



**Australian Government**  
**Department of Health**



An Australian Government Initiative

# Primary Health Network

## Needs Assessment Reporting Template

### *Perth North PHN - Core*

**Version 2.0, published 28 February 2018**

The November 2017 PHN Needs Assessments were constructed using data from a wide range of sources, much of which is in the public domain. WA Primary Health Alliance (on behalf of Country WA PHN, Perth North PHN and Perth South PHN) also enjoys data sharing arrangements with a number of organisations, including WA Health and the Commonwealth Department of Health and Aging. These agencies provide sensitive and confidential data which underpin the Needs Assessments. This document has therefore been amended to remove confidential and sensitive data. The broad content and conclusions remain unchanged from the original document. For any queries relating to the underlying data sources, please contact Dr Christina Read, [christina.read@wapha.org.au](mailto:christina.read@wapha.org.au).

Perth North PHN Core Needs Assessment 2.0

Version 1.1 submitted to the Australian Government Department of Health on 15 November 2017

Version 2.0 published 28 February 2018

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# Section 1 – Narrative

## *Needs Assessment process and issues*

This updated Needs Assessment Template (Phase 3) for Perth North PHN consolidates the key themes and issues of the region's population health and service needs. As part of the iterative nature of needs assessments, there has been further investigation of the data, in particular in sub-regional areas of greatest unmet needs.

This Needs Assessment Template for Core provides updated patterns and trends in health demand and service supply. It identifies health priorities based on a good understanding of the health care needs of the communities within the Perth North PHN region and is informed by community consultation, stakeholder engagement and market analysis. This is the first time the PHN has reported separately for Core, Mental Health and Alcohol & Other Drugs (AOD) on the health needs of its local populations. While this is an independent Report, information will be considered in conjunction with the other two Reports in recognition of the holistic needs of people living in places where health demand is high and service supply inadequate.

As identified (Sections 2 & 3), it is most frequently disadvantaged and vulnerable people who have the poorest health outcomes and are most likely to develop chronic conditions leading to co- and tri-morbidities. Intervening at the earliest possible point is likely to have the greatest long-term impact. In this Needs Assessments we have consolidated our long-term expected outcomes and will work towards the collection of meaningful measures to determine how PHN commissioning is working towards effective and efficient outcomes for people and the system.

The priorities identified in this Needs Assessments (Section 4) will contribute to the development and implementation of an annual Activity Work Plan to address national and PHN specific priorities relating to patient needs and service availability gaps in the Perth North PHN region. The PHN will not necessarily lead all the options but intends to be an integral part of the process, working in collaboration with key stakeholders.

Building on existing work undertaken by WA Primary Health Alliance (WAPHA) and Curtin University (Curtin) the trends in demand, supply and costs of health care in Perth North PHN have been further explored from a range of data and information. We considered the following types of information:

- Determinants of health and disadvantaged groups
- Health status and outcomes by condition
- Comorbidities and rising-risk population groups
- Specific health needs of Aboriginal and ageing populations
- Cancer screening rates and childhood immunisations
- Workforce and service mapping
- Service utilisation including non-urgent ED attendances and Potentially Preventable Hospitalisations (PPHs)
- Digital health uptake and utilisation.

A wide range of data sources, available publicly or on request from data custodians, informed the Needs Assessment. Drawing on quantitative and qualitative data has provided rich insight into current demand and service provision. The quantitative analysis aims to achieve SA2 level prioritisation; however, most data sets were available at SA3. All datasets were combined to identify location of highest needs at the finest possible granularity. Datasets used were refreshed in this analysis supported by published regional, state and national data.

Qualitative evidence was collected from consultation reports, notes from community consultations, stakeholder engagement, and meeting records from Clinical Commissioning Committee (CCC), and Community Engagement Committees (CEC).

Analysis and exploration of data included:

- Estimated current prevalence and incidence of diseases across WA, and potential future trends
- Geospatial Information System (GIS) spatial mapping to explore regional variation across the demand and supply of services and estimate current access to, and availability of services against need.
- Qualitative insight obtained from consultation with community, professional and stakeholder groups with a focus on gaining greater awareness of the barriers and enablers of accessing local services.
- Consideration of the wider social and economic determinants of health.
- Identification of priority locations ('hotspots') of greatest health needs using three domains (influence of social determinants, prevalence of risk factors and disease, and poor access to and utilisation of services) to predict probable high health needs on a geographical basis.

The PHN's ongoing consultation and engagement with expert groups from across the health system allowed us to test and validate our findings. Key stakeholders include: North Metropolitan Health Service (NMHS), East Metropolitan Health Service (EMHS), Perth North PHN Clinical Commissioning Committee (CCC), Community Engagement Committee (CEC) and the PHN Council.

Priority locations (sub-regional areas) were determined where there are geographical areas of people living with poorer health status, greater number of risk factors for poor health and higher rates of potentially preventable hospitalisations (PPH).

Priority locations of greatest health needs in Perth North PHN are the sub-regional areas of:

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

#### **Further Development Work**

This place-based approach has enabled a more rigorous analysis of sub-regional issues and we will continue to delve deeper into regional areas to contextualise and address unmet needs. Perth North PHN will continue to monitor health trends across the entire PHN region and regularly report to the Clinical Commissioning and Consumer Engagement Committees.

WAPHA has developed an Outcomes Map that is being applied across commissioned services. Services will capture metrics that can provide evidence on effectiveness, efficiency and quality and safety – both for the patient and the provider - as part of the commissioning process.

#### ***Additional Data Needs and Gaps (approximately 400 words)***

Perth North PHN is a diverse region with differences between resident populations across the catchment. Synthesising data across all regions to determine potential priorities is challenging and currently available data may not fully represent health priorities in each locality.

Most data sets have some quality limitations. The main limitations relating to the data accessed for the Phase 3 Needs Assessment Report include:

- The lack of granular level data available for analysis – having access to this type of data (i.e. de-identified patient level data) would allow sophisticated modelling. The small sample sizes, and consequently large confidence intervals, for the majority of the modelled estimates at PHA levels created challenges in establishing statistical significance to the comparators (state/national/PHN or comparison areas).
- Incomplete data sets especially in relation to service provision. In many instances, the National Health Services Directory (NHSD) data is based on self-reporting, so it may be inaccurate in terms of practices and opening hours.
- Manual data set curation instead of programmatic retrieval of publicly accessible information of service providers.
- Potential under-identification of Aboriginal and Torres Strait Islander people in the available data sets. Aboriginal data has been provided at IARE level which does not match geographical boundaries for non-Aboriginal datasets.
- Changes in data coding affecting comparability over time, especially in relation to diabetes hospitalisation information.
- Time lags: some data sets are not recent thus impacting on the validity of data.
- Inconsistent ways of collecting and interpreting data means there are conflicting interpretations of data; for example, hospitalisation (PPHs, ED, admitted patient care), and MBS utilisation data are available at SA3, but not at LGA levels.
- Limited data on vulnerable populations e.g. homeless people, prison populations.
- Poor access to community and stakeholder feedback in some regions.
- Lack of quality primary care and general practice performance and activity data.
- Significant policy changes in how programs are measured and evaluated (i.e. after hours Practice Incentive Payments (PIP) resulting in incomplete analysis).
- Capture of data by boundaries is inconsistent e.g. WA Department of Health provides population projections and growth numbers to health service regions, however these do not align with Perth North and Perth South PHN boundaries.
- Limited and/or selective release of utilisation data, especially with eHealth uptake and utilization - including unexplained under-reporting or absence of Medicare Benefits Scheme (MBS) claims in certain SA3 regions, making it difficult to provide an accurate reflection of regional utilisation.

