Park and Peppermint Grove in 2014 (PHIDU, 2016).

Projected Growth of the Population

The majority of growth (39% of total projected growth from 2011 to 2026) is occurring in Wanneroo LGA, the 'Northern Coastal Growth Corridor' which encompasses Alkimos, Eglinton, Yanchep and Two Rocks. The LGA of Swan, Vincent and Perth are also expected to grow rapidly (Western Australian Planning Commission, 2015). Despite the estimated growth in Perth North's ageing population, the proportion of aged care places (per 1,000) is not showing the same growth pattern (ABS, 2015; Australian Institute of Health and Welfare [AIHW], 2016d).

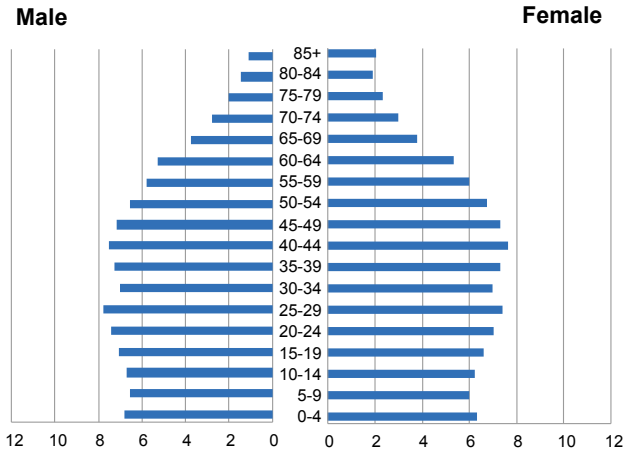


Figure 3. Population structure, Perth North PHN, 2011 (ABS 2011a).

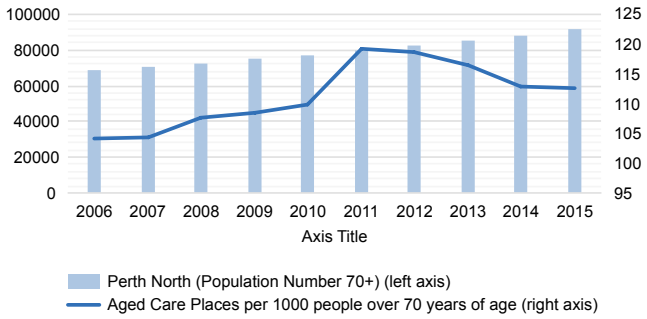


Figure 4. Growth of population aged 70 years and over compared with aged care places per 1,000, in Perth North PHN 2006-2015 (ABS, 2015; AIHW, 2016d).

Total population (ERP 2014): 1,060,011

Aboriginal population (ERP 2015): 17,509

Population aged 65+ (ERP 2014): 12.5%

Immunisations: 90.9% of children in Perth North PHN are fully immunised at five years of age. The WA average was 91.1%, and the Australian average was 89.3% (PHIDU, 2016).

Breast Cancer screening: 56.1% of women aged 50-74 years old in Perth North PHN participated in breast cancer screening in 2014 and 2015 (AIHW, 2016c). This was lower than the BreastScreen Australia program participation target of 70% (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 national average being 1,000. For Perth North PHN, the average index score is above the Australian average (PHIDU, 2016).

The least socio-economically disadvantaged areas in the PHN are Peppermint Grove (1,126), Cambridge (1,117), Cottesloe (1,116) and Nedlands (1,115). The most socio-economically disadvantaged areas are Bassendean (1,004), Swan (1,011), Bayswater (1,020) and Wanneroo (1,026) (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 North PHN

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

1.6% of the population in Perth North PHN identified as Aboriginal in 2015, which is the lowest proportion in WA. Swan (3.4%), Bassendean (3.1%) and Mundaring (3%) had the highest proportion of Aboriginal people in Perth North PHN during the same year (PHIDU, 2016).

Although the proportion of Aboriginal people is lower than other PHNs in WA, there are still over 17,000 Aboriginal people living across the region who need access to culturally appropriate services.

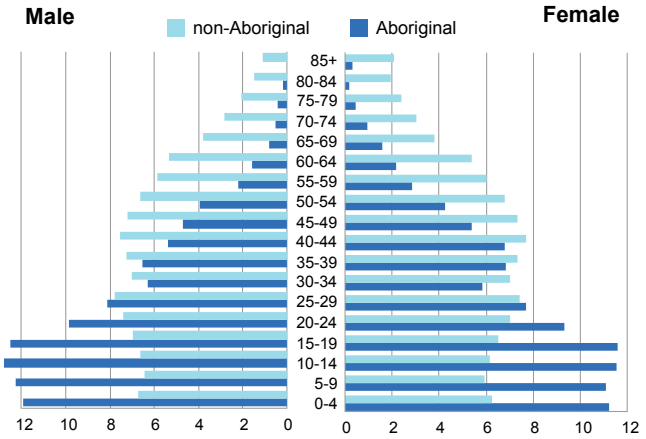


Figure 5. Estimated Aboriginal population structure, Perth North PHN by LGA, 2011 (ABS 2011a).

Age Distribution

The largest age group for both male and female Aboriginal people in 2015 was 15-19 year olds (12.1%), followed by 0-4 (11.2%), 5-9 (10.9%) and 20-24 (10.8%) year olds (PHIDU, 2016). There is a noticeable decrease in the Aboriginal population over 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 COPD (Australian Indigenous HealthInfoNet, 2013).

Region	Number of Aboriginal people	Proportion of Aboriginal people (%)
National	729,048	3.1
State	95,707	3.6
Metro	38,397	1.8
Perth North PHN	17,509	1.6
Bassendean	524	3.1
Bayswater	1,132	1.6
Cambridge	66	0.2
Claremont	58	0.5
Cottesloe	10	0.1
Joondalup	1,100	0.6
Kalamunda	1,252	2.0
Mosman Park	164	1.7
Mundaring	1,220	3.0
Nedlands	47	0.2
Peppermint Grove	10	0.6
Perth	177	0.8
Stirling	3,314	1.4
Subiaco	115	0.5
Swan	4,665	3.4
Vincent	258	0.7
Wanneroo	3,397	1.7

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

Determinants of Health

Socio-economic factors such as overcrowded housing, low household income and high imprisonment rates expose Aboriginal people to higher risk of poor physical and mental health. In addition, access to mainstream health services is more difficult for this population group due to socio-economic disadvantage, poor record keeping and a lack of culturally appropriate mainstream health services (Australian Health Ministers' Advisory Council [AHMAC], 2015).

> *"The 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 and relationships (National Aboriginal Health Strategy, 1989). It is important that healthcare providers are appropriately trained and understand this concept.

Of the Perth North 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).

16.7% of people living in Perth North PHN were born in predominantly non-English speaking countries, which was higher than the WA (14.4%) and Australian (15.7%) averages in 2011 (PHIDU, 2016). An estimated 2.5% 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 North PHN: 19% were born in Australia, 18% in Vietnam, 9% in Italy and 8% in China. The LGAs with the largest number of residents with low English proficiencies are Stirling (more than 7,500), Wanneroo (more than 4,500), Swan and Bayswater (more than 2,800) (ABS, 2011a).

Refugees

As well as experiencing the same health concerns 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, 2,943 humanitarian migrants were settled into Perth North PHN. The highest number resided in Stirling (1,426), Wanneroo (691), and Swan (296) (Department of Social Services [DSS, 2015]).

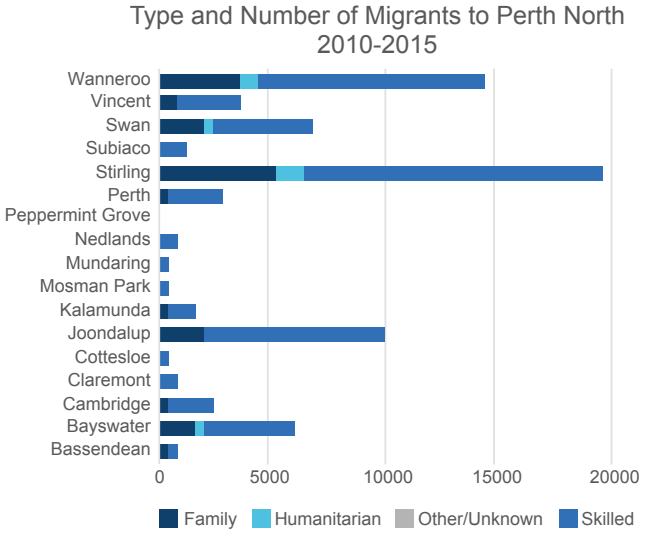


Figure 7. Type and number of migrants, Perth North PHN by LGA , 2010-15 (DSS, 2014).

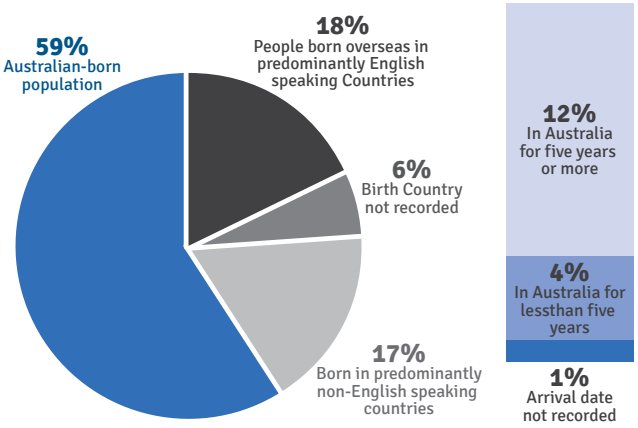


Figure 8. Country of birth, English proficiency and years since arrival, Perth North PHN, 2011 (PHIDU, 2016).

Homeless People

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

Of all homeless people in WA in 2011, 35% were Aboriginal people. This proportion is large, as the Aboriginal population accounts for only a small proportion of the general population.

Most people who were 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 North PHN, the highest number of recorded homeless people was in Perth (909), Stirling (419), and Wanneroo (302) (ABS, 2011a).

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 North PHN include: fly-in fly-out (FIFO) workers, people with disabilities, carers, the prison population and the lesbian, gay, bisexual, transgender intersex and questioning (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 diseases in the risk-rising population

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

17% of adults in Perth North PHN are current smokers.
(PHIDU, 2016)

26% of adults in Perth North PHN are obese (37% are overweight).
(PHIDU, 2016)

52% of adults in Perth North PHN are not sufficiently active.
(ABS, 2013b)

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

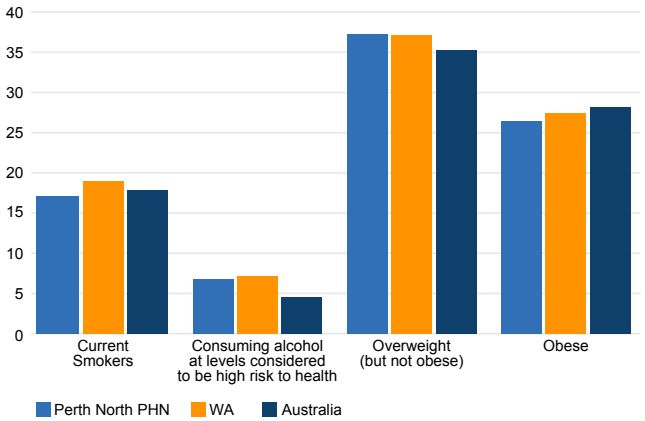


Figure 9. Prevalence of overweight/obesity, smoking and risk alcohol consumption, Perth North PHN, WA and Australia, 2011-2013 (PHIDU, 2016).

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, 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, obesity, can lead to the development and progression of chronic conditions.

In 2011-13, 64% of the population in Perth North 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 (19%) and females (15%) for Perth North PHN were lower than WA (males: 21% females: 17%) and Australian (males: 20% females: 16%) averages (PHIDU, 2016).

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

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

Rising-Risk Population

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

To stop the progression of disease and the occurrence of multiple diseases, it is important to target the risk factors and behaviours that are the ultimate cause of chronic disease. Changing health behaviours can slow, stop or even reverse disease in the rising-risk population.

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 disease.

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

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 disease, with one in five affected by multiple chronic diseases (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.

Rates of musculoskeletal and respiratory system diseases are relatively high in Perth North PHN. Residents across Perth North PHN are at higher risk for heart disease with high cholesterol and circulatory system diseases. In Perth North PHN, the LGAs with the largest number of chronic conditions in 2011 were Stirling (195,853), Joondalup (146,191) and Wanneroo (132,008) (Figure 11) (PHIDU, 2016).

Diabetes Mellitus

It is estimated that in Australia, for every five diagnosed cases of diabetes, there are four undiagnosed/delayed presentation cases (Baker, 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 underestimation of the total diabetic population.

In 2016, 4.2% of the Perth North PHN population were registered diabetics for type 1, type 2 or gestational diabetes (National Diabetes Services Scheme, 2016). This is slightly different than the estimated rate in 2011-13 of 5.5% (PHIDU, 2016). To achieve consistency among rates of chronic condition the later proportion has been used.

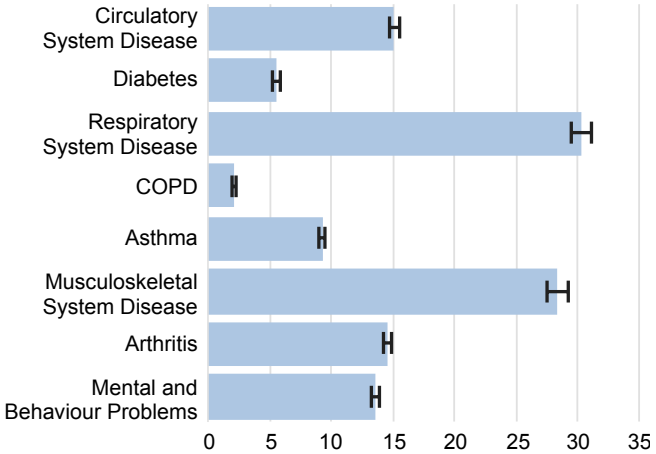


Figure 10. Rate of chronic conditions, ASR per 100 population, Perth North PHN, 2011-13 (PHIDU, 2016).

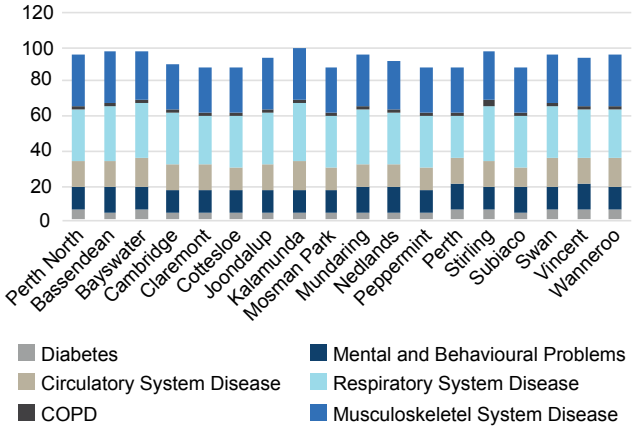


Figure 11. Rate of chronic conditions, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

Life Expectancy

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).

> **43%** *of Perth North residents reported living with a chronic condition in 2013-14*
>
> *(NHPA, 2015a)*

During 2009-2013, the median age at death for residents across Perth North PHN was 81 years old. The lowest median age at death was in Mundaring (76 years), Swan, Perth and Kalamunda LGAs (77 years) (PHIDU, 2016). Typically, males die earlier than females; during 2009-2013, the median age at death was 78 years for males and 84 years for females. The lowest median age at death was 71 years (Perth LGA) for males, and 79.5 years (Kalamunda) 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 condition in the community and outside the hospital setting.

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

21% of adults in Perth North Eastern suburbs 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)

> *"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)*

Potentially Preventable Hospitalisations due to Chronic Conditions

44.1% of all PPHs in metropolitan WA were due to chronic conditions in 2015-16 (DoH, 2016d). In Perth North PHN, the most common chronic PPHs are from congestive heart failure, iron deficiency anaemia, and diabetes complications (NHPA, 2015b).

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

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 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 (AIHW, 2015a), including PPHs.