Due to limitations in primary health care information in Australia, there is currently insufficient information to fully describe who needs primary health care services, what care they receive (including where they receive it, for what reason and from whom) and the outcome. Currently it is not easy to profile 'patient journeys' as they progress through and receive services from different parts of the health system. Going forward such information could be very useful in providing insights into the overall effectiveness and efficiency of the health system.

Accurate service utilisation patterns can be challenging to determine due to a range of factors including geographical, transport and cultural access barriers. Further contextual analysis may provide additional insights to utilisation patterns. Use of linked data would further enrich the PHN's data analyses.

#### *Additional comments or feedback*

WA Primary Health Alliance (WAPHA) oversees the strategic commissioning functions of the three WA PHNs. This state-wide perspective has created substantial benefits in undertaking the Needs Assessments for all WA PHNs. Our analysis considers the differences between the individual PHNs as well as comparisons to overall state trends. Additionally, options to address needs and commissioning activities can be applied and compared across PHN boundaries.

The state-wide approach provides a platform for data sharing across organisations in a way that has not been possible historically or at least not on the current scale. This approach has been further strengthened as more stakeholders become familiar and engaged in our work, including Local Government Agencies and Area Health Services. We recognise this is an evolutionary process and each PHN has the capacity to adapt as we understand our regions in more depth.

In 2016, a Deed of Agreement was established between WAPHA and WA Department of Health. The Needs Assessment has prompted collaboration and data sharing amongst a range of government and non-government agencies (e.g. Area Health Services, local hospitals, WA Mental Health Commission and the Aboriginal Health Council of Western Australia) which will support:

- Joint planning
- Performance monitoring
- Outcome evaluations.

WAPHA have also negotiated data sharing with St John Ambulance, NPS Medicine insights and a number of General Practice organisations via the use of PenCS CAT Plus. These different data sources allow for further detailed health analytics to be undertaken and provide a rigorous framework for comprehensive needs assessment and population planning activity.

The role of the Clinical Commissioning Committees and Community Engagement Committees has been fundamental in critically reviewing the needs assessment data. This further contributes to our evolving understanding of local place-based priority health needs, and effective and efficient solutions ('options') that can be applied in the local context.

WAPHA engaged Curtin University as its academic partner to work on a number of population health, research and evaluation projects. There have been various benefits of working with an academic institution, most notably is the ready access to specialist skills sets (health economists, spatial analysts etc.) as well as the ability to store and manipulate big data sets. Curtin has recently established a Data Analytics Hub with a focus of linking big datasets within health and other systems. This development provides an opportunity for increased leverage of a successful partnership approach. Curtin will continue to work closely with WAPHA to enable comprehensive understanding of patient profiles and pathways through the health system in WA. Next steps involve a focus on evaluating the effectiveness of service provision across the PHN to determine if commissioning activity has shifted the health needs of local communities.

## Glossary – Needs Assessment

After-hours	The after-hours period refers to the time: before 8am and after 6pm weekdays; before 8am and after 12pm Saturdays; and all-day Sundays and public holidays.
ASR	Age standardised rate: a method of adjusting a crude rate to eliminate the effect of differences in population age structures.
Allied health workforce	Includes: Aboriginal Health Practitioners; Dental Practitioners; Nurses & Midwives (total and Aboriginal Health Services); Occupational Therapists; Pharmacists; Physiotherapists.
Ambulatory-sensitive hospitalisations	Certain conditions for which hospitalisation is considered potentially avoidable through preventive care and early disease management, usually delivered in a primary care setting. Also called Potentially Preventable Hospitalisations (PPHs).
Avoidable mortality	Potentially avoidable deaths comprise potentially preventable deaths and potentially treatable deaths. Potentially preventable deaths are those which are amenable to screening and primary prevention, such as immunisation, and reflect the effectiveness of the current preventive health activities of the health sector. Deaths from potentially treatable conditions are those which are amenable to therapeutic interventions, and reflect the safety and quality of the current treatment system.
CALD	Those who come from a culturally and linguistically diverse background, defined as people born in predominantly non-English speaking countries.
DRG	Diagnostic Related Group: an Australian admitted patient classification system which provides a clinically meaningful way of relating the number and type of patients treated in a hospital to the resources required by the hospital.
Factors influencing health status	Defined as a person who may or may not be sick encounters the health services for some specific purpose, such as to receive limited care or service for a current condition, to donate an organ or tissue, to receive prophylactic vaccination or to discuss a problem which is in itself not a disease or injury, or when some circumstance or problem is present which influences the person's health status but is not in itself a current illness or injury.
FASD	Fetal alcohol spectrum disorders are a spectrum of lifelong physical and neurocognitive disorders, caused by alcohol use in pregnancy.
Frequent flyers	Defined as having four or more visits per year. These patients have been shown to have more psychiatric, psychosocial, and substance abuse issues than the general population and tend to be complex to manage.
HealthPathways	A web-based information portal supporting primary care clinicians to plan patient care through primary, community and secondary health care systems within Western Australia.
IARE	Indigenous Area. Medium sized geographical units designed to facilitate the release of more detailed statistics, with names based on area/community which the boundary encompasses. There is 429 IAREs across Australia.
Ill-defined conditions	No classifiable diagnosis.
IRSEO	Indigenous Relative Socio-economic Outcome Index. Reflects relative advantage or disadvantage at the Indigenous Area level, where a score of 1 represents the most advantaged area and a score of 100 represents the most disadvantaged area.

ITC	Integrated Team Care. Program commissioned by WAPHA to contribute to improving health outcomes for Aboriginal and Torres Strait Islander people with chronic health conditions through better access to coordinated and multidisciplinary care.
LGBTQI	Those who identify as lesbian, gay, bisexual, transgender, queer, intersex
MBS	Medicare Benefits Schedule: a listing of the Medicare services subsidised by the Australian government.
Multimorbid	The occurrence of two or more chronic conditions in an individual.
Non-urgent ED attendances	Emergency Department visits which are classified as triage category 4 (semi-urgent) and category 5 (non-urgent). These categories could potentially be seen in a primary care setting.
PBS	Pharmaceutical Benefits Scheme: information on medicines subsidised by the Australian Government.
Person-centred care	Holistic care involving GPs and support services in partnership with the people they care for.
PHA	Population Health Area. Comprised of a combination of whole SA2s and multiple (aggregates of) SA2s, where the SA2 is an area in the ABS structure.
Place-based	WAPHA commissions services at a place-based level, responding to local need.
Primary health care	Primary health care is the entry level to the health system and, as such, is usually a person's first encounter with the health system.
PHN	Primary Health Network
PPH	Potentially preventable hospitalisations. An admission to hospital which may be prevented through the provision of appropriate individualised preventative health interventions and early disease management usually delivered in primary care and community settings by general practitioners (GPs), medical specialists, dentists, nurses or allied health professionals.
SA2 / SA3	Statistical Areas Level 3 (SA3s) are geographical areas that will be used for the output of regional data, including 2016 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 care' is medical care provided by a specialist or facility upon referral by a primary care physician.
SEIFA	Socio-economic Index for Areas (SEIFA) defines the relative social and economic disadvantage of the whole of population within a region.
Tertiary health care	Hospital services provided by both public and private hospitals.