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 & Dagogo-Jack, 2011). CVD, especially high blood pressure, is one of the major causes of chronic kidney disease (AIHW, 2016b).

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, with poor oral health being associated with poor physical health (Garcia et al, 2000). More than 4,300 PPHs in Perth North PHN during 2014-15 were due to dental conditions. It is the most frequent cause and has contributed to 32% 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

In Australia, the terms "mental illness" describes a wide spectrum of mental health and behavioural disorders, which can vary in 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 Perth North PHN, an estimated 75,684 adults 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 Bassendean (11.8%), Bayswater (10.8%), Stirling (10.6%) and Wanneroo (10.4%) (PHIDU, 2016).

Diagnosed Disorders

During 2011-2013, over 132,100 people were living with diagnosed mental health or behavioural conditions in Perth North PHN (PHIDU, 2016). There were 52,864 GP Mental Health Care Plans prepared in Perth North PHN in 2012-13 and 68,360 in the 2014-15 financial year (DoH, 2016c). 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.

Almost half (36,926) of the plans prepared in Perth North PHN in the 2014-15 financial year were for residents in Joondalup, Perth and Wanneroo. A considerably high increase (59%) of GP mental health assessments was experienced in Wanneroo during the 2012-13 and 2013-14 financial years (DoH, 2016c).

The dementia prevalence in Perth North PHN (over 9,000 cases) is the highest in WA, with the most cases occurring in Stirling (2,524) in 2010. It is estimated that Wanneroo will have the highest rate of dementia in 2050 (Alzheimer's Australia WA, 2015).

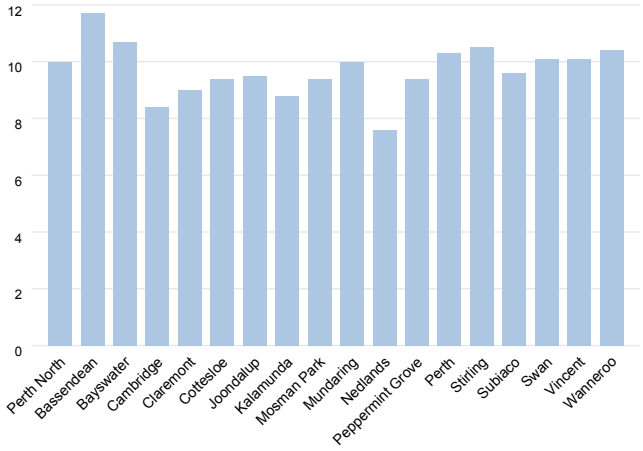


Figure 12. Estimated adult population (18 years and over) with high or very high psychological distress, ASR per 100 population, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

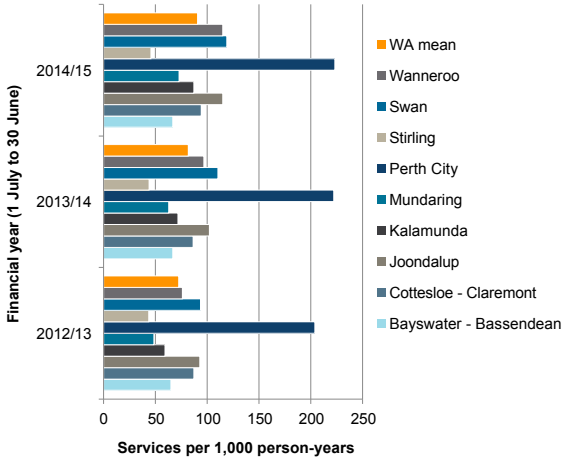


Figure 13. GP mental health assessments (Medicare Benefits Schedule Group A20) per 1,000 person-years, WA and Perth North PHN by SA3, 2012-13 to 2014-15[1] (Department of Human Services [DHS], 2016).

People with High Impact Psychosis

The Survey of High Impact Psychosis conducted in the Perth North metropolitan area found that of people who were diagnosed with a psychotic disorder in 2012, more than half experienced schizophrenia (59.2%). The average age for onset of all psychotic disorders is 20-23 years of age (Morgan et al., 2013).

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

One in three (33.2%) people with a diagnosed psychotic disorder had visited an ED in the Perth North metropolitan area within the past year. Of these people, almost four in five (78%) had visited a GP for either their mental health (24.8%) or physical health (73.2%). These rates were lower than the Australian comparisons for both ED attendances (41%) and GP visits (88.2%) and for both mental health (49.3%) and physical health (76.3%) reasons (Morgan et al., 2013). This shows an increase in GP utilisation, rather than ED attendance or PPHs.

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

Mental Health Hospitalisation Rates

Mental health hospitalisations were highest amongst 25 to 44 years and the 85+ age groups for both men and women. Rates for mental health admissions were higher than State and National averages. ED attendances were highest in Perth CBD and increasing in the Joondalup-Wanneroo area (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.

1. Locality of MBS item groups are reported are based on service provider's street address rather than the patient's residential address. This means service to population ratio is skewed towards localities where there are high numbers of providers (the high rate of GP mental health assessments MBS utilisation in Perth City SA3 is from Perth residents as well as by residents from other localities).

Suicide risk across the PHN

Suicide Risk

Mental health and suicide risk are intrinsically linked to the social determinants of health and socio-economic disadvantage experienced by at-risk populations. Socio-economic factors may influence behavioural factors like 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 was 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).

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

Suicide and CALD populations

A large proportion of the Perth North PHN population are from CALD backgrounds, with 16.7% from non-English speaking countries in 2011 (PHIDU, 2016). Along with the considerable stressors of migrating to a new country, suicide and poor mental health may be stigmatised or 'taboo' in some cultures, which may influence a migrant's willingness to seek help (WA MHC, 2016). Only 5.6% of people born overseas who spoke a language other than English at home accessed a subsidised mental health-related service in Australia during 2011. This was considerably lower than people born in Australia and who spoke English (8.0%) (ABS, 2011b). The Australian Suicide Prevention Strategy acknowledges the need to provide culturally appropriate services for CALD people to reduce their risk of suicide (WA MHC, 2016).

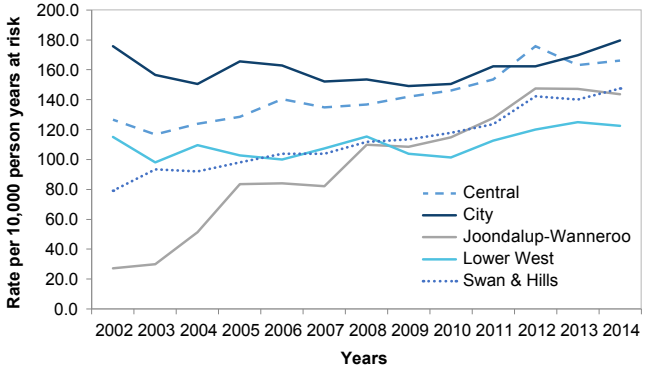


Figure 14. Rate of mental health-related ED attendances per 10,000 person-years at risk, Perth North PHN, 2002-2014 (NMHS) (DoH, 2015a).

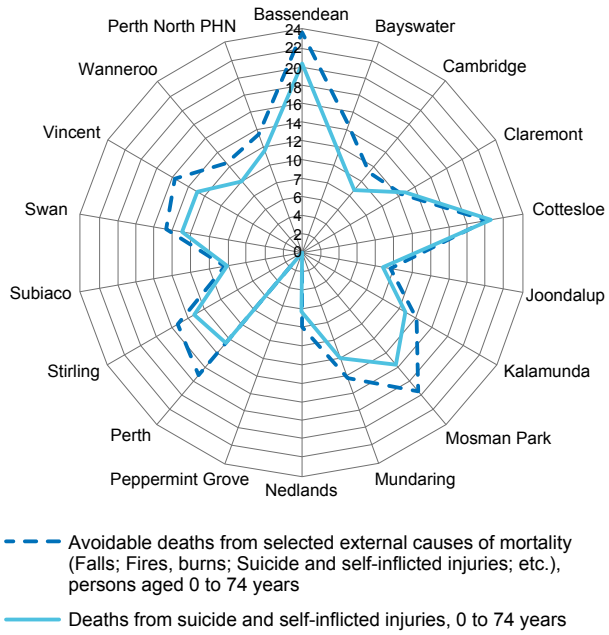


Figure 15. Deaths from suicide and self-inflicted injury (0-74 years), Perth North PHN by LGA, 2009-13 (PHIDU, 2016).*

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)

Suicide Risk in Perth North PHN

Several areas in Perth North PHN had a rate of death from suicide and self-inflicted injuries (in people 16 to 74 years) that was above the WA average (13.3 per 100,000), including Bassendean (20.6), Cottesloe (20.5), Mosman Park (15.7), but are not statistically significant due to small sample size (PHIDU, 2016). Stirling is the only LGA that is statistically significant, and higher than the Australian average, at 13.3 (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.

*Suicide: please refer to data limitations on page 57.

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 tranquilizers 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).

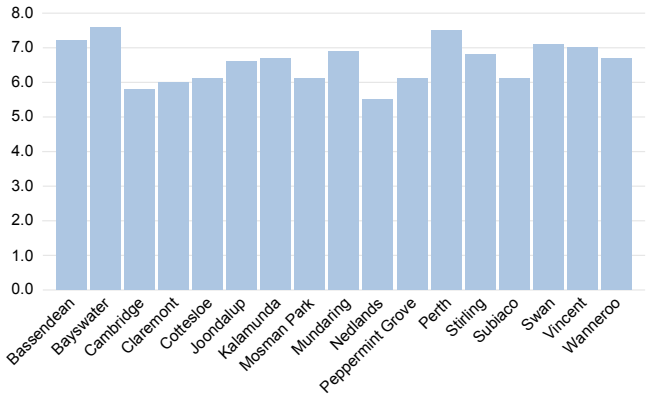


Figure 16. Estimated adult population (18 years and over) consuming alcohol at high risk levels, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

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 Bayswater and Perth CBD, followed by Bassendean, Swan and Vincent. Alcohol-related hospitalisations for WA have consistently increased. For the period 2007-11, north metropolitan residents were hospitalised 29,816 times for alcohol-related causes, costing $186,691,694 for 165,106 bed days (Drug and Alcohol Office, 2014).

1 in 4 Western Australians are drinking alcohol at a level that is high risk of lifetime 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).

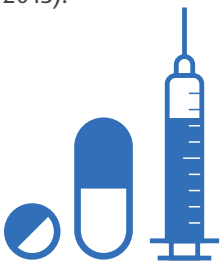
> *"People experiencing severe and multiple disadvantage have often grown up in worlds where alcohol or drug use, violence, or offending are normal. How much does it take for someone to recognise and challenge these norms? Services need to not just focus on the individual, but also support whole families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

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 (WA de-identified data source, 2016).

Methamphetamine

WA has the highest levels of methamphetamine use. 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 was significantly higher than the proportion for Australia (3.8% and 2.1%, respectively) (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. Bassendean, Bayswater, Mundaring, Perth, Stirling, Swan, Vincent and Wanneroo have harmful alcohol rates equal to or higher than the average for Perth North PHN, and a rate of psychological distress equal to or higher than the average for Perth North (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 health conditions and associated comorbidities.

Service Mapping and Utilisation Summary

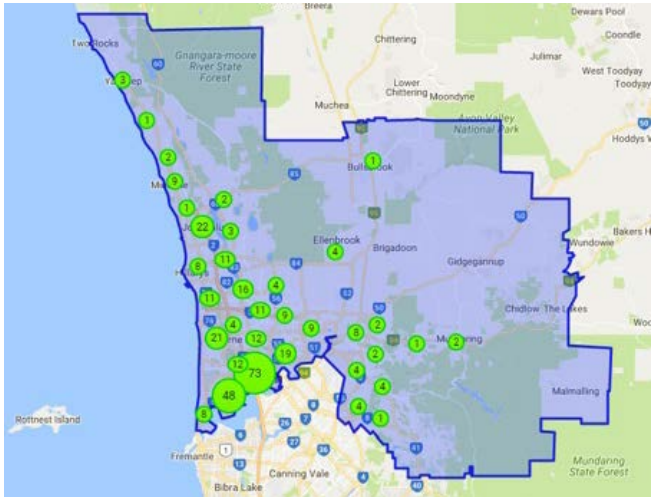
Access to primary health services

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 250 general practices in the Perth North PHN (National Health Service Directory [NHDS], 2016). LGAs with the highest population number per general practice during business hours are Bassendean, Mundaring and Swan, indicating poorer supply (NHSD, 2016; ABS, 2015).

One quarter (24%) of the Perth North PHN residents who saw a GP waited longer than they felt acceptable in 2013-14 (NHPA, 2013). This may be reflective of the distribution of GPs across the region. Over 30% of people in Perth North PHN have difficulty accessing health services, including:

- 12.6% could not afford medical consultation
- 10.4% could not afford prescription medication
- 2.7% cannot get to places due to transport
- 22.9% did not access internet at home in the past 12 months.



Map 2. GP services, Perth North PHN, 2016 (NHDS, 2016).

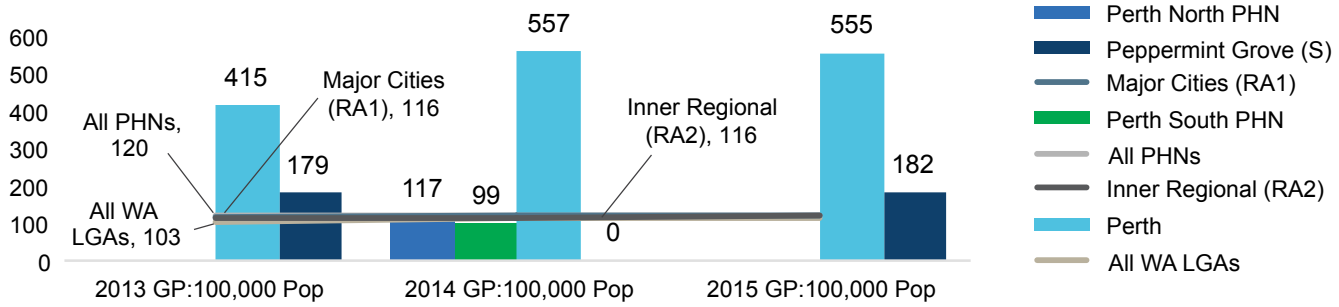


Figure 17. GP to population ratio, per 100,000 population, Perth North PHN, 2014 (DoH, 2015b; ABS, 2015).

Swan, Wanneroo and Bayswater had a higher than WA average of adults who limited their access to medical services and prescriptions due to unaffordability (NHPA, 2013).

Workforce

The supply of GPs and nurses was similar to major cities and inner regional Australia while higher for pharmacist, dentists, physiotherapists, podiatrists, psychologists, occupational therapists in 2014. There is a tendency of clustering of registered clinicians practising around Perth, Subiaco and Nedlands LGAs.

In 2015, the highest numbers of GPs registered to practise were found in the LGAs of Joondalup, Stirling, Wanneroo, Swan and Perth; however, Perth, Nedlands, Subiaco and Claremont had the highest GP to population ratios (DoH, 2015b; ABS, 2015). LGAs with consistently low GP to population ratios between 2013 and 2015 were Bassendean, Vincent, Wanneroo, Mundaring, Kalamunda, Swan and Stirling (DoH, 2015b; ABS, 2015). In 2014, the GP to population ratio was highest in Perth, above the rate of all PHNs and major Australian city average. However, Bassendean, an area of high health and service needs, had the second lowest GP to population ratio placing this LGA under considerable strain from a lack of services (DoH, 2015b; ABS 2015b).

There were 1,335 registered dental practitioners in Perth North PHN in 2014. The LGAs with the highest numbers of dental practitioners were Stirling (227), Joondalup (211), Perth (175) and Nedlands (128) (DoH, 2015b). However, Perth and Nedlands had the highest dental practitioners to population ratios (DoH, 2015b; ABS, 2015). Perth North PHN had higher dental practitioners to population ratio compared to the National average (DoH, 2015b; ABS, 2015), yet in 2013-14 this PHN had the second highest rate of dental condition PPHs among PHNs in Australia (NHPA, 2015b). Further investigation is required to explain this inconsistent finding.