## Section 2 – Outcomes of the health needs analysis

Outcomes of the health needs analysis		
Identified Need	Key Issue	Description of Evidence
<p><b>HN1.1 Poor health outcomes in disadvantaged areas. Although the level of socio-economic disadvantage in Perth North PHN is above the state average, there are several sub-regions with higher disadvantage across a range of indicators.</b></p>	<p>Socio-economic factors including poor rates of educational attainment, financial and housing instability, and low rates of employment are associated with long-term physical and mental health problems.</p>	<p>Socio-economic Index for Areas (SEIFA) defines the relative social and economic disadvantage of the whole of population within a region, and the Indigenous Relative Socio-economic Outcome Index (IRSEO) represents the Indigenous Areas (IAREs) of social and economic disadvantage among Aboriginal people. Indicators reflecting disadvantage include low income, low educational attainment, high unemployment, and reliance on welfare for income and housing support.</p> <p><b>Whole of PHN</b></p> <p><i>Socio-economic disadvantage for whole of population</i></p> <p>Above average rates of socio-economic disadvantage in Perth North PHN (SEIFA 1,045) compared to Perth South PHN (SEIFA 1,020) and Country WA PHN (SEIFA 983), state (SEIFA 1,022) and national averages (SEIFA 1,000) but with pockets of high disadvantage throughout region. More than a third of residents in Perth North PHN suffer financial stress due to mortgage or rent obligations (32.1%), higher than Perth South PHN (31.2%) and state averages (29.8%). Close to one in ten families in Perth North PHN are jobless (9.4%), with near one in six children from low income, welfare-dependent families (15.7%).</p>



## Outcomes of the health needs analysis

		<p><i>Socio-economic disadvantage for Aboriginal population</i></p> <p>Aboriginal people living in the Greater Perth area are relatively less socio-economically disadvantaged (IRSEO 40) than state (IRSEO 59) and national Aboriginal populations (IRSEO 46). However, the indicators of disadvantage are consistently poorer for Aboriginal people living in Greater Perth compared to Perth North PHN averages, with nearly one in five Aboriginal persons unemployed (17.6%), and nearly half of families solo-parented (45.1%) and jobless (42.3%).</p> <p><b>Place based</b></p> <p><i>Socio-economic disadvantage for whole of population</i></p> <p>Swan has the highest proportion of single parent (20.4%) and jobless families (11.6%), and adults relying on government assistance for rent support (14.1%). Bayswater-Bassendean has the highest proportion of adults relying on government assistance for income support (24.3%) and rent assistance (13.4%). Wanneroo has the highest rate of unemployment (8.5%), lowest rate of participation in secondary school (83.3%), with one in five children from low-income, welfare dependent families (20.0%). Stirling has the highest proportion of government housing dwellings (4.1%), with a high unemployment rate (7.0%) and high proportion of jobless families with children (11.4%).</p> <p><i>Socio-economic disadvantage for Aboriginal population</i></p> <p>Mundaring-Swan has a high proportion of children from jobless families (36.9%), with less than 80% of children aged 16 in full-time secondary school (78.9%). Swan has the lowest rate of employment among Aboriginal women (40.6%), with</p>
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Outcomes of the health needs analysis		
		nearly half of families solo-parented (45.7%). Bassendean has a high proportion of single-parent (59.5%), jobless (47.1%) and low income Aboriginal families (18.3%). Wanneroo-North-East has one of the highest rates of Aboriginal unemployment (17.6%), with two in five children from jobless families (41.3%).
<p><b>HN1.2 Vulnerable population groups need targeted support. There is a higher proportion of vulnerable people living in Perth North PHN compared to the state. Several sub-regions have higher populations of vulnerable people.</b></p>	<p>Vulnerable groups are more likely to have poor physical and mental health outcomes. Those from CALD backgrounds and with low English proficiency may experience language and cultural barriers impacting timely access to healthcare. Migrants are at higher risk of mental health concerns.</p>	<p>People in vulnerable groups are more likely than the general population to experience poor health outcomes due to physical, social, and economic factors. Vulnerable groups include those with low English proficiency, who come from a culturally and linguistically diverse background (CALD), are refugees or humanitarian migrants, are homeless, live with a severe disability or care for someone with a disability, or are from the LGBTIQI community.</p> <p><b>Whole of PHN</b></p> <p><i>CALD population</i></p> <p>Close to one in five people in Perth North PHN are born in a non-English speaking country (188,694; 18.6%) compared to the state average (16.6%), with the majority of these people born in India (2.1% of Perth North PHN population). More than one in 10 of those born in a non-English speaking country have poor English proficiency (21,764), accounting for a higher proportion of the Perth North PHN population compared to the state average (2.3% vs 1.9%).</p> <p><i>Disability and carers</i></p> <p>Slightly lower percentage of people in Perth North PHN either living with a profound or severe disability (3.9%) or providing unpaid care for someone with a disability (9.8%) compared to</p>

**Outcomes of the health needs analysis**

		<p>Perth South PHN, but similar to state averages. 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. Carers may experience declines in their physical, mental and emotional health, and adverse financial and social impacts as a result of their care-giving responsibilities. Carers frequently experience physical pain, chronic conditions and use more prescriptive medications than the general population. Physical pain may be more prevalent in carers due to the physically demanding nature of some caring roles and a lack of time to seek treatment for themselves.</p> <p><i>Homelessness</i></p> <p>Similar rates of homelessness in Perth North PHN (2,458 people) and Perth South PHN (2,444), both lower than Country WA PHN (4,696). Mental health disorders, substance abuse and suicide-related behaviour is prevalent among the homeless and perpetuates the cycle of homelessness.</p> <p><i>Refugees and migrants</i></p> <p>A total of 2,943 humanitarian migrants settled into Perth North PHN during 2010-2015<sup>6</sup>. 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.</p> <p><i>LGBTQI</i></p>
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## Outcomes of the health needs analysis

		<p>Australians of diverse sexual orientation, sex or gender identity are more likely to self-report poorer physical health than the national average, are at least two to three times more likely to experience depression or anxiety than their heterosexual peers, and two times more likely to have a high level of psychological distress than the broader community. Further research is needed to identify the health and service needs faced by the LGBTQI community in Perth North PHN.</p> <p>On 15<sup>th</sup> November 2017, the Australian Bureau of Statistics released the results of the Australian Marriage Law Postal Survey. Of the eligible Australians who expressed a view, 61.6% supported changing the law to allow same-sex couples to marry. All states and territories recorded a majority Yes response.</p> <p><b>Place-based</b></p> <p><i>CALD population</i></p> <p>Highest proportion of residents born overseas living in Bayswater-Bassendean (25.2%), Stirling (24.9%) and Perth City (24.5%), with highest proportion of those with poor English proficiency also living in these areas.</p> <p><i>Disability and carers</i></p> <p>Highest proportion of people living with a profound or severe disability in Bayswater-Bassendean (4.8%) and Stirling (4.3%), with highest proportion of those providing unpaid care for</p>
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Outcomes of the health needs analysis		
		<p>someone with a disability living in Cottesloe-Claremont (11.2%) and Mundaring (11.1%).</p> <p><i>Homelessness</i></p> <p>Highest numbers of homeless people living in Perth City (909), Stirling (419) and Wanneroo (302).</p> <p><i>Refugees and migrants</i></p> <p>The highest number of humanitarian migrants in Perth North PHN reside in Stirling (1,426), Wanneroo (691) and Swan (296).</p>
<p><b>HN1.3 Older people need targeted support. Although there is a lower proportion of people aged over 65 years living in Perth North PHN compared to the state, there are several sub-regions that have ageing populations above state averages.</b></p>	<p>Older populations have higher prevalence rates of chronic conditions and exacerbations of their conditions, leading to ED presentations, potentially preventable hospitalisations and acute care demand.</p>	<p>Older adults are typically higher users of health services as many health conditions and associated disabilities become more common with age. A study including 6,200 adults in Western Australia identified some chronic conditions as 2-4 times more prevalent in people aged over 65 years compared to the entire Western Australia sample. People over the age of 65 years also have the highest PPH rates in each of the five key conditions reviewed by the National Health Performance Authority in 2015. Palliative and end of life care will be an increasing burden on services as the older generation continues to grow, with increasing proportions of those in the older age groups.</p> <p><b>Whole of PHN</b></p> <p><i>Ageing population</i></p> <p>The proportion of residents aged 65 years and over in Perth North PHN (13.6%; 137,593) is similar to state rates (14.0%; 346,182). Although the overall proportion of the ageing</p>

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		<p>population in Perth North PHN is expected to decrease from 13.6% in 2016 to 13.2% in 2025, it is projected a total of 201,407 older adults will be living in Perth North PHN by 2025.</p> <p><i>Palliative care</i></p> <p>Perth North PHN has similar lower proportions of adults aged in the 75-79 (2.4%), 80-84 (1.7%) and 85+ (1.7%) year age groups compared to Perth South PHN, Country WA PHN and state rates states, but lower than national rates.</p> <p><b>Place-based</b></p> <p><i>Ageing population</i></p> <p>A high proportion of older adults live in Cottesloe-Claremont (18.0%), Mundaring (16.7%), Kalamunda (16.4%), Stirling (15.8%) and Bayswater - Bassendean (15.6%), with high numbers living in Stirling (30,376), Joondalup (21,937) and Wanneroo (18,637). Stirling is expected to have the highest number of residents aged over 65 years in 2025 (38,316), with a projected one in five older adults living in Mundaring (19.4%). The greatest ageing population growth rates are to occur in Wanneroo (9.9% to 12.9%) and Mundaring (16.7% to 19.4%).</p> <p><i>Palliative care</i></p> <p>High proportion of adults aged 75-85+ years living in Cottesloe-Claremont (8.4%), Stirling (7.8%) and Bayswater-Bassendean (7.2%). Particularly high expected proportion of adults aged over 85+ living in Cottesloe-Claremont (2.5%) and</p>
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		Mundaring (2.5%) by 2025, higher than anticipated state (1.7%) and national rates (2.2%).
<p><b>HN1.4 There is a need for accessible culturally secure primary care for Aboriginal people. Although there is a lower proportion of Aboriginal people living in Perth North PHN compared to state and national averages, there are several sub-regions with higher proportions of Aboriginal people.</b></p>	<p>Aboriginal people have poorer health outcomes, including early onset and poor management of long-term health conditions, high mortality and morbidity, and poorer maternal and child health outcomes.</p>	<p>The gap in health outcomes between Aboriginal and non-Aboriginal Australians is well documented, particularly around life expectancy, infant mortality, child mortality, chronic disease prevalence, potentially preventable hospitalisations and the burden of disease<sup>12</sup>. Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people who experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among Aboriginal people than non-Aboriginal people.</p> <p><b>Greater Perth and Whole of PHN</b></p> <p><i>Aboriginal population</i></p> <p>A lower proportion of Aboriginal people live in Perth North PHN (1.4%) than Perth South PHN (1.8%) and state averages (3.1%), but this still accounts for a total of 14,103 Aboriginal people.</p> <p><i>Aboriginal morbidity and mortality</i></p> <p>Aboriginal people living in Greater Perth have a lower median age of death (54.0 years) compared to the general population living in Perth North PHN (81.0 years), with younger age of mortality for Aboriginal males (51.0 years) and females (57.0 years) in Greater Perth compared to state (m: 52.0 years; f: 58.0 years) and national rates (m: 54.0 years; f: 60.0 years). Aboriginal people living in Greater Perth have higher rates of mortality due to cancer (65.2 vs 25.6 ASR per 100,000), circulatory system diseases (76.5 vs 29.7) and respiratory</p>

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		<p>diseases (14.6 vs 6.6) compared to the general population living in Perth North PHN.</p> <p><i>Hospital admissions for Aboriginal people</i></p> <p>Higher rates of hospital admissions for Aboriginal people of all ages living in Greater Perth (93,431 ASR per 100,000 Aboriginal persons) compared to state (88,572) and national averages (55,640), with particularly high volume of admissions for mental health (3,270) compared to the national average (2,371) Lower rates of ambulatory-sensitive hospitalisations (potentially preventable hospitalisations) for Aboriginal people in Greater Perth (4,168 ASR per 100,000 Aboriginal persons) compared to state (6,356) and national rates (4,581).</p> <p><i>Aboriginal maternal and child health</i></p> <p>Compared to the population state rate, Aboriginal mothers living in Greater Perth are over five times more likely to smoke during pregnancy, Aboriginal babies are 2.5 times more likely to be of low birth weight, and Aboriginal children are twice as likely to be developmentally vulnerable on one or more domains, and nearly three times as likely on two or more domains.</p> <p><b>Place-based</b></p> <p><i>Aboriginal population</i></p> <p>The highest proportion of Aboriginal people are living in Mundaring (3.6%), Swan (2.7%) and Kalamunda (1.8%), with</p>
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## Outcomes of the health needs analysis

		<p>the highest number of Aboriginal people living in Swan (3,516) and Wanneroo (2,706).</p> <p><i>Aboriginal morbidity and mortality</i></p> <p>The lowest median age of death for Aboriginal people living in IAREs of Wanneroo-North-East (46.0), Yanchep-Two Rocks (50.0 years), Bayswater (52.0 years) and Stirling (52.5 years). Particularly younger age of mortality for Aboriginal men (43.0 years) and women in Yanchep-Two Rocks (42.5 years). Highest rates of Aboriginal mortality due to cancer in Perth City (120.3 ASR per 100,000 persons), and circulatory system diseases in Mundaring-Swan View (125.2) and Bayswater (122.4).</p> <p><i>Hospital admissions for Aboriginal people</i></p> <p>High rates of total hospital admissions for Aboriginal people living in IAREs of Bayswater (409,173 ASR per 100,000 Aboriginal persons), Bassendean (152,709) and Perth (121,355), all well above the Greater Perth average (93,430). Particularly high admissions in:</p> <ul style="list-style-type: none"> <li>• Bayswater (mental health, circulatory system, respiratory system, injury/poisoning)</li> <li>• Bassendean (circulatory system, digestive system)</li> <li>• Perth (mental health, respiratory system, digestive system, injury/poisoning).</li> </ul> <p>Highest rate of ambulatory-sensitive hospitalisations (potentially preventable hospitalisations) for Aboriginal people of all ages in IAREs of Perth (6,589 ASR per 100,000 Aboriginal persons), Bayswater (6,096) and Bassendean (5,554). Particularly high rates of ambulatory-sensitive hospitalisations</p>
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Outcomes of the health needs analysis		
		<p>for Aboriginal children under 14 years of age in Swan (3,541 ASR per 100,000 Aboriginal persons), and those aged over 15 years of age in Stirling (5,627).</p> <p><i>Aboriginal maternal and child health</i> High rates of poor Aboriginal maternal health including smoking during pregnancy in IAREs of Perth (59.7%), Stirling (49.9%), Bassendean (48.3%) and Joondalup (48.3%), with poor Aboriginal child health including low birth weight babies in IAREs of Wanneroo-North-East (22.4%), Joondalup (22.2%) and Stirling (20.8%). More than half of Aboriginal children in Stirling (53.6%) and Bayswater (52.4%) are developmentally vulnerable across one or more physical, social, cognitive and emotional indicators, with more than one in four vulnerable across two or more of these indicators in Stirling (28.6%) and Swan (26.1%), both well above state and national averages for Aboriginal children and compared to non-Aboriginal children.</p>
<p><b>HN2.1 There is a need to modify lifestyle risk behaviours. There are high rates of modifiable lifestyle risk factors in children and adults across Perth North PHN. Close to four in five adults in several sub-regions have at least one lifestyle risk factor. Estimated one in five children are overweight in several sub-regions.</b></p>	<p>Targeting improvements in lifestyle behaviours has the ability to reduce modifiable risk factors to prevent and manage chronic disease, in addition to improving overall mental and physical wellbeing among children and adults.</p>	<p>Risk factors and lifestyle behaviours such as smoking, harmful alcohol consumption, physical inactivity and obesity can lead to the development and progression of chronic conditions.</p> <p><b>Whole of PHN</b></p> <p><i>Adults</i></p> <p>Nearly three in four adults (males: 71.9 ASR per 100; females: 72.7) in Perth North PHN have at least one of the four risk factors for chronic disease (obese, current smoker, low rates of physical activity, high risk alcohol consumption), slightly lower than state (male and females: 74.5 ASR per 100) and national averages (males: 75.9 ASR per 100; females: 79.2).</p>