Use of primary care services

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

Access to Primary Care

The rate of GP attendances (vocational and non-vocational registered) in the Perth North PHN was 35.4 services per 100 population in 2014-15 (Figure 18), above the medium of all PHNs in Australia; however, they are less likely to be consultations for longer durations, and/or outside of consulting rooms. Service per population ratio for GP health assessment was comparably lower than other PHNs, but the ratio for GP mental health was higher than most PHNs (Figure 18) (DoH, 2016c).

MBS utilisation of nursing and allied mental health services ranked high among the PHNs, while allied health MBS utilisation was low (Figure 19). The practice nurse/Aboriginal health worker item was lower than most PHNs in Australia (DoH, 2016c). This may be a reflection of the lower Aboriginal population in the PHN.

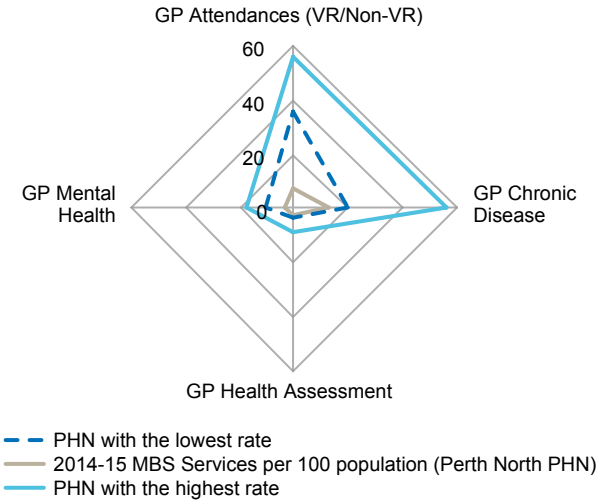


Figure 18. MBS GP services per 100 population, Perth North PHN, 2014-15 (DoH, 2016c).

After Hours GP Services

In 2015/16, 2,044,061 after hour services were delivered in the Perth metropolitan area (Department of Human Services, 2016). 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).

43% of the general practices in the 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). Kalamunda, Mundaring, Wanneroo 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 Wanneroo and Mundaring are also higher than the Perth North PHN average (NHPA, 2015b).

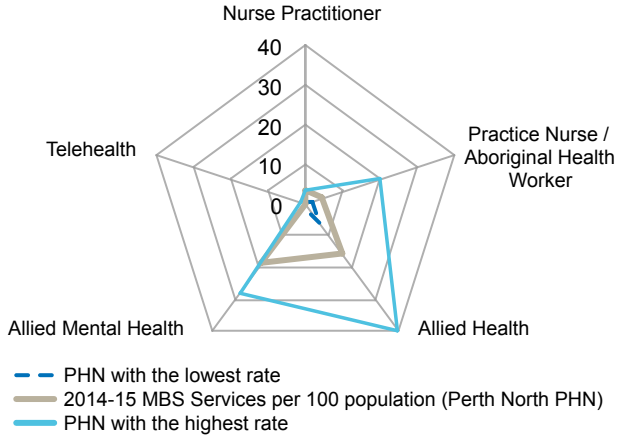


Figure 19. MBS services per 100 population, Perth North PHN, 2014-15 (DoH, 2016c).

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.

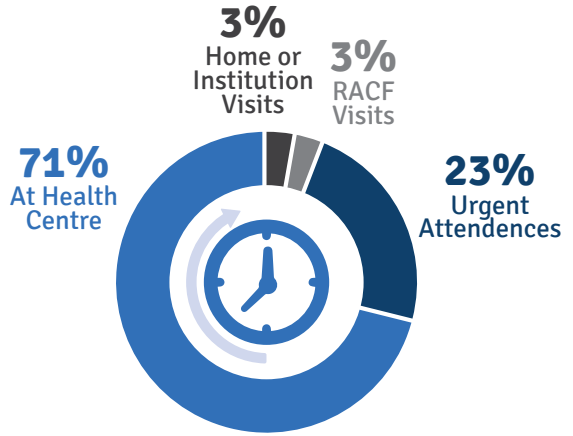


Figure 20. Proportion of MBS after hour services in Perth Metropolitan, July 2015-June 2016 (DHS, 2016).

Cancer Screening Participation

Perth North PHN had similar rates to WA for breast, cervical and bowel cancer screening participation for 2014-2015, (AIHW, 2016c). Swan had rates lower than Perth North PHN and the State in all three categories.

Participation rates % 2014-2015	Perth North PHN	WA
Breast screening	56.1	55.2
Cervical screening	58.1	55.7
Bowel screening	41.5	41.0

Hospitalisations: potentially preventable or avoidable emergency presentations

PPHs are hospitalisation that could have been avoided by appropriate and accessible primary health care. There 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 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, a 3% increase from 2010-11. 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 North PHN had one of the lowest PPH rates among the PHNs in Australia, but there were still 23,833 episodes of PPH in 2013-14 (NHPA, 2015b). The leading chronic causes for PPHs in Perth North PHN were congestive heart failure, iron deficiency anaemia, diabetes complications and COPD.

PPHs due to acute conditions are typically higher in the rural and remote areas compared to metropolitan PHNs in Australia. Perth North ranks high among metropolitan PHNs in acute PPHs with the most frequent causes being dental conditions, and kidney and urinary tract infections. PPHs due to dental conditions in Perth North PHN (423 per 100,000 people) was the highest reported rate among metropolitan PHNs in Australia, and the Australian average (273) in 2013-14 (NHPA, 2015b).

Emergency Department Presentations

Perth North PHN had similar ED presentations (25,788 per 100,000) to the average for capital cities in Australia (26,049 per 100,000) in 2012-13 (PHIDU, 2016). This has increased by 3.6% between the 2009-10 and 2013-14 financial years (AIHW, 2015e). Relative utilisation is an age/sex standardised comparison of attendance rates compared to the Australian average (100). Areas with a relative utilisation over 100 have higher than average ED attendance rates (DoH, 2016a).

In 2013-14, Perth North PHN had a lower semi-urgent (triage 4) ED attendance rates than the Australian average, with a relative utilisation of 94 and 118,502 presentations. The non-urgent (triage 5) ED attendance rate was also substantially low, with a relative utilisation of 46 and 12,439 presentations. These were potentially preventable. All areas within Perth North PHN had an average utilisation of non-urgent ED attendance rates that was lower than the Australian average, while only Wanneroo had higher than the Australian average of semi-urgent ED utilisation (DoH, 2016a).

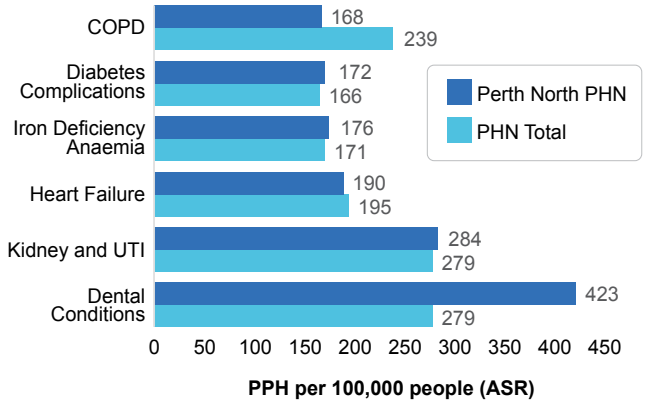


Figure 21. Leading Causes of PPHs, per 100,000 population, Perth North PHN and Australian averages compared, 2013-14 (NHPA, 2015b).

After Hours ED Presentations

Stakeholder feedback indicates that some health consumers in WA have limited knowledge of how to access after hours GP services with ED and ambulance services often the default option for residents (Curtin University, 2016).

Trauma, neurological and abdominal conditions make up over 60% of all ambulance presentations in Perth North PHN in 2015 (St John Ambulance, 2016), while ear/nose/throat (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 PPHs 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 North PHN Priority Locations of Greatest Health Needs

What Defines Priority Locations of Greatest Health Needs?

As part of our commissioning activity, Perth North 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 do not always have access to appropriate health care in the region.

The methods used to identify areas in the Perth North PHN have been determined through comparing indicators to whole-of-region, State and National 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 State 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)*

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.

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.

While overall the Perth North PHN is a relatively high ranking socio-economic region, there are local locations of low socio-economic, high disadvantage, high rates of chronic conditions and risky behaviours leading to long-term poor health. In addition, some locations do not have access to an 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.

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.

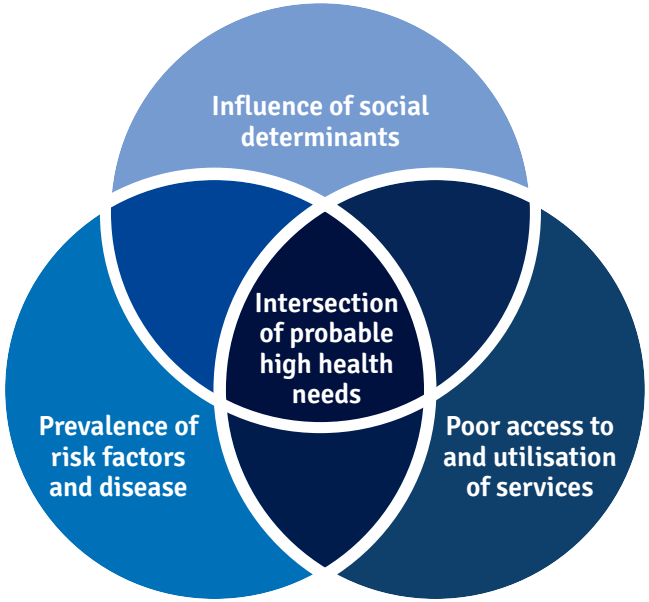


Figure 22. Domains of intersecting determinants of probable high health needs.

> *"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)*

Following our analysis and existing available evidence, we have identified 8 LGAs across the PHN as priority locations of greatest health needs. However, it should be emphasised that this is not a conclusive list. It is likely that there will be other locations across the PHN of unmet health needs affecting those individuals that live there.

2. The border of the Perth 'location' is the equivalent of Perth SA3. This includes the LGAs of Vincent (34.2%), Perth (17%), Stirling (18%), Subiaco (16%), Cambridge (13%), Bayswater (0.8%) and Nedlands (0.1%). In an attempt to avoid confusion, the Perth LGA has been referred to as 'Perth CBD'.

Bassendean-Bayswater: health needs

The Bassendean-Bayswater location comprises of the two LGAs with respective names. It is estimated that 8% of the Perth North PHN population lived in this location in 2015; 10% of the residents were older than 70 years of age and 23% were born in predominantly non-English speaking countries. Bassendean-Bayswater have one of the highest mortality rates from circulatory disease in WA. The proportion of residents identifying as Aboriginal descent was 3.1% in Bassendean and 1.6% in Bayswater.

Health Outcomes

The median age at death in Bassendean (77 years of age) was lower than Bayswater (79 years of age), WA (76 years of age), and Australian (78 years of age) averages (PHIDU, 2016).

Bassendean had the highest avoidable death from suicide and self-inflicted injuries in 2009-13, at 20.6 per 100,000 people in the Perth North PHN. This is compared to 13.3 in WA and 10.8 in Australia. Bassendean also had one of the highest avoidable death from respiratory system diseases, diabetes in the PHN, significantly higher than WA 's rate of death from circulatory conditions. 15.4% of the adults in Bassendean reported to have fair or poor health, which is higher than State and National averages (PHIDU, 2016).

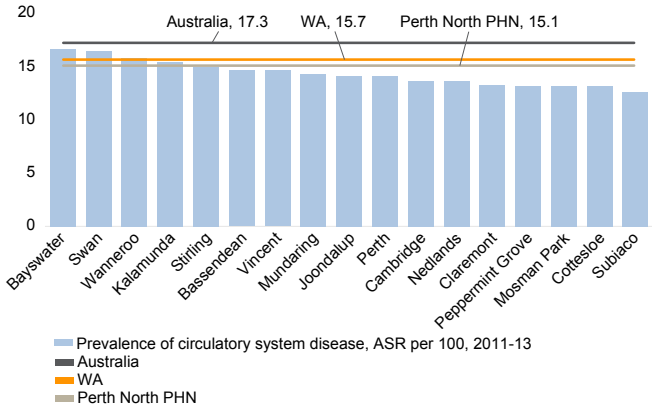


Figure 23. Highest avoidable mortality from circulatory disease, ASR per 100,000, Perth North PHN by LGA, 2009-13 (PHIDU, 2016).

Bayswater LGA had the highest avoidable mortality from circulatory disease, which was significantly above the WA and Australian rates in 2009-2013. Avoidable mortality from breast cancer in Bayswater was also higher than State and National averages. 15.1% of adults in Bayswater reported to have fair or poor health, this is significantly higher than State and National average. (PHIDU, 2016).

Health Issues

The prevalence of respiratory disease in Bayswater (32%) was significantly higher than the Australian average in 2011-13. Bayswater also has among the highest rates of circulatory conditions, and high or very high psychological distress (PHIDU, 2016). The key health issues in Bassendean are respiratory (31%), musculoskeletal system conditions (30.3%). 12% of adults in Bassendean were in high or very high psychological distress, and 13.4% of older adults (65+) living in the community had profound or severe disability (PHIDU, 2016).

Risk Factors

The proportion of male adults in Bassendean-Bayswater who reported to be current smokers (21.5%) was significantly higher than the average for Perth North PHN in 2011-13. The proportion of male adults in Bassendean-Bayswater reported to consume alcohol at high risk levels (7.5%) was significantly higher than the Australian average (PHIDU, 2016). Bassendean-Bayswater SA3 had the equal 2nd lowest cervical cancer screening rate (55.3%) in Perth North PHN and the 2nd lowest bowel cancer screening rate (38.4%) (AIHW, 2016c).

Social Determinants

The SEIFA score in Bassendean (1004) and Bayswater (1020) were both higher than the Australian average of 1,000 in 2011; however, they were among the lowest in Perth North PHN. Bassendean-Bayswater had the highest proportion of households (20.5) with no internet connection in 2011. (PHIDU, 2016).

Bayswater had the highest proportion of children who are developmentally vulnerable on one or more domains (25.9%) at the time they enter primary school. This is compared to a State average of 23% and National average of 22% (PHIDU, 2016).

The percentage of single parent families with children aged 15 years or younger in Bassendean (25.3%) was higher than the WA (19.9%) and Australian (21.3%) averages in 2011. Bassendean also had the higher than State and National averages of children under 16 years of age in low income and welfare dependent families (26.3%) (PHIDU, 2016). 19.4% of Bassendean and 17.3% of residents over 65 years of age were pensioner concession card holders in June 2014. This was higher than the PHN (14.3%) and WA (16.2%) averages (PHIDU, 2016).

Bassendean-Bayswater: service gaps

Service Issues

The key service issue in Bassendean-Bayswater appears to be undiagnosed chronic conditions (particularly circulatory diseases and diabetes) and delayed presentation (particularly respiratory conditions including COPD). Suicide prevention has also been highlighted.

> *"...as you acquire patients, you'll keep the people with a chronic condition and they will tend to then acquire more and more chronic conditions... I think chronic disease management should be integral to the way you handle patients across the board. It shouldn't be an exception for so called chronic disease patients, for the same approach to be used across the board. Thereby, you won't miss the chronic disease multiple morbidity patients."*
>
> *(GP, Bassendean-Bayswater)*

Potentially Preventable Hospitalisations

The rate of PPHs in Bayswater-Bassendean was higher than the Perth North PHN and National rates in 2013-14 for both chronic and acute/vaccine preventable conditions. This represented 2,330 hospitalisations and the average length of stay was 3.8 days. PPHs from congestive heart failure and diabetes complications occurred at a higher rate than Perth North PHN and Australian average (NHPA, 2015b).

Delayed diagnosis of diabetes and circulatory diseases is indicated by:

- Higher rates of PPHs from congestive heart failure than the Australian average, despite lower prevalence of circulatory disease, particularly in Bassendean.
- Higher rates of PPHs from diabetes complications than the Australian average, despite lower prevalence of diabetes.
- High avoidable mortality rates from circulatory system diseases.

The need for better management of chronic respiratory system condition complications is highlighted through a higher prevalence of respiratory disease, PPHs from COPD and avoidable mortality from respiratory conditions.

Semi and Non-Urgent ED Presentations

Relative utilisation of both semi-urgent (triage 4) and non-urgent (triage 5) ED presentations were lower than the Australian average. In 2013-14, Bassendean-Bayswater accounted for 9,501 semi-urgent and 1,207 non-urgent ED presentations, which was over 8% of Perth North PHN's non - and semi-urgent ED presentations (DoH, 2016a).

Primary Care Workforce

In 2013-15, the registered clinician to population ratio in Bassendean and Bayswater was lower than WA and Australian averages, and all major cities and inner regional areas for GPs, nurses, psychologists, and physiotherapists. Based on this measure, Bassendean had a poorer supply of pharmacists and dental professionals (including dentists, hygienists, therapists etc.) compared to WA and Australia but had a better supply of occupational therapists and podiatrists (DoH, 2015b).

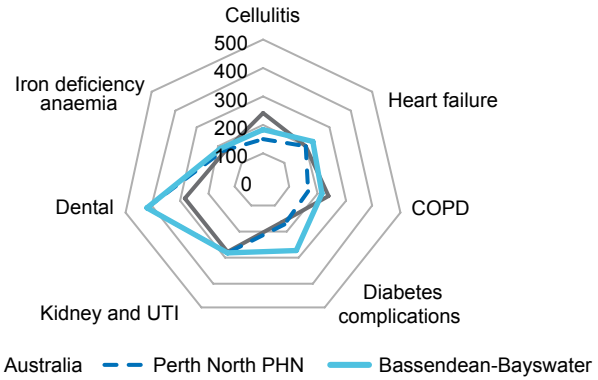


Figure 24. Leading causes of PPHs, per 100,000 population, Bassendean-Bayswater SA3, 2013-14 (NHPA, 2015b).

Identified needs and gaps in the regions:

1. Reduce rates of health risk behaviours, including suicide and self-inflicted injuries.
2. Undiagnosed/delayed presentation or diagnosis of circulatory disease and diabetes.
3. Timely management of complex chronic respiratory conditions and congestive heart failure

Groups with specific needs:

- Aboriginal and Torres Strait Islander people.
- People from non-English speaking backgrounds.

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

How can the system address health needs?

- Early detection of diabetes and circulatory conditions.
- Prioritise improving HealthPathways uptake for diabetes, chronic respiratory and circulatory conditions.
- Ensure adequate after hours service supply in the region.
- Supported self-management for people living with chronic respiratory conditions and congestive heart failure, risk of self-harm, and who wish to adopt a healthier lifestyle.
- Health workforce support to deliver multidisciplinary team care for people with complex multi-morbidities and suicide risk.
- Integrated team care to support Aboriginal people and promote culturally secure primary care services.
- Build capacity for in-language services and health information for people from non-English speaking backgrounds.

The Hills (Mundaring / Kalamunda): health needs

Mundaring and Kalamunda are in Perth's Hills location. It is estimated 9% of the Perth North PHN population lived in this location in 2015; 10% of the residents were older than 70 years of age and 10% came from non-English speaking backgrounds. High prevalence of respiratory system conditions and avoidable mortality, together with higher than National average smoking rates were key health concerns in Kalamunda. Other health issues include high avoidable death from cancer and transport accidents, and high prevalence of musculoskeletal conditions.

Health Outcomes

In 2009-13, the median ages at death for Mundaring (76 years) and Kalamunda (77 years) residents were lower than the WA (80 years) and Australian (81 years) averages. Kalamunda and Mundaring had among the highest rates of avoidable death from cancer and transport accidents in Perth North PHN. Avoidable mortality from COPD in Kalamunda was the highest in the PHN. (PHIDU, 2016).

Health Issues

The prevalence of respiratory diseases in Kalamunda residents (33.9%) was significantly higher than the Australian average (28.7%) in 2011-13. This is associated with a higher prevalence of asthma. The prevalence of musculoskeletal conditions in both Mundaring (30%) and Kalamunda (29%) were among the highest in the PHN (PHIDU, 2016).

Childhood immunisation rates at 1, 2 and 5 years of age were all below 90% in Mundaring. The cervical cancer screening rate in Kalamunda was the lowest in the PHN and the breast cancer screening rate in Mundaring was third lowest. Both were below the National averages (AIHW, 2016c).

Risk Factors

The proportion of adult residents who are current smokers in Mundaring (19.5%) was significantly higher than the WA (19%) and Australian (18%) averages in 2011-13 while obesity prevalence in Kalamunda (30.1%) was also significantly higher than the Australian average (27.5%) (PHIDU, 2016).

Social Determinants

The SEIFA scores in both Mundaring (1,039) and Kalamunda (1,050) were higher than the Australian average of 1000 in 2011. Over 15% of households in the Hills had no internet connection in 2011 (PHIDU, 2016).

In 2013, 23.3% of school leavers from Kalamunda participated in higher education. This is the lowest proportion in the PHN and is lower than the State (28.2%) and National (31.3%) averages. In 2012, 23.7% of children in Kalamunda were assessed to be developmentally vulnerable in one or more domains while 17.6% of children in Mundaring were developmentally vulnerable in one or more domains.

Kalamunda also had the second highest proportion of children who were developmentally vulnerable on two or more domains (12.7%) in the PHN (PHIDU, 2016).

According to the 2015 population estimates, 3.6% of the residents in Mundaring LGA identify as persons of Aboriginal descent while 2% of residents in Kalamunda LGA identify as being of Aboriginal descent (ABS, 2016).

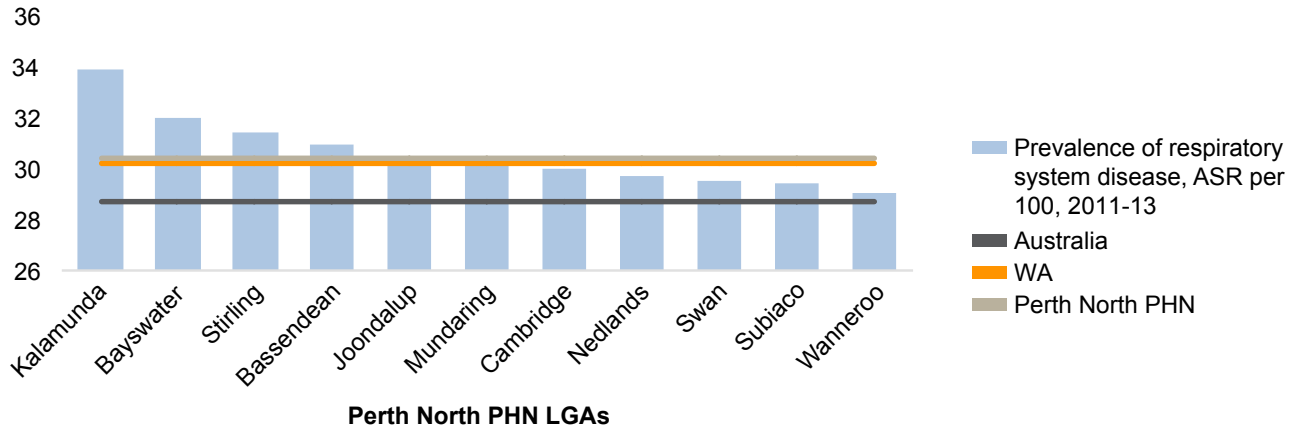


Figure 25. Highest respiratory system disease prevalence, ASR per 100 population, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

The Hills (Mundaring / Kalamunda): service gaps

Service Issues

The key service issue in Mundaring and Kalamunda appears to be early detection and appropriate management of kidney and urinary tract infections (UTI) and cancers. Timely management of chronic respiratory conditions (CRC) and their exacerbations is a key health need in Kalamunda.

High avoidable mortality from transport accidents and high prevalence of musculoskeletal conditions (MSK) in the Hills also has health service delivery implications.

Potentially Preventable Hospitalisations

PPH per 100,0000	Australia	Perth North PHN	Mundaring	Kalamunda
Total PPH	2436	2306	2361	2185
Acute/ Vaccine Preventable	1325	1222	1363	1203
Chronic conditions	1122	992	1007	990

Figure 26. Age-Standardised Rates of PPHs by condition categories, PPH per 100,000, 2013-14, LGA (NHPA, 2015b).

In 2013-14, a total of 2,361 PPHs in Mundaring and 2,185 in Kalamunda were recorded. The average lengths of stay were 3.8 days in Mundaring and 3.7 in Kalamunda (NHPA, 2015b). The likely cause of higher PPH rate in Mundaring was acute / vaccine preventable conditions (Figure 26).

Kalamunda and Mundaring have the highest population number per general practice that opens during the after hours period indicating a relatively poor supply of GP after hour services (NHSD, 2016; ABS, 2015).

Semi and Non-Urgent ED Presentations

The relative utilisation of both semi-urgent (triage 4) and non-urgent (triage 5) ED presentations in the Hills was lower than the Australian average. The Hills accounted for 9,974 semi-urgent and 1,348 non-urgent ED presentations in 2013-14, close to 9% of Perth North PHN's non- and semi-urgent ED presentations (DoH, 2016a).

> *"There needs to be a more coordinated approach to mental health services in this area. Regardless of where the young person presents or what spectrum on the scale they are with their mental health, the young person should be engaged and assisted at all levels - GP, emergency department, CAMHS, headspace and school psychologists. We need outreach services for all levels of intervention. Criteria should not matter if a young person presents at any of the above agencies—a continuum plan of accessing appropriate services needs to be planned out with them on that first contact. Community and State agencies that are working with young people need better information and appropriate care plans across agencies for the young person accessing assistance."*
>
> *(Community member, The Hills)*

Primary Care Workforce

The registered clinician to population ratio in Mundaring and Kalamunda was lower than WA, Australian and major cities and inner regional area averages in 2013-15 across all disciplines (GPs, nurses, pharmacists, dental professionals [including dentists, hygienists, therapists etc.], psychologists, podiatrists, physiotherapists and occupational therapists) (DoH, 2015b).

The number of registered clinicians has generally increased in the Hills, with the exception of the number of general practitioners in Mundaring, physiotherapists in Kalamunda, and nurses and psychologists in both areas (where clinician numbers have either remained constant or declined from 2013-14 or 2015 (DoH, 2015b).

Identified needs and gaps in the regions:

1. Smoking rate reduction.
2. Delayed presentation and management of cancer, particularly breast cancer in Kalamunda.
3. Delayed presentation of kidney and urinary tract infections, and in Kalamunda, chronic respiratory conditions.

Groups with specific needs:

- Aboriginal and Torres Strait Islander people.

Service Needs/ Gaps	Smoking	CRC	MSK	UTI	Cancer
Early detection					•
Timely management		•			•
Self-management	•	•			•
Team care		•	•		•
Healthpathways		•	•	•	•

How can the system address health needs?

- Increase cancer screening and detection rates, and follow through to early intervention to reduce avoidable mortality.
- Prioritise the improvement in uptake of *HealthPathways* for kidney and urinary tract infections, chronic respiratory, cancer, and musculoskeletal conditions.
- Ensure adequate after hours GP service supply.
- Support self-management for people living with cancer and chronic respiratory conditions with a focus on reduction in cigarette smoking.
- Health workforce support to deliver multidisciplinary team care for people living with cancer, musculoskeletal conditions and chronic respiratory conditions.
- Ensure cultural security in primary health service delivery to Aboriginal people.

Perth: health needs

Perth City SA3[3] comprises of the local government areas of Perth, Subiaco, Vincent, half of Cambridge and approximately one tenth of Stirling, making up 10% of the Perth North PHN population. 8.2% of the residents in the Perth SA3 are older than 70 years of age and 22.8% came from a non-English speaking background. In 2015, childhood immunisation rates at 2 and 5 years of age were below 90% across all LGAs in Perth City. Socio-economic and health profiles of the population varies greatly across this region; key socio-economic and health indicators pertaining to the dominant LGAs in this region will be described.

Perth Local Government Area

The Population

In 2015, the estimated resident population in Perth Local Government Area (LGA) was 21,092. 33.8% of Perth residents were from non-English speaking backgrounds. This was higher than the State (14.4%) and National (15.7%) averages (PHIDU, 2016).

Social Determinants

Perth LGA had a particularly high unemployment rate in the September 2014 quarter at 6.3%. This was higher than the WA (4.9%) and Australian (6%) averages during this time (PHIDU, 2016).

The percentage of children aged 16 years who were participating in secondary school (on a full-time basis) in Perth LGA (66.1%) was lowest in the Perth North PHN in 2011, and was considerably lower than the WA (73.7%) and Australian (79.1%) averages. 25.8% of the children in Perth LGA were developmentally vulnerable on one or more domains in 2012 (PHIDU, 2016).

More than half (53.2%) of low income households in Perth CBD reported financial stress from mortgage or rent in 2011. This was the highest rate in Perth North PHN, and was considerably higher than the WA (29.8%) and Australian (31.7%) averages (PHIDU, 2016).

Homeless and transient populations are evident in the Perth City SA3, with 38% of all homeless people in Perth North PHN estimated to 'reside' in the Perth CBD (ABS, 2011).

Health Issues

Residents in Perth LGA experienced the highest rates of mental health and behavioural conditions (15.7%) in the Perth North PHN in 2011-13, compared to 14% in WA and 13.6% in Australia (PHIDU, 2016).

Risk Factors

Perth LGA had higher rate of alcohol consumption at levels that are high risk to health (7.6%) than the rates in Perth North PHN (6.8%), WA (7.1%), and Australia (4.7%) (PHIDU, 2016). In 2015, Perth LGA had the second lowest rate of childhood immunisation at 5 years of age (83.2%) in the PHN (PHIDU, 2016). In 2015, Subiaco and Perth LGA had the lowest rates of childhood immunisation at 5 years of age (83% and 83.2%) in the PHN (PHIDU, 2016). In 2013-14 Perth City SA3 had the second lowest breast cancer screening rate in the PHN which was below the State and National averages (AIHW, 2016c).

Health Outcomes

The median age at death for residents at the Perth SA3 (83 years) was higher than the WA (80 years) and Australian (81 years) averages, but Perth LGA had a strikingly low median age at death (77 years), particularly among male residents (71 years). The rate of avoidable deaths from diabetes in Perth LGA was higher than the Perth North PHN average. Avoidable mortality from colorectal cancer in Perth was among the highest in the PHN (PHIDU, 2016).

Vincent Local Government Area

The estimated population in Vincent LGA was 37,461 in 2015. 21.2% of Vincent residents were from non-English speaking backgrounds. Unemployment rate in Vincent was 5.4%, the third highest in Perth North PHN.

Residents in Vincent had the highest diabetes prevalence (6.6%) rate in Perth North PHN, higher than the WA (5.5%), and Australian (5.4%) averages in 2011-13. In 2011, 16.5% of adults over 65 years of age in Vincent LGA lived with a profound or severe disability. This was the highest rate in the PHN. Avoidable mortality from respiratory conditions and CODP are the second highest and the breast screening rate was the second lowest in the PHN (AIHW, 2016c; PHIDU, 2016).

Subiaco Local Government Area

The estimated population in Subiaco was 20,423, and 21.4% came from non-English speaking backgrounds. 42.3% of households in Subiaco reported financial stress from mortgage or rent in 2011. Apart from the highest avoidable mortality from diabetes and lowest childhood immunisation rate at 2 years, the health profile of Subiaco is largely similar to the state average (PHIDU, 2016).

3. The border of the Perth City SA3 includes the LGAs of Vincent (34.2%), Perth (17%), Stirling (18%), Subiaco (16%), Cambridge (13%), Bayswater (0.8%) and Nedlands (0.1%).

Perth: service gaps

Service Issues

Services delivered across the Perth City SA3 need to cater for people from non-English speaking backgrounds. Childhood immunisation rates (Imm) are lower in Perth and Subiaco LGAs, breast screening rate is low in Vincent LGA. Perth appears to be the LGA with highest service needs in this location and there may be high levels of undiagnosed/delayed presentation of diabetes (DM) and colorectal cancer (This could be indicated by high avoidable mortality, prevalence of diabetes and low bowel screening in the PHN). High levels of undiagnosed/delayed presentation of diabetes are also of concern in the Subiaco LGA.