## Outcomes of the health needs analysis

		<p>Compared to state rates for individual risk factors, Perth North PHN has:</p> <ul style="list-style-type: none"> <li>• Similar rates of overweight, with two in five males (41.8 ASR per 100) and one in three females (29.8) overweight</li> <li>• Slightly lower rates of obesity, with one in five people obese (males: 22.4 ASR per 100; females: 22.5)</li> <li>• Slightly lower rates of smoking, with one in six males (17.1) and one in nine females (11.4) current smokers</li> <li>• Lower rates of participation in physical activity, with more than two thirds of adults participating in low levels of physical activity (61.0)</li> <li>• Similar rates of high alcohol intake, with nearly one in five adults consuming at high risk levels (19.4)</li> <li>• Similar rates of adequate dietary intake, with just over half of adults consuming adequate fruit (54.8).</li> </ul> <p>Aboriginal people also have higher rates of smoking (44%), risky alcohol consumption (1.1 times more likely to have exceeded guidelines for single occasion alcohol consumption risk), obesity (66%), and psychological distress compared to non-Aboriginal people.</p> <p><i>Children</i></p> <p>Perth North PHN has slightly higher rates of childhood overweight (19.3 ASR per 100) compared to Perth South PHN (19.1), Country WA PHN (17.8), state (18.9) and national averages (18.3), but comparatively lower rates of childhood obesity (5.7 ASR per 100).</p>
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## Outcomes of the health needs analysis

		<p><b>Place-based</b></p> <p><i>Adults</i></p> <p>Compared to Perth North PHN averages, the areas with the highest rates of composite risk where both males (71.9) and females (72.7) have at least one of the four risk factors includes (ASR per 100):</p> <ul style="list-style-type: none"> <li>• Wanneroo (males: 80.6; females: 79.0)</li> <li>• Swan (males: 79.6; females 78.3)</li> <li>• Mundaring (males: 76.3; females: 74.6)</li> <li>• Kalamunda (males: 75.8; females: 74.8).</li> </ul> <p>Particularly high rates for overweight and/or obesity observed for (ASR per 100):</p> <ul style="list-style-type: none"> <li>• Overweight and obese males (42.6; 27.0) and females (31.3; 26.9) in Swan</li> <li>• Overweight males (42.5) and females (30.3) in Joondalup</li> <li>• Obese males (28.8) and females (28.7) in Wanneroo.</li> </ul> <p>Particularly high rates of smokers in Swan (males: 21.3; females 14.5) and Mundaring (males: 21.0; females 13.2), with high rates of risky alcohol consumption in Cottesloe-Clairemont (26.3) and Mundaring (25.0).</p> <p><i>Children</i></p>
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Outcomes of the health needs analysis		
		<p>Particularly high rates of childhood overweight and/or obesity observed for (ASR per 100):</p> <ul style="list-style-type: none"> <li>• Overweight and obese males (24.8; 7.4) and females (17.1; 7.5) in Wanneroo</li> <li>• Overweight males (23.6) and females (16.6) in Joondalup</li> <li>• Obese males (6.9) and females (7.1) in Swan.</li> </ul>
<p><b>HN3.1 There is a need to access relevant primary care for people living with chronic conditions. Prevalence of chronic conditions are evident across Perth North PHN. Some sub-regions have large numbers of people living with one or more chronic condition.</b></p>	<p>People living with chronic conditions are at risk of developing secondary conditions (comorbidities) and more likely to die prematurely. People living with multiple chronic conditions have higher levels of health care needs, and experience poorer long-term health outcomes.</p>	<p>Chronic conditions vary in severity but can impact on a person's functional capacity and quality of life. Half of all Australians are living with a chronic condition (arthritis; asthma; back pain and problems; cancer; cardiovascular disease; chronic obstructive pulmonary disease; diabetes; and mental health conditions), with nearly a quarter of Australians suffering from two or more of these chronic conditions. Those living with at least one chronic condition are more likely to die prematurely, and those living with multiple long-term conditions (comorbidities) have poorer overall health outcomes and higher rates of engagement with health services and healthcare costs, including potentially preventable hospitalisations.</p> <p><b>Whole of PHN</b></p> <p><i>Chronic conditions</i></p> <p>44.4% of people in Perth North PHN have reported living with at least one chronic condition, and 60.2% of Aboriginal Australians in Western Australia have been diagnosed with at least one chronic condition. Perth North PHN residents have a</p>

## Outcomes of the health needs analysis

		<p>similar rate of practice-diagnosed chronic conditions compared to Perth South PHN and state rates.</p> <p>Perth North PHN has similar prevalence of chronic conditions compared to the state, including diabetes (5.5 ASR per 100 vs 5.5), mental health conditions (13.6 vs 14.0), circulatory system diseases (15.1 vs 15.7) and respiratory system diseases (30.4 vs 30.3).</p> <p><i>Comorbidity</i></p> <p>Perth North PHN has similar rates of general practice diagnosed conditions compared to the state. This trend is similar across all categories, including diagnoses of one, two, three, four or more chronic conditions.</p> <p><i>Median age of death and avoidable deaths</i></p> <p>The median age of premature death in Perth North PHN is 81 years, similar to Perth South PHN and national rates, and slightly higher than the state rate of 80 years. Perth North PHN has lower rates of avoidable death from most chronic diseases compared to state rates, with the most prevalent cause of avoidable death due to circulatory system disease (29.7 ASR per 100,000), cancer (25.6), and ischemic heart disease (20.3).</p> <p><b>Place-based</b></p> <p><i>Chronic conditions</i></p> <p>Kalamunda and Stirling have the highest proportion of chronic disease burden in Perth North PHN, with consistently higher rates across most chronic conditions, followed by Swan and</p>
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## Outcomes of the health needs analysis