High rates of risky alcohol consumption, and mental health and behaviour conditions (MH), and undiagnosed/delayed presentation of respiratory conditions (CRC) are of particular concern to residents in Vincent LGA.

Potentially Preventable Hospitalisations

The rate of PPHs in the Perth City SA3 was similar to the Perth North PHN and Australian rates in the 2013-14 financial year. PPHs due to chronic conditions was lower than the State and National averages, while those due to acute conditions were higher.

Perth City had a higher rate of PPHs from congestive heart failure (209 per 100,000 people) than Perth North PHN (190) and Australia (195), despite the lower than Australian average of PPHs resulting from chronic conditions. The high rate of acute PPHs in the Perth City SA3 is related to one of the highest rates of dental condition PPHs in Australia (NHPA, 2015b).

In 2013-14, a total of 2,311 PPHs in the Perth location were recorded, and the average length of stay was 3.8 days (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

The relative utilisation of both semi-urgent (triage 4) and non-urgent ED presentations were lower than the Australian average. The Perth location accounted for 11,138 semi-urgent and 1,626 non-urgent ED presentations in the 2013-14 financial year, which was close to 10% of Perth North PHN's semi-urgent and non-urgent ED presentations (DoH, 2016a).

Primary Care Workforce

The registered clinician to population ratio in the LGAs of Perth, Subiaco and Cambridge was higher than the average of Australian major cities from 2013 to 2015 across all disciplines (GP, pharmacists, dental professionals [including dentists, hygienists, therapists etc.], psychologists, podiatrists, physiotherapists and occupational therapists). There was also an increase in clinician numbers with the exception of pharmacists, psychologists and podiatrists in Perth LGA, and dentists and occupational therapists in Subiaco. The number of nurses has fluctuated from 2013 to 2015 across all localities in Perth City (DoH, 2015b).

The clinician to population ratios in Vincent are generally lower than major Australian cities while showing a decline in clinician numbers from 2013 to 2015, with the exception of dental professionals (including dentists, hygienists, therapists etc.), physiotherapists, and occupational therapists. These disciplines had increases in clinician numbers (DoH, 2015b).

> *"Key health issues: access to fresh and healthy foods; drug and alcohol misuse; sustainable transport; homelessness; and ensuring environmental health services."*
>
> *(Community stakeholders, City of Perth)*

Identified needs and gaps in the region:

1. Primary health care for people living with mental health and behavioural conditions who are likely to consume risky levels of alcohol (Vincent LGA).
2. Undiagnosed conditions:
   - Diabetes (Perth and Subiaco LGAs)
   - Colorectal cancer (Perth LGA)
   - Respiratory system conditions (Vincent LGA).
3. Improve childhood immunisation rates.
4. Improve cancer screening rates.

Groups with specific needs:

- People from non-English speaking backgrounds.

Service Needs/ Gaps	Alcohol	MH	DM	CRC	CVD	Cancer	Imm.
Early detection			P.S.	V.	All	P.V.	
Timely management			P.S.	V.	All	P.V.	
Self-management	V.	V.			All		P.S.
Team care	V.	V.	P.S.	V.	All	P.V.	
HealthPathways	V.	V.			All		

How can the system address health needs?

- Early detection of colorectal and breast cancer by increasing screening rates, and follow through to early intervention to reduce avoidable mortality.
- Prioritise the improvement of uptake of *HealthPathways* for congestive heart failure and mental health conditions.
- Supported self-management for:
  - people living with mental health conditions, and engaging in high risk alcohol drinking.
  - parents with young children to improve immunisation rates.
  - people living with CVD and diabetes.
- Health workforce support to deliver multidisciplinary team care for people living with complex multi-morbidities.
- Build capacity to deliver in-language primary health services and health information.
- Integrated team care for Aboriginal people with chronic conditions.
- Consider needs of homeless people.

Stirling: health needs

It is estimated that 21% of the Perth North PHN population lived in Stirling in 2015; among the 227,566 residents in Stirling, 50,975 were from non-English speaking backgrounds, 23,636 were adults over 70 years of age and 3,186 identified as Aboriginal. These were the highest or second highest numbers in the respective Perth North PHN population groups. Stirling has significantly higher than State average prevalence of respiratory disease and significantly higher than WA and national average of avoidable mortality from suicide and self-inflicted injuries.

Health Outcomes

The median age at death in Stirling was 79 years for males, and 84 years for females in 2009-13. This was similar to the Perth North PHN and Australian averages.

Mortality from suicide and self-inflicted injuries in Stirling (13.6 per 100,000) was significantly higher than the national average (10.8 per 100,000) in 2009-13. This was the fourth highest rate in the Perth North PHN (PHIDU, 2016).

Over thirteen percent (13.7%) of residents reported fair or poor self-assessed health status in 2011-13, which was similar to the WA and Australian average.

Health Issues

The rate of respiratory system disease in Stirling (31.7%) was significantly higher than the Australian rate (28.7%) in 2011-13 (PHIDU, 2016).

Among LGAs in Perth North PHN, Stirling had one of the highest prevalence of diabetes (5.9%), mental health and behavioural conditions (14.2%), and self-reported high or very high level of psychological distress (10.6%) during 2011-13; however, these rates were similar to the WA and Australian average (PHIDU, 2016).

Risk Factors

The rate of alcohol consumption at levels that are high risk to health are significantly higher in Stirling (6.8%) than the Australian average (4.7%). This is the fifth highest rate in Perth North PHN (PHIDU, 2016).

Social Determinants

The SEIFA score in Stirling (1,026) was higher than the Australian average (1,000) in 2011, indicating less socio-economic disadvantage.

One in ten (9.9%) Stirling residents over 65 years of age were senior health card holders in 2014, compared to the WA (9.2%) and Australian (8.6%) averages (PHIDU, 2016).

At the time of the 2011 census, 20% of households in Stirling had no internet connection (ABS, 2011a).

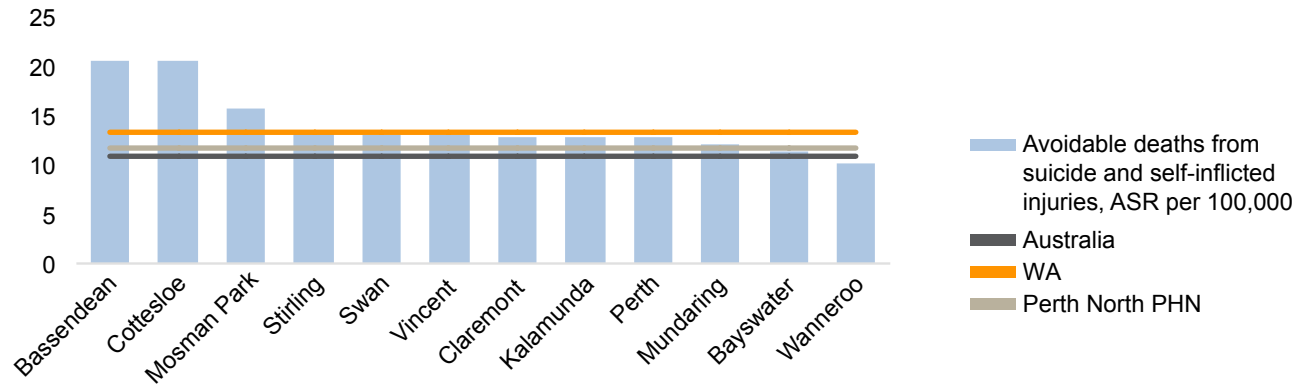


Figure 27. Highest avoidable mortality from suicide and self-inflicted injuries, ASR per 100, 000 population, Perth North PHN by LGA, 2009-13 (PHIDU, 2016).

Stirling: service gaps

Service Issues

The key service issue in Stirling appears to be high volume of PPHs, and semi and non-urgent emergency department presentations associated with the large population. There is an adequate workforce supply across the location.

The focus of future service development should be on meeting the needs of people from culturally and linguistically diverse backgrounds and residents over 70 years of age living with complex multi-morbidities. Respiratory system conditions and suicide prevention are the main health concerns.

Potentially Preventable Hospitalisations

The rate of PPHs in Stirling SA3 (2,202 per 100,000 people) was lower than the Perth North PHN (2,306) and Australian (2,436) rates in 2013-14 (NHPA, 2015b).

The rate of PPHs for acute / vaccine preventable causes in Stirling was higher than both the Perth North PHN and Australian averages. However, available data does not identify the possible causes (NHPA, 2015b).

In 2013-14, a total of 4,821 PPHs in Stirling were recorded, accounting for 20% of the total PPHs, 21% of chronic condition PPHs and 21% of acute condition PPHs in Perth North PHN. The average length of stay was 3.9 days (NHPA, 2015b). Heart failure and iron deficiency anaemia is over-represented among the chronic condition PPHs in Stirling.

Semi and Non-Urgent ED Presentations

Stirling SA3 accounted for 22,226 semi-urgent and 2,375 non-urgent ED presentations in 2013-14, which was close to 19% of Perth North PHN's non and semi-urgent ED presentations despite lower relative utilisation compared to the National average (DoH, 2016a). It is worth noting that Stirling LGA does not have an emergency department, and the nearby Osborne Park Hospital does not accept ED presentations.

There are 20 general practices that open during the after hours period (NHSD, 2016). The population number per general practice in the after hours period is the fourth highest in the Perth North PHN, indicating a relatively poor supply of GP after hour services (NHSD, 2016; ABS, 2015).

Primary Care Workforce

In 2013-14, Stirling had a supply of dental professionals (including dentists, hygienists and therapists etc.), physiotherapists, and occupational therapists that was higher than the average for Australian major cities (DoH, 2015b).

While the ratio for GP and psychologists was below the level of Australian major cities and WA and Australian averages, the numbers of clinicians registered to practice in Stirling were increasing for these disciplines (DoH, 2015b).

The rate of clinician to population ratio for nurses and pharmacists in Stirling is considerably low, and had been accompanied by a declining trend in clinician numbers from 2013-14 (DoH, 2015b).

> *"People with English as a second language often find it extra hard to know which services can help them, the health system is hard to navigate and not always welcoming or culturally sensitive to their needs when people do seek help."*
>
> *Not for profit service provider, Stirling*

Identified needs and gaps in the regions:

1. High rate of risky alcohol consumptions (alcohol).
2. Appropriate care for people living with poor mental health and wellbeing (MH), and to prevent avoidable deaths from suicide and self-inflicted injuries (suicide).
3. Primary care for people living with chronic respiratory (CRC) and circulatory system (CVD) conditions.
4. Delayed presentation of congestive heart failure (HF) and iron deficiency anaemia.
5. High rate of acute/vaccine preventable PPHs in Stirling but available data does not suggest exact causes.

Groups with specific needs:

- Older adults 70 years and over.
- People from non-English speaking backgrounds.

Service Needs/Gaps	Risks	MH	Suicide	CVD	HF	CRC
Early detection			v			
Timely management			v		v	
Self-management	Alcohol	v	v	v	v	v
Team care		v			v	v
HealthPathways		v		v	v	v

How can the system address health needs?

- Early intervention in suicide prevention.
- Prioritise the improvement in uptake of *HealthPathways* for respiratory system diseases, mental health and behavioural conditions and circulatory system diseases including congestive heart failure.
- Supported self-management for people living with multiple chronic conditions including mental health, and people who wish to adopt healthier lifestyles.
- Integrated team care for Aboriginal people living with complex multi-morbidities focusing on congestive heart failure and its exacerbations, respiratory system diseases and mental health conditions.
- Further investigation into the causes of acute/vaccine preventable PPHs.
- Ensure adequate supply of adequate after hours services
- Build capacity to deliver in-language services and health information.

Swan: health needs

Swan is where 12.5% of the Perth North PHN population live. Close to 30% of the population are younger than 19 years of age (compared to 25% in Perth North PHN and Australia), 3.4% identify as Aboriginal and 15% come from non-English speaking backgrounds. Swan has a higher prevalence, and avoidable mortality, from circulatory system diseases than WA and national averages. The rate of alcohol consumption at rates of health risk, smoking and obesity are higher than national averages. Bowel and breast cancer screening rates are below the State and National averages, and among the lowest in the Perth North PHN. Currently there is only one hospital in Swan.

Health Outcomes

The median age at death in Swan was 74 years for males and 81 years for females in 2009-13. This was lower than the Perth North PHN, WA and Australian averages.

The rate of avoidable deaths from circulatory system diseases in Swan (40.8 per 100,000) was significantly higher than Perth North PHN's rate (30.6) but similar to the WA and Australian averages in 2009-2013 (PHIDU, 2016).

Health Issues

The prevalence of diabetes and circulatory system diseases was slightly higher than the Perth North PHN and WA averages in 2011-13 (PHIDU, 2016). The proportion of older adults over 65 years of age living with a profound or severe disability was 13.7% and people under 65 living with severe disability was 2.1%. These are similar to the National rates (13.2% and 2.4%), but were the highest in the Perth North PHN in 2011 (PHIDU, 2016).

Risk Factors

The adult smoking rate in Swan was 21.3% in 2011-13. This was the highest rate in Perth North PHN, and was significantly higher than the WA (19%) and Australian (18%) averages. Swan also had the highest rate of obesity (30.9%) in Perth North PHN in 2011-13. This was higher than the WA (28.2%) and Australian (27.5%) averages (PHIDU, 2016).

The rate of cancer screening participation in Swan was lower than the Perth North PHN, WA and Australian rates across all cancer types in 2014-15 (AHIW, 2016c), but showing marked improvement from previous years. Bowel cancer screening participation in all persons aged 50-74 years (37.0%) was the lowest of the Perth North SA3s, notably in the 50-54 age group (27.7%) (AIHW, 2016c).

Social Determinants

The SEIFA score in Swan (1,014) was similar to the Australian average (1,000) in 2011 (PHIDU, 2016); however, it was the second lowest score indicating relative socio-economic disadvantage among the LGAs in Perth North PHN.

The socio-economic indicators for Swan that are among the highest in Perth North PHN LGAs, and higher than both the State and National averages are listed below:

- Low income households in financial stress from rent or mortgage (35.3%); WA (29.8%), Australia (31.7%)
- People who left school at year 10 or below (37.1%); WA (32.8%); Australia (34.4%).

Swan also had one of the second lowest proportions of participation in secondary school (on a full-time basis) at the age of 16 (72.5%) in the Perth North PHN, and was lower than both the State (73.7%) and National (79.1%) averages (PHIDU, 2016).

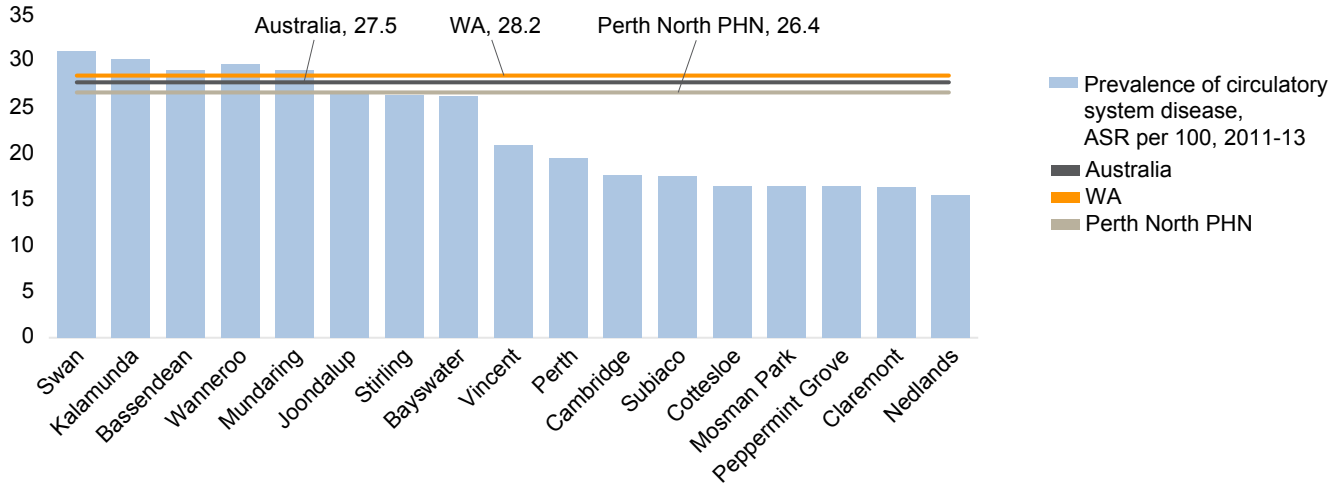


Figure 28. Highest prevalence of obesity, ASR per 100 population, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

Swan: service gaps

Service Issues

The key service issue in Swan appears to be a high rate of PPHs. With an adequate health workforce supply, the focus of future service development should be on supported self-management, multidisciplinary team care for groups with special needs.

Potentially Preventable Hospitalisations

In Swan, the rate of PPHs caused by both chronic and acute/vaccine preventable causes (2,768 per 100,000) was higher than the Perth North PHN (2,306) and national (2,436) rates in 2013-14 (NHPA, 2015b). In 2013-14, a total of 2,930 PPHs in Swan were recorded, accounting for 12% of the total PPHs in Perth North PHN. The average length of stay was 3.3 days (NHPA, 2015b).

The rate of PPHs across all conditions were among the highest in the Perth North PHN. PPHs due to congestive heart failure, diabetes complications, iron deficiency anaemia, and kidney and urinary tract infections occurred at a higher rate in Swan than the Perth North PHN and Australian rates in 2013-14 (NHPA, 2015b).

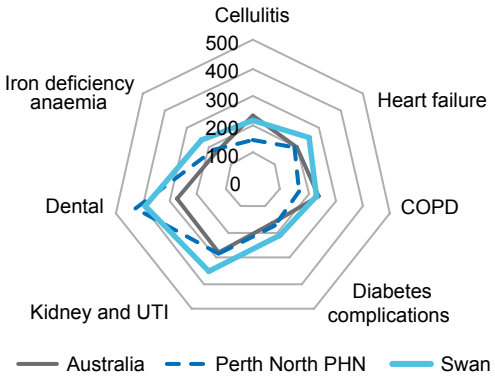


Figure 29. Leading causes of PPHs, per 100,000 population, Swan SA3, 2013-14 (NHPA, 2015b).

Service Needs/Gaps	Risks	Scr	DM	CVD	HF	UTI
Early detection		•	•		•	•
Timely management			•	•	•	•
Self-management	•	•	•	•	•	•
Team care			•	•	•	•
HealthPathways			•		•	

Semi and Non-Urgent ED Presentations

The relative utilisation of semi-urgent (triage 4) and non-urgent (triage 5) ED presentations was lower than the National average in 2013-14. Swan SA3 accounted for 14,448 semi-urgent and 1,910 non-urgent ED presentations in the same year, which was over 12% of Perth North PHN's non and semi-urgent ED presentations (DoH, 2016a).

Primary Care Workforce

The primary care clinical workforce appeared to be growing during 2013-15; however, the supply remained below Australian major city and inner regional, WA and Australian levels according to clinician to population ratio (DoH, 2015b). This trend is across all disciplines with the exception of dental professionals (including dentists, hygienists and therapists etc.), psychologists and occupational therapists. The clinician numbers in these disciplines decreased in Swan in 2013-14 (DoH, 2015b).

Identified needs and gaps in the regions:

1. High rate of smoking and obesity.
2. Delayed presentation of:
   - diabetes complications
   - congestive heart failure and its exacerbations
   - kidney and urinary tract infection.
3. Improve cancer screening rates across all cancer types.

Groups with specific needs:

- Aboriginal people
- People coming from CALD backgrounds
- People living with profound and severe disability
- Young adults under age of 19 in financial distress
- People living with complex multi-morbidities.

> *"There's a lack of communication and information sharing across agencies to ensure coordinated responses."*
>
> *(Not for profit service provider, City of Swan)*

How can the system address health needs?

- Early detection and timely management of:
  - diabetes complications
  - congestive heart failure and its exacerbations
  - kidney and urinary tract infection.
- Prioritise the improvement in uptake of *HealthPathways* for diabetes complications and congestive heart failure.
- Supported self-management for:
  - people living with complex multi-morbidities particularly diabetes, heart failure and possibly kidney conditions.
  - people who wish to adopt a healthier lifestyle (obesity and smoking reduction).
  - men and women who meet cancer screening criteria.
  - people from special high needs groups as stated above.
- Health workforce support to deliver multidisciplinary team care for people living with complex multi-morbidities and acute infections and the needs of vulnerable groups.
- Integrated and culturally secure primary health care to Aboriginal people.
- Build capacity to deliver in-language services and health information.

Wanneroo: health needs

It is estimated that 18% of the Perth North PHN population lived in Wanneroo in 2015; among the 188,785 residents in Wanneroo, 28,695 were from non-English speaking backgrounds; 11,654 were adults over 70 years of age and 3,209 were Aboriginal people. These were the highest or second highest numbers in the respective Perth North PHN population groups. Wanneroo has among the highest prevalence in Perth North PHN of diabetes and circulatory system diseases. Cervical cancer screening was lower than the Perth North PHN average. The rate of health risk behaviours in Wanneroo is significantly higher than the National average. The area had higher than State and National average proportion of low income residents in financial stress, while the unemployment rate (5.47%) was above the WA average (4.92%) in September 2014.

Health Outcomes

The median age at death in Wanneroo was 76 years for males and 83 years for females in 2009-13. This was slightly lower than Perth North PHN, WA and Australian averages.

In 2009-213, avoidable mortality from circulatory and respiratory (including COPD) system diseases in Wanneroo were among the highest rates in Perth North PHN (PHIDU, 2016).

Health Issues

The prevalence of diabetes (6.3%) and circulatory system diseases (16%) in Wanneroo were also among the highest in the Perth North PHN and WA averages in 2011-13 (PHIDU, 2016). During the same period, 14% of adults self-assessed to be in fair or poor health, comparable to the PHN (12.8%), WA (13.7%), National (14.6%) averages (PHIDU, 2016).

Risk Factors

The rates of adult smoking (19.2%) and obesity (29.5%) in Wanneroo were slightly but significantly higher than the Perth North PHN and National averages in 2011-13. The rate of high risk alcohol consumption during the same period was significantly higher than the Perth North PHN average.

The bowel (38.7%) and cervical (55.3%) cancer screening rates were lower in Wanneroo than Perth North PHN, WA, and Australian averages in 2014-15 (AIHW, 2016).

Social Determinants

The SEIFA score in Wanneroo (1,026) was slightly higher than the national average of (1,000) in 2011 (PHIDU, 2016), indicating less socio-economic disadvantage overall.

The unemployment rate was 5.47% in September 2014 which, although lower than the National average of 5.97%, was the second highest in the Perth North PHN (PHIDU, 2016).

The socio-economic indicators for Wanneroo that are among the lowest in Perth North PHN LGAs, and lower than both the State and National averages are listed below:

- Full-time participation in secondary school education at 16 (72.6%); WA (73.7%), Australian (79.1%).
- School leavers participate in higher education (25%); WA (28.2%), Australian (31.3%).

Well over a third (38.3%) of the low income households in Wanneroo are under financial stress from rent or mortgage (PHIDU, 2016).

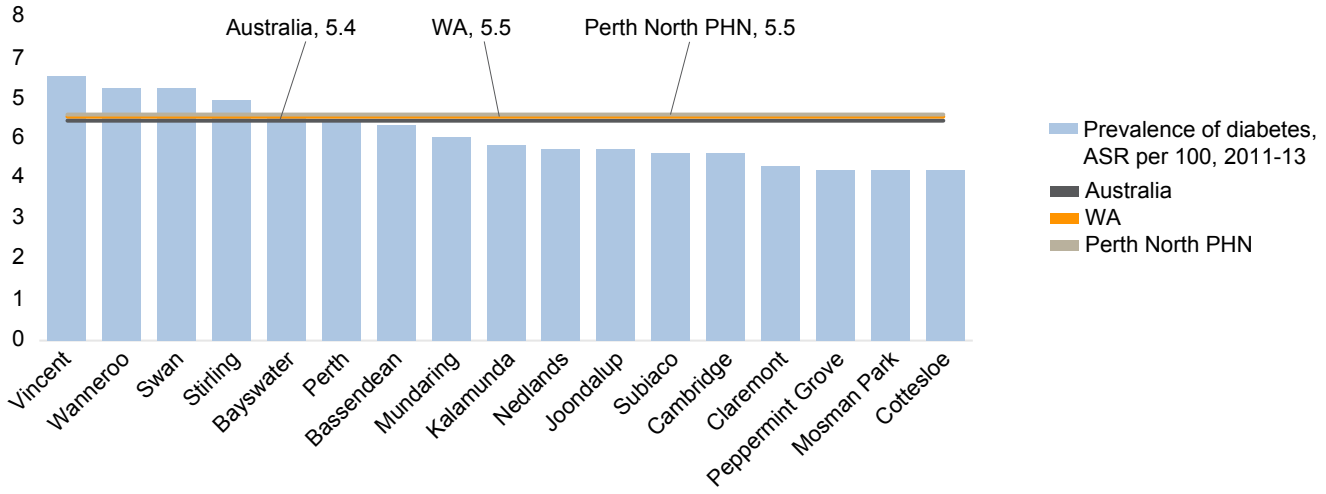


Figure 30. Highest prevalence of diabetes, ASR per 100 population, Perth North PHN by LGA, 2011-13 (PHIDU, 2016).

Wanneroo: service gaps

Service Issues

The key service issue in Wanneroo appears to be both high rates and volumes of PPHs and semi-urgent ED utilisation. With a growing workforce supply, the focus of future service development should be on supported self-management and multidisciplinary team care for groups with special needs.

The average avoidable mortality from respiratory conditions and rate of COPD PPHs was higher, while the prevalence of respiratory conditions was lower than the PHN averages, indicating a possible high level of undiagnosed COPD.

Potentially Preventable Hospitalisations

The rate of PPHs in Wanneroo (2,509 per 100,000 people) was higher than the Perth North PHN (2,306) and Australian (2,436) rates in 2013-14 with a total of 3,937 PPHs recorded in Wanneroo, accounting for 17% of the total PPHs in the Perth North PHN. The average length of stay was 3.1 days. The PPHs due to heart failure, diabetes complications, and kidney and UTI occurred at a higher rate than the PHN and Australian averages. PPHs due to COPD were higher than the Perth North PHN average (NHPA, 2015b).

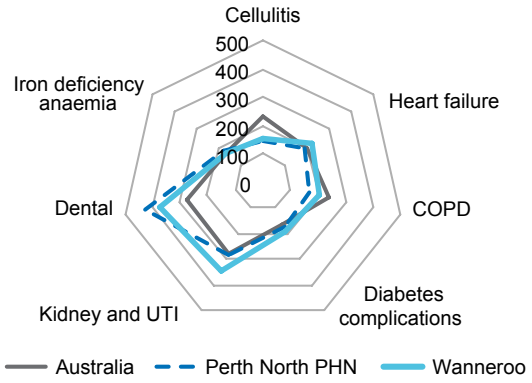


Figure 31. Leading causes of PPHs, per 100,000 population, Wanneroo SA3, 2013-14 (NHPA, 2015b).

Semi and Non-Urgent ED Presentations

Relative utilisation of semi-urgent (triage 4) ED presentations was higher than the Australian average in 2013-14 and non-urgent (triage 5) presentations were lower. Wanneroo accounted for 26,766 semi-urgent and 1,934 non-urgent presentations in the same year, which was close to 22% of the PHN's triage 4&5 presentations (DoH, 2016a). This is an over-representation in relation to the proportion of the PHN resident population in Wanneroo (17.7%).

> *"There's a sort of an interplay between the health issue and the emotional health issue as well, and I think actually managing that better would probably be a solution for a lot of patients."*
>
> *(GP, Wanneroo)*

There are 10 general practices that open during the after hours period (NHSD, 2016). The population number per general practice during the after hours period is the third highest in the Perth North PHN, indicating a relatively poor supply of GP after hour services (NHSD, 2016; ABS, 2015).

Primary Care Workforce

The primary care clinical workforce appeared to be growing across all disciplines during 2013-15; however, the supply remained below the WA and Australian levels. The number of nurses, physiotherapists and occupational therapists remained the same or fluctuated during 2013-15 (DoH, 2015b).

Service Needs/Gaps	Risks	Scr	DM	CVD	HF	COPD	UTI
Early detection		v	v		v	v	v
Timely management			v	v	v	v	v
Self-management	v	v	v	v	v	v	v
Team care			v	v	v	v	v
HealthPathways			v		v	v	

Identified needs and gaps in the regions:

1. High rate of smoking and high risk alcohol consumption (Risks).
2. Delayed presentation of:
   - diabetes complications (DM).
   - congestive heart failure and its exacerbations (HF).
   - Kidney and urinary tract infection (UTI).
   - COPD (potentially high level of undiagnosed COPD).
3. Improve cervical screening rate (Scr).

Groups with specific needs:

- Aboriginal people
- people coming from CALD backgrounds
- older people over 70 years of age
- People living with complex multi-morbidities.

How can the system address health needs?

- Early detection and timely management of diabetes complications, congestive heart failure and its exacerbations, kidney and urinary tract infection, COPD.
- Prioritise the improvement in uptake of *HealthPathways* for diabetes complications, COPD and congestive heart failure.
- Supported self-management for:
  - people living with complex multi-morbidities.
  - people who wish to adopt a healthier lifestyle
  - women who meet cervical cancer screening criteria.
  - people from special needs groups.
- Health workforce support to deliver multidisciplinary team care for people living with complex multi-morbidities and acute infections and the needs of vulnerable groups.
- Integrated and culturally secure primary health care to Aboriginal people.
- Build capacity to deliver in-language services and health information.

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.

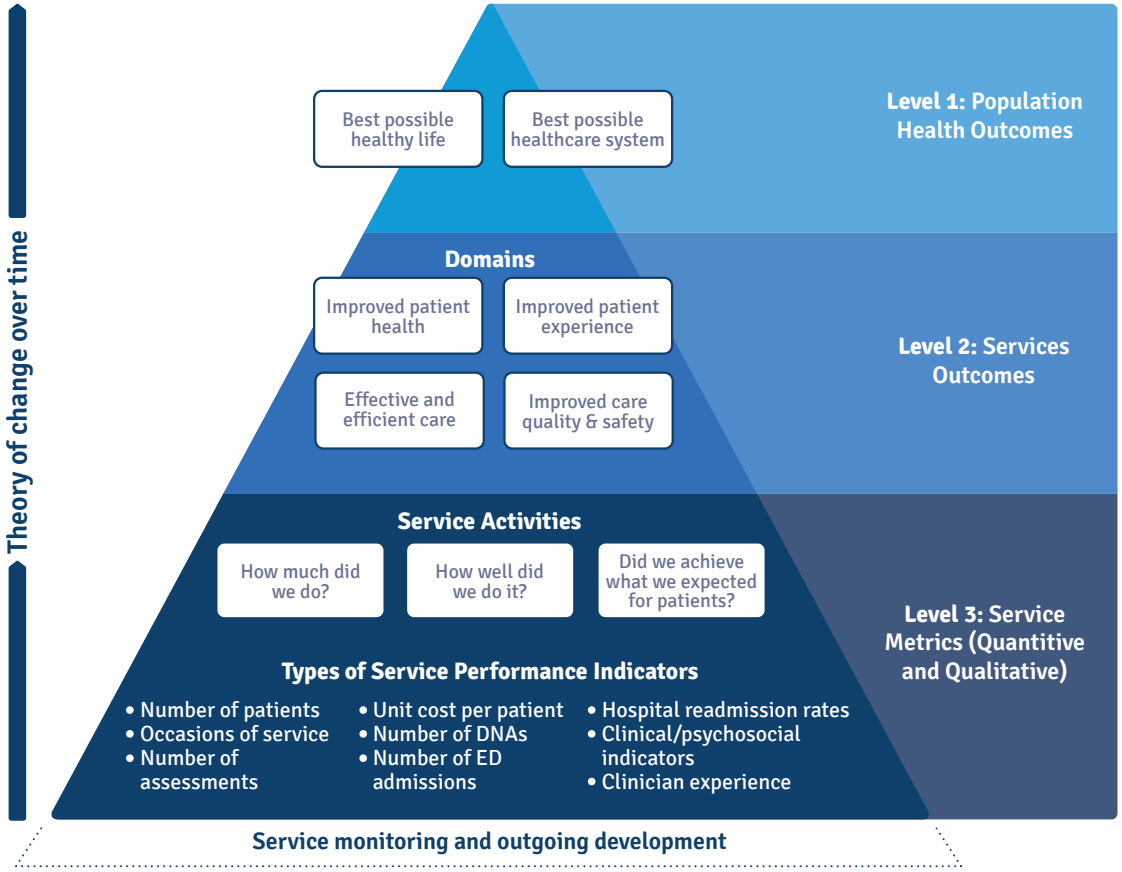


Figure 32. Population health outcomes hierarchy: population health, investment domains and service delivery

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 33. 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 33. We will continue to focus on these priorities for action in all our work.