		<p>Mundaring. High rates of specific chronic conditions in (ASR per 100):</p> <ul style="list-style-type: none"> <li>• Kalamunda (high blood cholesterol, respiratory system diseases, asthma, musculoskeletal)</li> <li>• Stirling (diabetes, high blood cholesterol, arthritis)</li> <li>• Swan (diabetes, circulatory system diseases, asthma, musculoskeletal)</li> <li>• Mundaring (COPD, musculoskeletal, arthritis).</li> </ul> <p><i>Comorbidity</i></p> <p>Kalamunda and Perth City have consistently high rates of practice diagnosed chronic conditions in all categories, ranging from one condition to four or more conditions. Wanneroo and Swan have a consistently high volume of diagnosed chronic conditions across all categories of comorbidity, together accounting for nearly a third of all diagnosed chronic conditions in Perth North PHN .</p> <p><i>Median age of death and avoidable deaths</i></p> <p>Lowest median age of premature death is in Swan (77 years), Mundaring (77 years), Kalamunda (78.0) and Wanneroo (79.0), all below Perth North PHN, state and national averages. High rates of avoidable death across conditions in:</p> <ul style="list-style-type: none"> <li>• Swan (cancer, diabetes, circulatory system disease, heart disease, respiratory system disease, COPD)</li> <li>• Mundaring (circulatory system disease, cerebrovascular disease, suicide)</li> <li>• Kalamunda (cancer, respiratory disease, COPD, suicide)</li> </ul>
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Outcomes of the health needs analysis		
		<ul style="list-style-type: none"> <li>• Wanneroo (diabetes, circulatory system disease).</li> </ul>
<p><b>HN3.2 People with chronic conditions need to be able to effectively self-manage. Evidence across the PHN of poor self-management of chronic conditions and poor medication compliance.</b></p>	<p>The majority of chronic conditions require effective management, including medication management, to prevent progression and to avoid potentially preventable hospitalisations</p>	<p>Self-management, and self-management support provided by primary care providers, is required for best-practice chronic condition management. Education, implementation of skills and strategies, and the ability to overcome challenges is the cornerstone to empowering patients to manage their conditions for optimal long-term health. This includes patients engaging with primary care providers to collaboratively manage and treat their conditions, having a good understanding of their condition, and complying with medication.</p> <p><b>Whole of PHN</b></p> <p>There is evidence of poor self-management, personal responsibility and self-efficacy of some cohorts across Perth North PHN, with poor medication compliance, lack of understanding of medication effectiveness, and improved access needed for self-management programs<sup>17</sup>. Lower levels of individual health literacy are also associated with higher rates of hospitalisation and use of emergency care, poorer ability to take medications appropriately and interpret health labels and messages, and poor knowledge of their condition for self-management. It has been estimated that people with low levels of individual health literacy are between one and a half to three times more likely to experience an adverse outcome. Adequate levels of self-literacy is required for those with chronic conditions to understand care plans, medication, lifestyle changes, and possible long-term health outcomes of the condition to reduce acute phases and disability. Data for health literacy levels in Western Australia and across Perth North PHN are not available and further research is needed to</p>



## Outcomes of the health needs analysis

		<p>identify specific sub-regions where low levels of health literacy in Perth North PHN may be contributing to poor chronic disease self-management and medication compliance.</p> <p><i>Primary care prescriptions for chronic disease</i></p> <p>Overall, Perth North has similar rates per 100 population of prescriptions for chronic disease (mental health, circulatory, diabetes, musculoskeletal, high blood cholesterol and respiratory) compared to Perth North PHN and Country WA PHN.</p> <p><i>Potentially Preventable Hospitalisations (PPHs) for chronic conditions</i></p> <p>From a total of 2,300 PPHs (ASR per 100,000) in Perth North PHN in 2015-2016, 1,003 (ASR per 100,000) were for chronic conditions, slightly lower than Perth South PHN (1,124) and national rates (1,205). More than 30% of chronic PPHs in Perth North PHN account for short stays with same day hospitalisation and discharge (30.7%).</p> <p><i>Acute hospital admissions related to chronic conditions</i></p> <p>Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates higher rates of acute admissions for drug and alcohol conditions and mental health conditions in Perth North PHN compared to Perth South PHN.</p> <p><b>Place based</b></p>
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## Outcomes of the health needs analysis

		<p><i>Primary care prescriptions for chronic disease</i></p> <p>The highest rates (per 100 population) for chronic condition prescriptions related to mental health, circulatory system, diabetes, musculoskeletal, high blood cholesterol and respiratory conditions in Kalamunda, Perth City and Swan. The highest volume of prescriptions across all chronic conditions are in Joondalup, Swan and Wanneroo.</p> <p><i>Potentially Preventable Hospitalisations (PPHs) for chronic conditions</i></p> <p>High volume of PPHs for chronic conditions in 2015-2016 for Swan (1,387 ASR per 100,000), Bayswater-Bassendean (1,253) and Wanneroo (1,137). High rates of specific chronic conditions observed in these regions for<sup>11</sup>:</p> <ul style="list-style-type: none"> <li>• Swan (diabetes complications, COPD, angina, iron deficiency anaemia)</li> <li>• Bayswater-Bassendean (diabetes complications)</li> <li>• Wanneroo (diabetes complications, COPD, angina, congestive heart).</li> </ul> <p><i>Acute hospital admissions related to chronic conditions</i></p> <p>High rates of acute hospital admissions for drug and alcohol conditions and mental health conditions in Perth City , and Wanneroo compared to Perth North PHN . High rates of acute hospital admissions for mental health conditions in Perth City , Stirling and Wanneroo .</p> <p>High rate of utilisation of primary care prescriptions in Swan, Perth City, Wanneroo, Kalamunda and Joondalup suggests</p>
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Outcomes of the health needs analysis		
		<p>these residents may be engaging with primary care to manage their chronic conditions, but with high rates of potentially preventable hospitalisations and acute hospitalisations for chronic conditions in Swan, Perth City and Wanneroo these residents may not be adequately managing their medication. Conversely, high potentially preventable hospitalisations and acute hospitalisations for chronic conditions in Stirling and Bayswater-Bassendean with relatively average to low rates of primary care prescriptions suggests these residents may not be engaging in primary care to effectively manage their chronic conditions with medication.</p>
<p><b>HN4.1 There is a need to prevent the development of co-occurring physical and mental chronic conditions. There is evidence across the PHN of people living with co-occurring chronic conditions including physical, mental and alcohol and other drug co- and tri-morbidities.</b></p>	<p>People with chronic conditions are at higher risk of developing co-occurring chronic conditions (physical and mental) that will exacerbate their pre-existing conditions.</p>	<p>Based on various national and international studies, it is estimated that at least 20 to 50 per cent of people with an alcohol or other drug problem also have a co-occurring mental illness. Alcohol consumption is associated with cardiovascular diseases, mental health, some cancers, injury, osteoporosis, and oral disease. Alcohol interferes with insulin production and worsens conditions associated with diabetes (e.g., advanced neuropathy and liver diseases. Binge drinking and continued alcohol use in large amounts has also been associated with problems that frequently lead to ED attendances and potentially preventable hospitalisations, including: unintentional injuries such as car crashes, falls, burns, drownings, alcohol poisoning, high blood pressure, stroke and other heart-related diseases, liver diseases, ulcers, gastritis (inflammation of stomach walls), cancer of the mouth and throat and psychosocial problems.</p> <p><b>Whole of PHN</b></p> <p><i>Chronic conditions and Mental Health and AOD</i></p>

**Outcomes of the health needs analysis**

		<p>A strong association is observed between population prevalence of excessive alcohol consumption and with the prevalence of current smokers (<math>r=0.7513</math>). A moderate association is observed between population prevalence of excessive alcohol consumption and: fair or poor self-assessed health status (<math>r=0.6750</math>); high or very high level of psychological distress (<math>r=0.6148</math>); obesity prevalence (<math>r=0.6507</math>); estimated prevalence of diabetes (<math>r=0.5760</math>), circulatory disease (<math>r=0.5537</math>); musculoskeletal conditions (<math>r=0.5491</math>); and prescription drug use (<math>r=0.5091</math>). Excessive alcohol consumption is also associated with Potentially Preventable Hospitalisations (PPHs) related to cellulitis (<math>r=0.5534</math>), COPD (<math>r=0.5416</math>), diabetes complications (<math>r=0.5691</math>), iron deficiency anaemia (<math>r=0.5014</math>), and kidney and UTI (<math>r=0.5179</math>).</p> <p><b>Place-Based</b></p> <p><i>Chronic conditions and Mental Health and AOD</i></p> <p>Excessive alcohol consumption is likely to show stronger links to the development of physical and mental conditions in Mundaring, Swan and Joondalup (particularly SA2 Craigie-Beldon<sup>1</sup>).</p>
<p><b>HN4.2 There is a need for increased patient awareness to prevent high ED attendances for non-urgent conditions in several sub-regional areas across Perth North PHN.</b></p>	<p>People presenting to ED with non-urgent conditions may lack access, availability, or awareness of appropriate and affordable primary care services.</p>	<p>High rates of non-urgent ED attendances indicate there may be a gap in primary care services, both during and after-hours, or lack of patient awareness of where to seek the most appropriate healthcare support.</p> <p><b>Whole of PHN</b></p> <p><i>Non-urgent ED attendances</i></p>