Improving health outcomes in our communities

Perth North 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.

Health Care Home

Perth North PHN is one of 10 PHN regions across Australia for Stage 1 of the Commonwealth's Health Care Homes (HCH) initiative.

Health Care Homes will improve the provision of care for people with chronic and complex conditions. Participating general practices and ACCHS will play a vital role in shaping this important reform.

Under this model, eligible patients will voluntarily enrol with a participating medical practice known as their Health Care Home. This practice will provide a patient with a 'home base' for the ongoing coordination, management and support of their conditions.

A tailored care plan will be developed with the patient and implemented by a team of health care providers. This will involve identifying the best local providers to meet each patient's needs, coordinating care with these providers, and putting in place strategies to better manage their health conditions and improve their quality of life. Care will be integrated across primary and acute care as required.

The PHN team will support the rollout of this program by supporting practices to transition to the new model, providing training and education, and supporting with patient enrolment. The first HCH services are planned to be delivered from 1 July 2017.

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 areas identified in this report: Bassendean-Bayswater, the Hills, Perth, Stirling, Swan and Wanneroo.

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 2016/2017 to confirm the scope of this work. It is planned to be targeted in one of the priority locations in the PHN: Bassendean-Bayswater, the Hills, Perth, Stirling, Swan and Wanneroo.

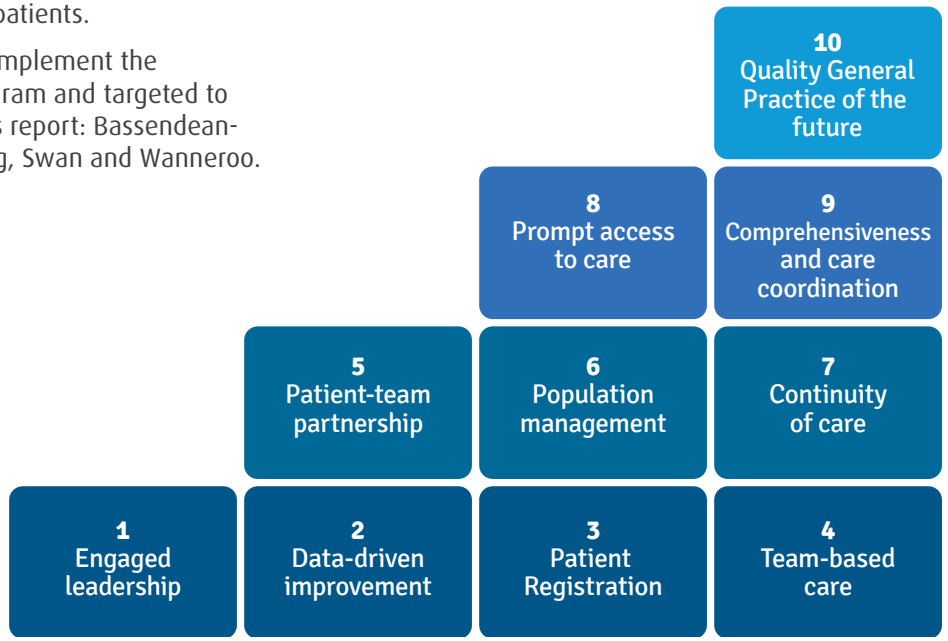


Figure 34. The 10 building blocks of high performing health care.

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 North PHN in two ITC regions: Perth North West which includes the SA2 regions of Alexander Heights-Koondoola, Balcatta-Hamersley, Balga-Mirrabooka, Butler-Merriwa-Ridgewood, Girrawheen, Mindarie-Quinns Rocks-Jindalee, Nollamara-Westminster, Tapping-Ashby-Sinagra and Wanneroo; and Perth North East which includes the SA2 regions of Ballajura, Bassendean-Eden Hill-Ashfield, Bayswater-Embleton-Bedford, Beechboro, Bullsbrook, Gidgegannup, Hazelmere-South Guildford, Lockridge-Kiara, Middle Swan-Herne Hill, Midland-Guildford, Stratton-Jane Brooke and Mundaring.

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 identified in this report: Bassendean-Bayswater, the Hills, Perth, Stirling, Swan and Wanneroo.

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 Joondalup, Midland and Osborne Park. The centres are there to help young people access health workers–including GPs, psychologists, social workers, AoD workers, counsellors, vocational workers or youth workers. The headspace Youth Early Psychosis Program is a team of multidisciplinary professionals who provide recovery orientated, early intervention services to young people aged 12-25 years who are experiencing a first episode of psychosis or are at an ultra-high risk of experiencing psychosis. This has is available in Joondalup, Osborne Park and Midland.

From 1st January 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 North 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 the point of care primarily by general practitioners but is also available to hospital specialists, nurses and other health professionals across WA.

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".

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 North 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.

Sector Capacity Building

Perth North 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 and 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 that provides evidence to support longer-term patient and systems change.

Case Study

The GP-SpARC program is a pilot program run by the PHN to build capacity within practices for managing patients with chronic, complex conditions. It is a collaborative project with specialists from Royal Perth Hospital (RPH) in diabetes, respiratory medicine and cardiology, who meet with practices at a round table meeting to provide specialist input and management advice for patients with chronic, complex conditions, which can potentially prevent a hospital referral. The pilot program is currently being evaluated to assess the value of this approach.

For further information on what activities have been commissioned in each Perth North 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

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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).

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. (2011a). 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. (2011b). Cultural and Linguistic Characteristics Using Mental Health Services and prescription Medications (No. 4329.0.00.001). Retrieved from: http://www.abs.gov.au/ausstats%5Cabs@.nsf/0/F7F2748508863DFECA257FC60018866D?

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/

Australian Institute of Health and Welfare. (2016c). Cancer screening in Australia by small geographical areas. Accessed October 2016 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. [Online] 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.

References

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/

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

City of Wanneroo. (2015). City of Wanneroo growth profile. Retrieved from: www.wanneroo.wa.gov.au/download/.../growth_profile_information.pdf

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

Commissioner for Children & Young People. (2011). Report of the Inquiry into the mental health and wellbeing of children and young people in Western Australia. Retrieved from: http://www.ccyp.wa.gov.au/files/MentalWellbeingInquiry/CCYP%20Mental%20Health%20Inquiry%20- %20Report%20to%20Parliament.pdf

Curtin University. (2016). Perth North 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. Retrieved 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 (Accessed November 2016)

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 (Accessed October 2016)

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

Duckett, S. & Griffiths, K. (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 (Accessed October 2016)

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 (Accessed October 2016)

References

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]. Retrieved from: http://heartfoundation.org.au (Accessed October 2016)

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 (Accessed January 2016).

National Health Performance Authority. (2015). Healthy Communities: Australians 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 (Accessed October 2016).

National Health Performance Authority. (2015b). Healthy Communities: Potentially preventable hospitalisations in 2013-14. [Online] Retrieved from: http://www.myhealthycommunities.gov.au/our-reports/potentially-preventable-hospitalisations/december-2015 (Accessed October 2016).

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

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.

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. Perth, W.A: Western Australian Mental Health Commission.

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 were 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.

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
NMHS	North Metropolitan Health Service
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
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 ÷ m2. 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 Disease

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.

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 (painkillers, 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).

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).

Glossary

Rising-risk 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 — Commissioned activities by Local Government Area

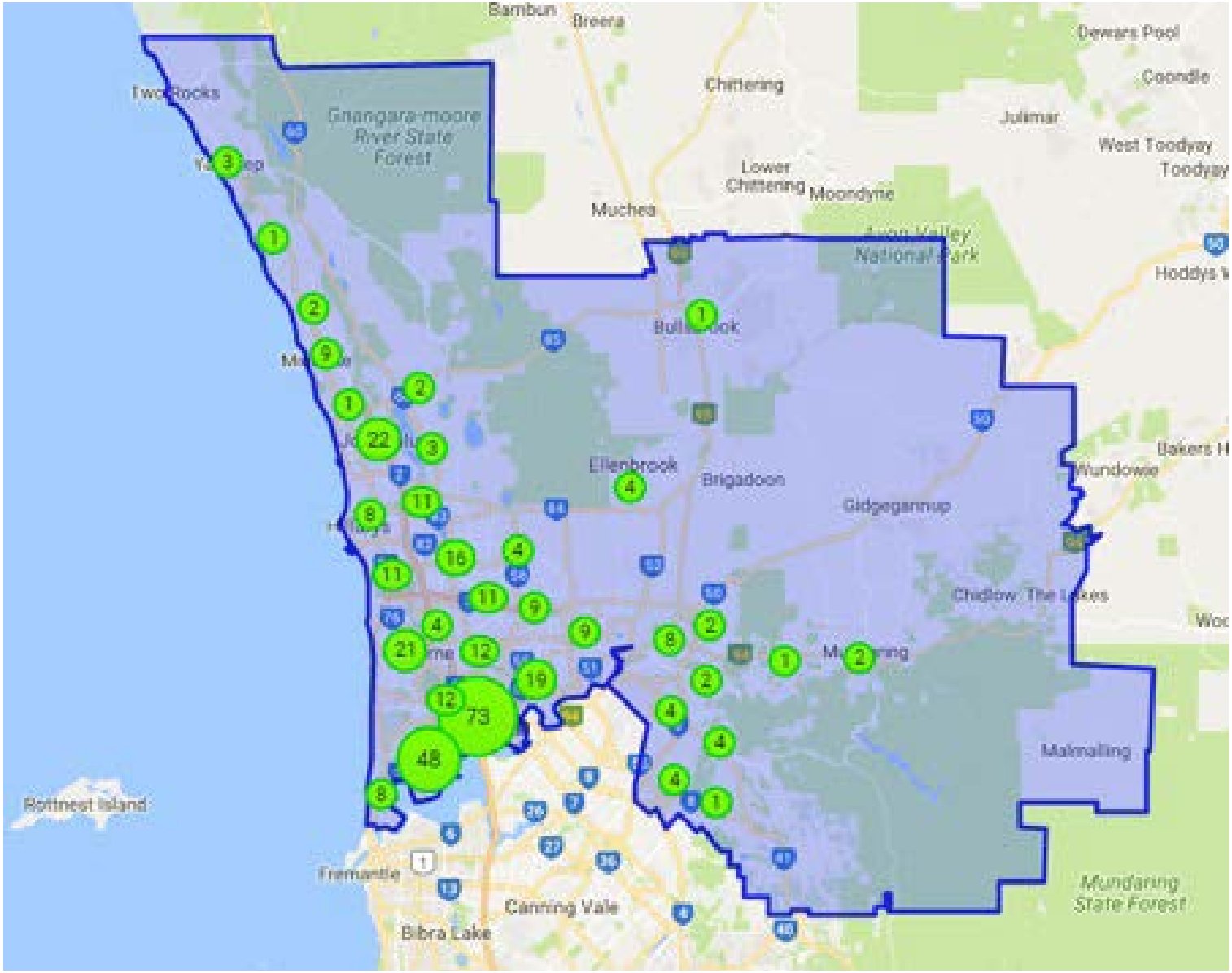
Activity/LGA/ Pillar	Whole PHN	Bassendean-Bayswater	The Hills	Perth	Stirling	Swan	Wanneroo	Aboriginal Health	Mental Health	Aged Care	Population Health	Digital Health	Workforce
Comprehensive Primary Care													
headspace[1]													
headspace Youth Early Psychosis Project													
50 Lives 50 Homes													
Street Doctor													
Telehealth structured psychological services													
Mental health care managers													
Structured psychological substitution service													
Perth Watch House Trial													
Social and Emotional Wellbeing Teams Care Trial													
Community support mental health services													
Primary Health Providers Cultural Awareness Training													
Arbor suicide bereavement support													
ALIVE suicide prevention													
General Practice Support													
HealthPathways													
Integrated Team Care													
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.												
Alcohol and other drug treatment services													

activity is in place activity is planned activity is being scoped

1. There is also a headspace centre in Joondalup

Appendix B — Services in Perth North PHN

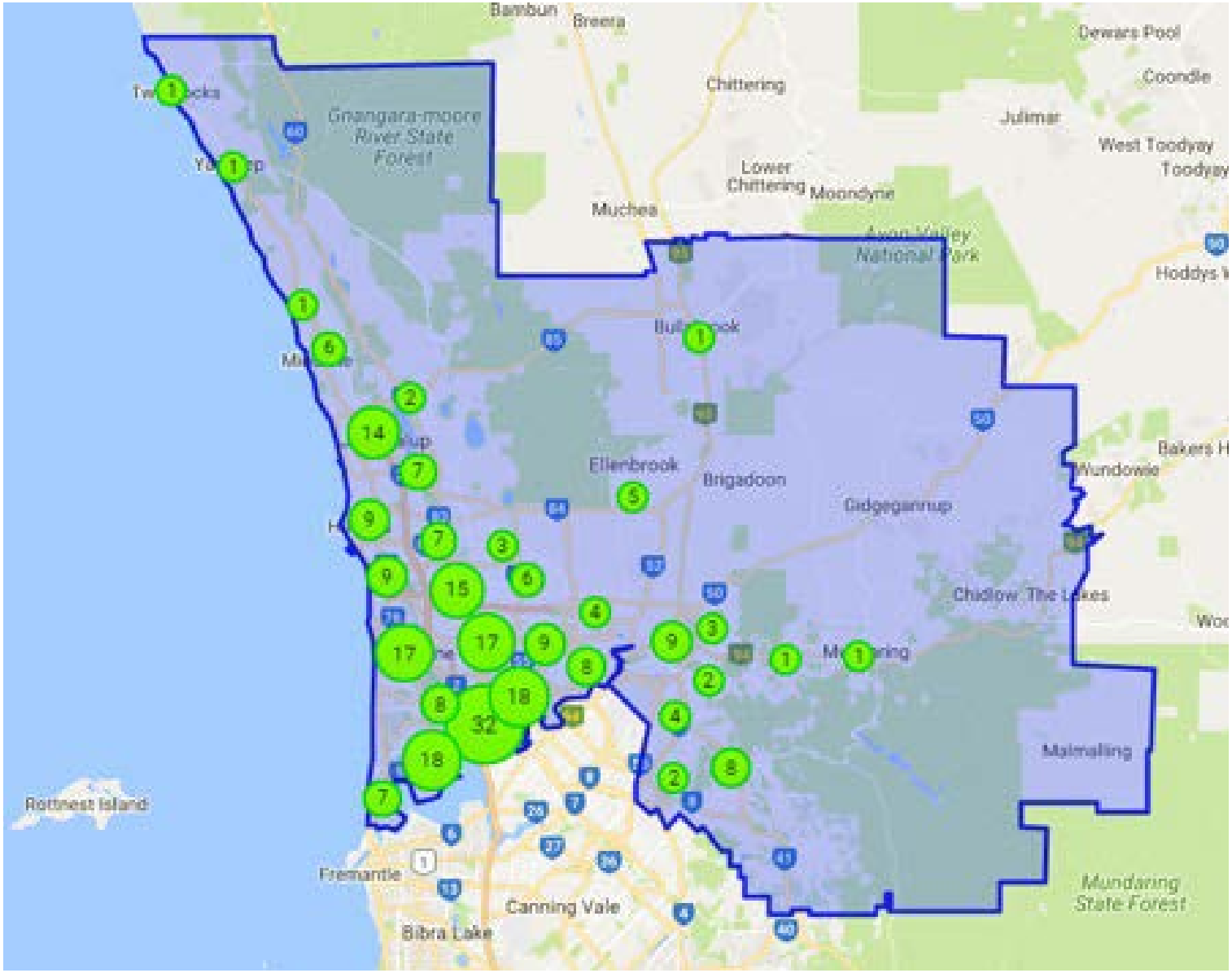
Maps in the appendices indicate the supply of selected primary health providers across the Perth North PHN catchment.