## Outcomes of the health needs analysis

		<p>Perth North PHN had a higher volume and proportion of non-urgent ED presentations than Perth South PHN . Top major diagnosis codes for non-urgent ED presentations in Perth North PHN included injury and poisoning , ill-defined conditions and factors influencing health status .</p> <p><i>Non-urgent ED attendances for Aboriginal people</i></p> <p>Perth North PHN had slightly lower volume and proportion of non-urgent ED presentations by Aboriginal patients per year compared to Perth South PHN. Top major diagnosis codes for non-urgent ED presentations for Aboriginal people in Perth North PHN in 2013-15 included injury and poisoning, factors influencing health status and skin conditions .</p> <p><b>Place based</b></p> <p><i>Non-urgent ED attendances</i></p> <p>The highest volume of non-urgent ED presentations was in Wanneroo, Stirling and Joondalup . The highest proportion of presentations (per 1,000 persons per year) was in Wanneroo and Swan . The highest proportion of presentations for specific diagnosis categories was observed in:</p> <ul style="list-style-type: none"> <li>• Wanneroo (injury and poisoning; ill-defined conditions)</li> <li>• Stirling (infectious diseases; respiratory conditions)</li> <li>• Joondalup (injury and poisoning)</li> <li>• Swan (ill-defined conditions; infectious diseases).</li> </ul> <p><i>Non-urgent ED attendances for Aboriginal people</i></p>
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Outcomes of the health needs analysis		
		<p>The highest volume of non-urgent ED presentations for Aboriginal population was in Swan and Stirling . The highest proportion of Aboriginal presentations per 1,000 Aboriginal persons per year was in Perth City and Bayswater-Bassendean . The highest proportion of Aboriginal presentations for specific diagnosis categories was observed in:</p> <ul style="list-style-type: none"> <li>• Swan (injury and poisoning; ill-defined conditions)</li> <li>• Stirling (ill-defined conditions)</li> <li>• Perth City (factors influencing health status; mental disorders)</li> <li>• Bayswater-Bassendean (factors influencing health status; skin conditions).</li> </ul>
<p><b>HN4.3 Need for earlier intervention in a range of conditions to prevent higher than state rates for specific potentially preventable conditions (acute, chronic and vaccine preventable) in a number of sub-regions.</b></p>	<p>Potentially preventable hospitalisations may be treated, or better managed at an earlier stage, in primary care.</p>	<p>Potentially preventable hospitalisations (PPHs) are hospitalisations that could have been avoided by timely access and appropriate provision of primary health care. PPHs are categorised as acute, chronic or vaccine preventable. PPHs can be a reflection of under-utilised primary care and the effectiveness of community-based health care services.</p> <p><b>Whole of PHN</b></p> <p><i>Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions</i></p> <p>Perth North PHN had a slightly lower rate of PPHs in 2015-16 (2,300 ASR per 100,000) compared to Perth South PHN (2,400), Country WA PHN (3,044) and national rates (2,643). This trend was maintained across PPHs for chronic (1,003 ASR per 100,000) and vaccine preventable conditions (134), but</p>

## Outcomes of the health needs analysis

		<p>total PPHs for acute conditions were slightly higher in Perth North PHN (1,176) than Perth South PHN (1,156).</p> <p><b>Place-based</b></p> <p><i>Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions</i></p> <p>High overall rates of PPHs in Swan (2,880 ASR per 100,000), Bayswater-Bassendean (2,535), Wanneroo (2,521) and Mundaring (2,365). High rates of:</p> <ul style="list-style-type: none"> <li>• Acute PPHs in Swan (1,350), Wanneroo (1,240) and Mundaring (1,194)</li> <li>• Chronic PPHs in Swan (1,387), Bayswater-Bassendean (1,253) and Wanneroo (1,137)</li> <li>• Vaccine preventable PPHs in Bayswater-Bassendean (187), Swan (161) and Wanneroo (156).</li> </ul> <p>Particularly high rates of PPHs for:</p> <ul style="list-style-type: none"> <li>• The majority of acute and chronic conditions in Swan SA2s</li> <li>• Acute convulsions, the majority of chronic conditions, and vaccine preventable conditions in Wanneroo SA2s</li> <li>• Acute convulsions, chronic diabetes complications and COPD, and vaccine preventable conditions in Stirling</li> <li>• Chronic diabetes complications in Bayswater-Bassendean SA2s</li> </ul>
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Outcomes of the health needs analysis		
		<ul style="list-style-type: none"> <li>• Vaccine preventable conditions in Mundaring SA2s</li> <li>• Acute dental conditions in Cottesloe-Claremont, Joondalup and Perth City SA2s.</li> </ul>
<p><b>HN4.4 Need for some conditions to be treated in primary care at an earlier stage to prevent high rates (volume) of acute hospitalisations</b></p>	<p>Some acute hospitalisations may be treatable - or treated at an earlier stage - in primary care. This is better for the patient and the system.</p>	<p>Acute hospital separations provide an indication of the volume of short-term hospitalisations provided to care for a severe episode of illness or a condition requiring urgent medical attention. Multidisciplinary acute care provided in a primary care setting may avoid the need or reduce the rate of acute hospitalisations required in secondary and tertiary settings.</p> <p><b>Whole of PHN</b></p> <p><i>Acute hospital admissions by volume</i></p> <p>The total volume of acute hospital admissions in Perth North PHN from 2014-2015, is slightly lower than Perth South PHN and Country WA PHN .</p> <p><i>Acute hospital admissions by Diagnostic Related Group (DRG)</i></p> <p>The top diagnostic related categories (DRGs) of acute hospital admissions in Perth North PHN included acute infections, cardiovascular disease , and gastrointestinal conditions .</p> <p><b>Place-based</b></p> <p><i>Acute hospital admissions by volume</i></p>



## Outcomes of the health needs analysis

		<p>Highest volume of acute admissions per 1,000 resident population for Wanneroo , Bayswater-Bassendean , Stirling and Swan .</p> <p><i>Acute hospital admissions by Diagnostic Related Group (DRG)</i></p> <p>Particularly high rates of admissions (DRGs per 1,000 resident population) for:</p> <ul style="list-style-type: none"><li>• Wanneroo (acute infections; gastrointestinal; mental health; genitourinary)</li><li>• Bayswater-Bassendean (acute infections; cardiovascular; respiratory; genitourinary)</li><li>• Stirling (mental health; drug and alcohol)</li><li>• Swan (acute infections; cardiovascular disease; gastrointestinal; respiratory).</li></ul>
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## Section 3 – Outcomes of the service needs analysis