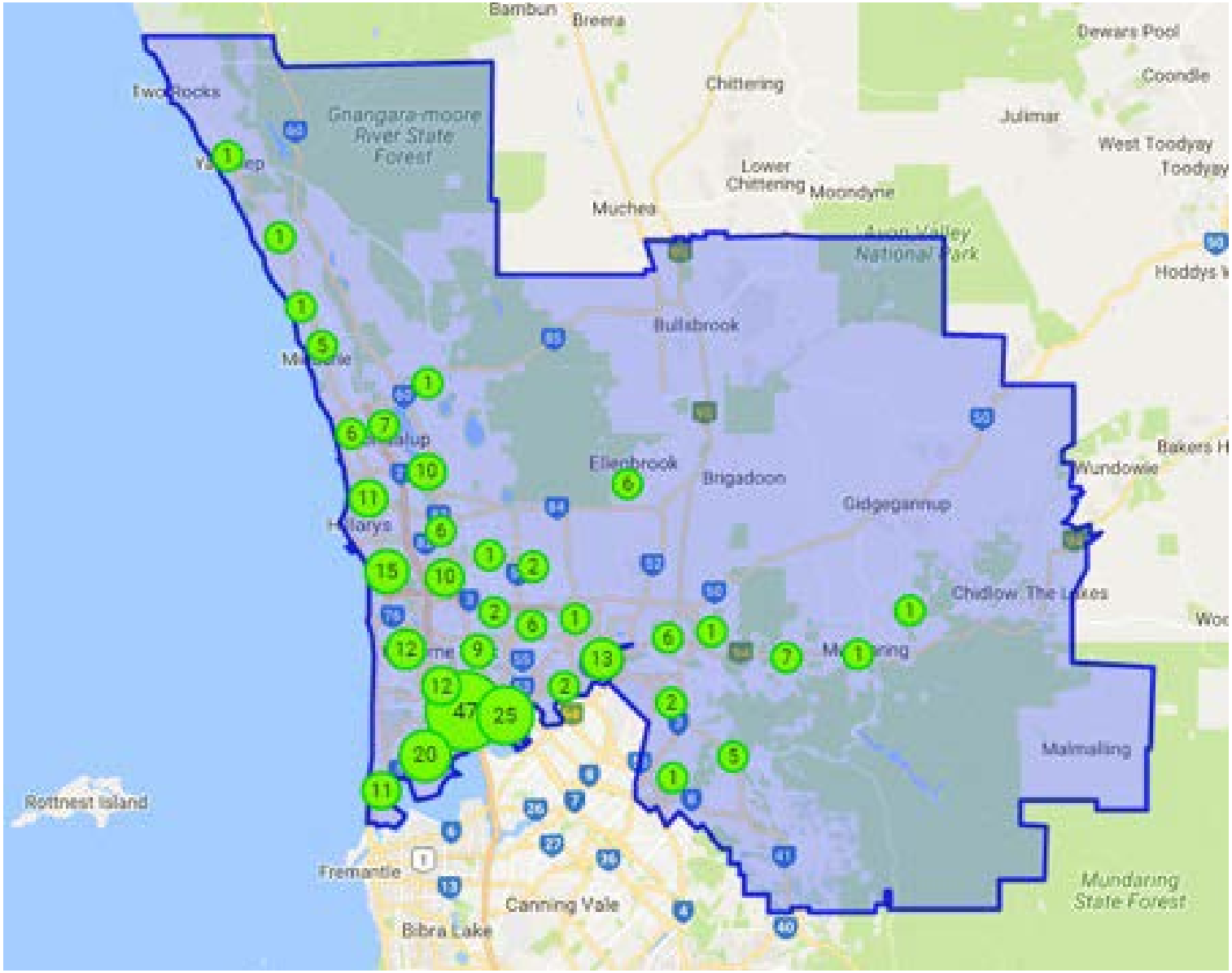
Map 3. GP services, Perth North PHN, 2016 (NHSD, 2016).

Appendix B

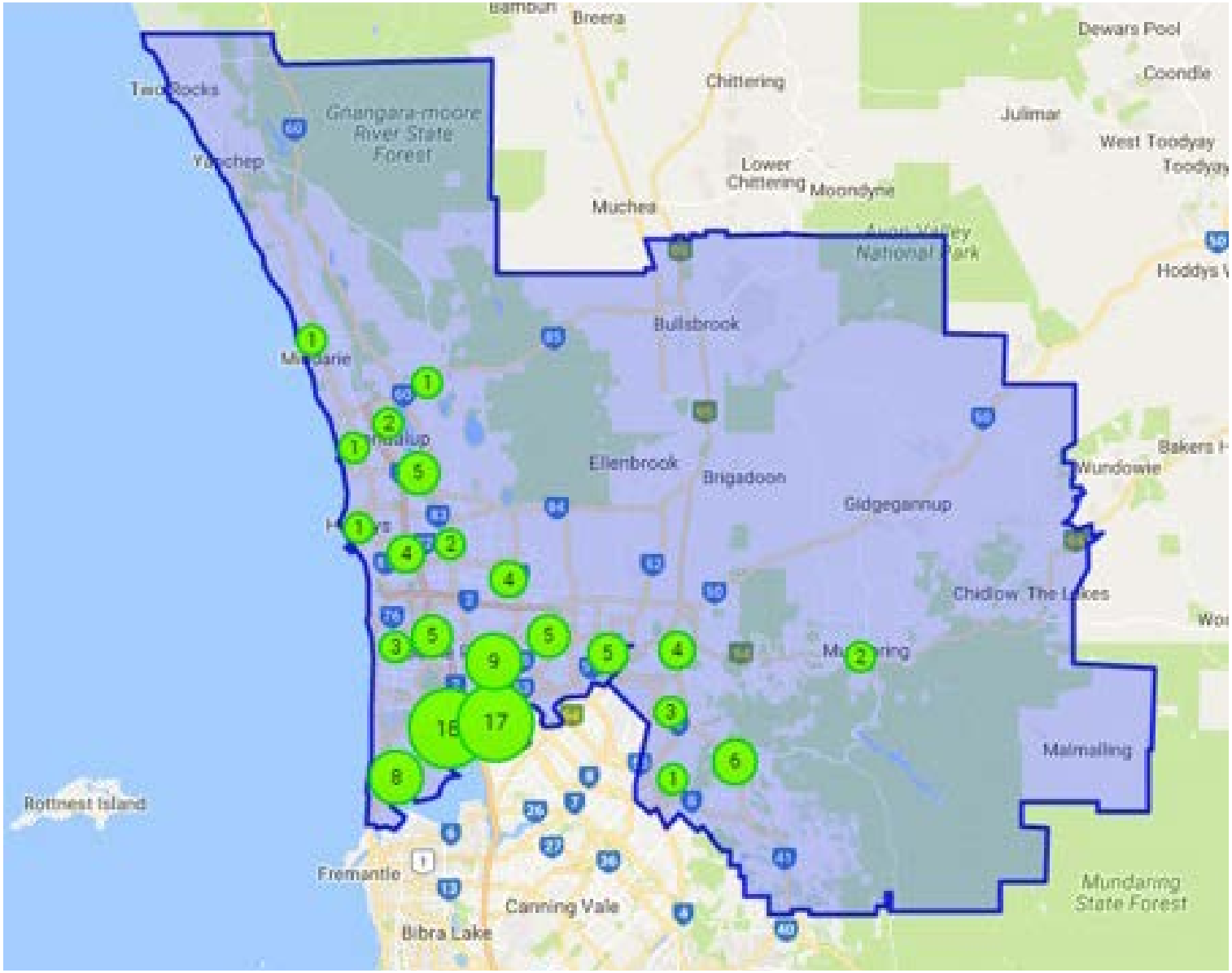
Maps in the appendices indicate the supply of selected primary health providers across the North PHN catchment.



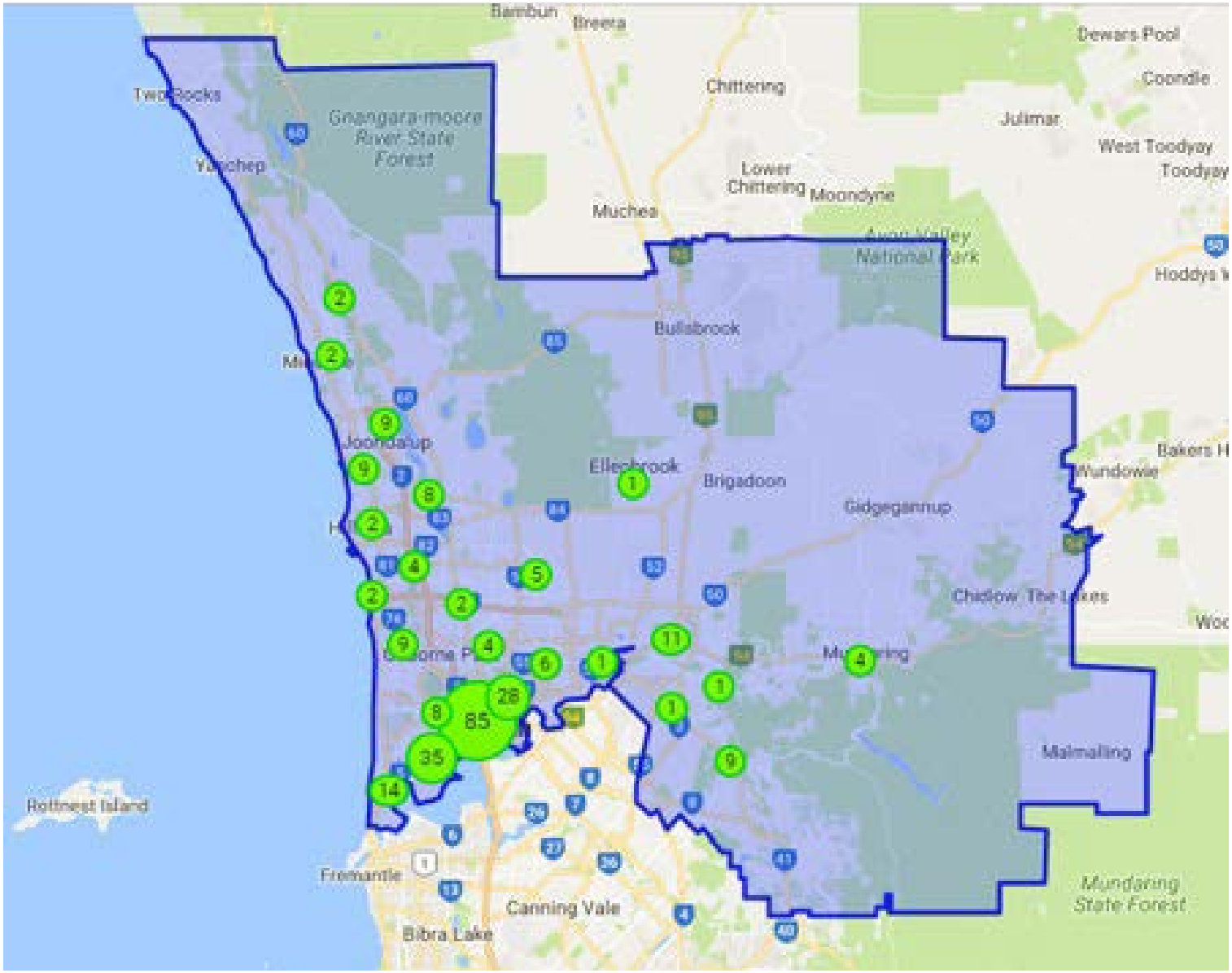
Map 4. Pharmacy services, Perth North PHN, 2016 (NHSD, 2016).



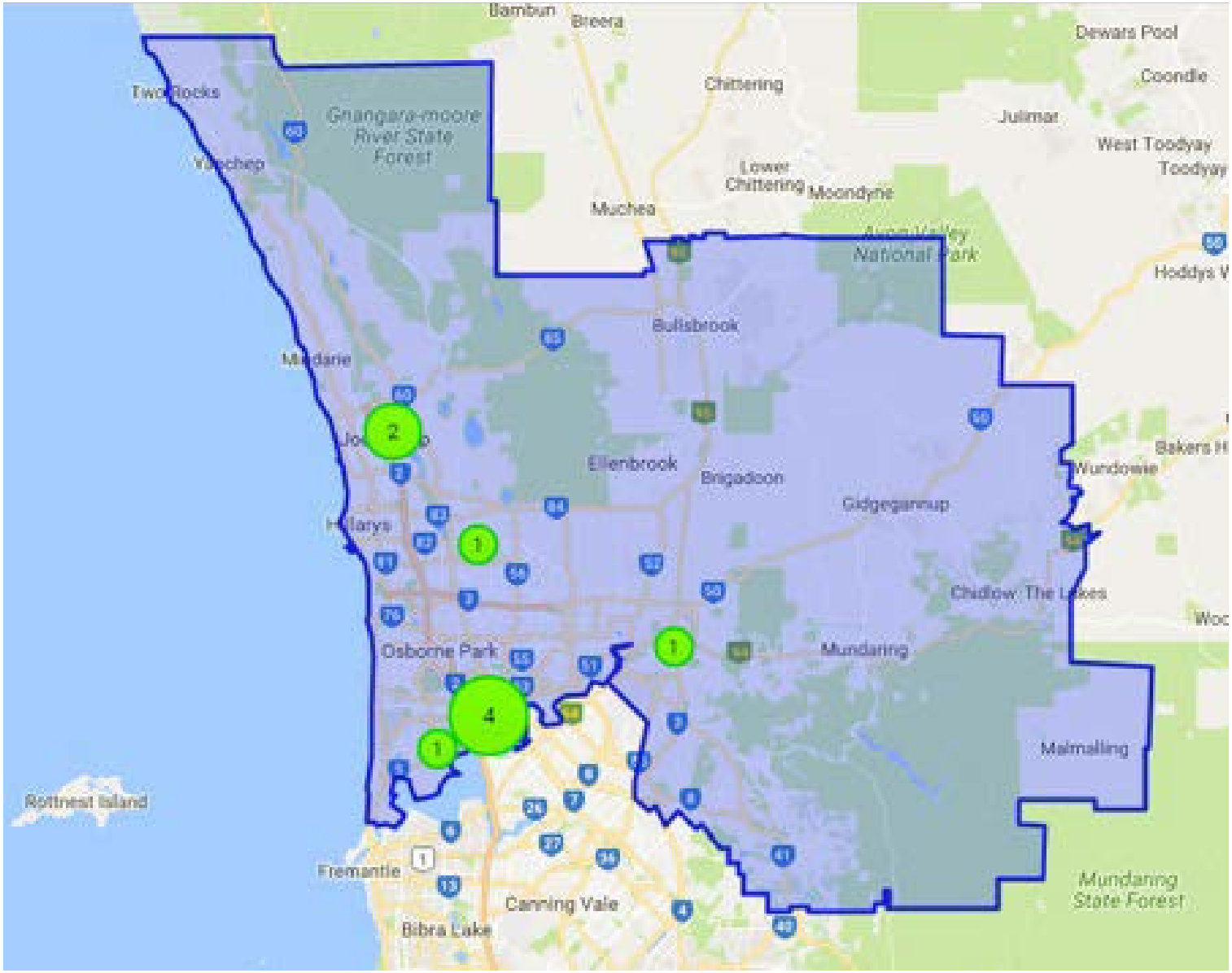
Map 5. Physiotherapy services, Perth North PHN, 2016 (NHSD, 2016).



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



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



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

WAPHA
WA Primary Health Alliance

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phn PERTH NORTH
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phn COUNTRY WA
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This information is available in an alternative format on request Ph: 6272 4900

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