Outcomes of the service needs analysis		
Identified Need	Key Issue	Description of Evidence
<p><b>SN1.1 Similar supply rate of primary care providers in Perth North PHN compared to state and national rates, however lower supply of primary care services in multiple sub-regions with high socio-economic disadvantage.</b></p>	<p>Inadequate supply of primary care services to meet demand, particularly in areas of high socio-economic disadvantage where there are poor health outcomes and higher demand for primary care services.</p>	<p>Providing adequate access to primary care services is particularly important to reduce the pressure on secondary and tertiary systems and will therefore be an overall increase in primary care service demand due to the growing population, particularly in sub-regions with higher than average growth rates of older adults.</p> <p>At a clinical level, primary care usually involves the first (primary) layer of services encountered in health care and requires teams of health professionals working together to provide comprehensive, continuous and person-centred care. Primary health care is first level care provided by health services and systems with a suitably trained workforce comprised of multi-disciplinary teams supported by integrated referral systems.</p> <p><b>Whole of PHN</b></p> <p><i>Allied health workforce supply</i></p> <p>Slightly higher rates of dentists (12.80 per 10,000 resident population), nurses and midwives (173.41), occupational therapists (13.18), physiotherapists (16.96) and pharmacists (14.53) in Perth North PHN compared to Perth South PHN, state and national rates, but similar supply of GPs (9.43) and lower supply of Aboriginal health practitioners (0.12).</p>

Outcomes of the service needs analysis		
		<p><b>Place-based</b></p> <p><i>Allied health workforce supply</i> Low health professional to population ratios across nearly all disciplines in Mundaring, Swan, Wanneroo, Kalamunda and Bayswater-Bassendean. Highest GP to population ratios in Perth City (19.82 per 10,000 resident population), Cottesloe-Claremont (16.51), Joondalup (10.54), with all other regions lower than state (8.98) and national averages (9.57) averages. Particularly low GP to population ratios in Mundaring (5.20 per 10,000 resident population), Stirling (6.49), Wanneroo (6.89), Bayswater-Bassendean (6.99) and Kalamunda (7.40).</p>
<p><b>SN1.2 Lack of appropriately targeted services across Perth North PHN for vulnerable groups, particularly sub-regions with culturally and linguistically diverse populations.</b></p>	<p>Services should be targeted to specific high-risk groups, to increase accessibility and acceptability for vulnerable people.</p>	<p>Vulnerable people have less access to the right services as some services may not be culturally accessible or appropriate. There are substantial gaps in the quantitative and qualitative data available on vulnerable populations in Perth North PHN, and further research is needed to understand this issue.</p> <p><b>Whole of PHN</b></p> <p>There is a lack of multidisciplinary community based services in some areas of Perth North PHN which may impact on the support available to assist people to manage their social, cultural and economic circumstances. Consultation with local stakeholders identified a particular lack of culturally appropriate services for humanitarian entrants, CALD populations, residents with poor English proficiency and newly arrived immigrants. Access to after-hours primary care services is also a specific area of concern for people from CALD backgrounds across Perth North PHN. Further mapping is required to ascertain the full range of services offered to vulnerable communities to identify program and service gaps for vulnerable groups across the region.</p> <p><b>Place-based</b></p>

Outcomes of the service needs analysis		
		A study including over 400 local Wanneroo residents indicated a need for increased services and resources to meet the needs of culturally and linguistically diverse communities in Wanneroo. There are no also existing CALD specific resources or groups evident in the Bayswater region, where there is the highest proportion of the CALD population in Perth North PHN (25.2% of Bassendean-Bayswater population is born overseas).
<b>SN1.3 Lack of appropriately targeted services across Perth North PHN for older adults who use high rates of primary care resources, particularly GP services.</b>	As the population of older adults continues to grow, there will be an increasing number of older adults accessing primary care for complex chronic condition management, particularly GP services.	<p>The use of primary health resources by older adults has increased considerably in the past 15 years, with rates higher than what would be expected from the population growth. This is largely due to people living longer, more people acquiring and being diagnosed with more conditions, and each condition being managed for a longer period of time. Older adults (aged 65 years and over) are significantly more likely to have used a primary, hospital- based or allied health service than younger adults (16 to 64 years), but significantly less likely to have used mental or alternative health services.</p> <p>In particular, GPs play a significant role in the lives of many older adults as primary health care providers and as a point of referral to other health services. In 2012-13, older adults in Australia visited their GP 10.4 times on average, with people over 60 attributing for 57% of those who attended a GP more than 20 times, and 45% of those who attended between 12 and 19 times.</p> <p>In 2015-16, people aged 65 years and over accounted for 41% of the separations and 48% of patient days in public and private hospitals. Between 2011-12 and 2015-16, there were large increases in separations for people aged 65 and over. Separations increased by 26% for people aged 65 to 74 years, and by 22% for people aged 85 and over, with both groups experiencing a 6% annual increase which is a faster increase than the population growth for the same period.</p>

**Outcomes of the service needs analysis**

		<p><b>Whole of PHN</b></p> <p>Despite a growing ageing population in Perth North PHN, the proportion of aged care places (per 1,000 people aged over 70 years) is 71.6, compared to the state (73.3) and national rates (82.6). Qualitative feedback indicates there is also difficulty recruiting GPs to work in residential aged care facilities across Perth North PHN. Improved access to a GP after hours in residential aged care, particularly for phone orders for medications, would assist staff to manage residents in aged care facilities rather than transferring them to an emergency department.</p> <p><b>Place-based</b></p> <p>The areas with the lowest residential aged care places per 1,000 population aged over 70 years are: Kalamunda (38.2), Mundaring (43.6) and Joondalup (55.6). These areas are also projected to have an increasing ageing population by 2025<sup>1</sup>. The Perth North Coastal region has a more complex ageing cohort and is also a popular place to retire, compounding additional strain on services for older adults in this region. Distances required to travel to access health care services in this region may also pose considerable challenges to the disabled and ageing, and services will be challenged to remain highly accessible for these target groups<sup>17</sup>. Further research is needed to identify specific service gaps and sub-regions requiring targeted attention to ensure the services needs of the ageing population are met.</p>
<p><b>SN1.4 Lack of culturally safe services across Perth North PHN for Aboriginal people, particularly in sub-regions with higher density Aboriginal populations.</b></p>	<p>All services should be accessible and culturally safe for Aboriginal people to encourage help-seeking behaviours</p>	<p>Access to mainstream health services is more difficult for the Aboriginal population due to socio-economic disadvantage, relatively poor mobility, poor record keeping, and a lack of culturally appropriate health services. The Aboriginal concept of health is not the same as Western society, and a holistic and integrated approach to Aboriginal health is required to address social determinants and better health outcomes. It is important for healthcare providers to understand differences in concepts and</p>

## Outcomes of the service needs analysis

		<p>provide targeted services that are culturally acceptable and safe for Aboriginal people.</p> <p>Multi-agency involvement in both the funding and delivery of Aboriginal Health programs leads to significant fragmentation and lack of continuity of the holistic care approach. There is a strong need to better integrate governance systems, plans, clinical registers, workforce reforms and all joint service ventures to provide person-centred care that is culturally secure for the Aboriginal community in Perth North PHN.</p> <p><b>Whole of PHN</b></p> <p>Qualitative feedback has indicated the following areas of need in Perth North PHN:</p> <ul style="list-style-type: none"> <li>• Lack of culturally safe services for Aboriginal people</li> <li>• Low trust of non-Aboriginal services that are not culturally sensitive</li> <li>• Low numbers of Aboriginal people employed in the health workforce</li> <li>• Lack of development and demonstrated commitment to Aboriginal employment.</li> </ul> <p>Specific areas of Aboriginal health service need in Perth North PHN include:</p> <ul style="list-style-type: none"> <li>• Mental Health – limited culturally appropriate services and low Aboriginal mental health practitioner workforce</li> <li>• Alcohol and other drugs – no specific support services available delivered in community</li> <li>• Prison Health – increased numbers of Aboriginal Health Workers needed within the prisons to provide a culturally appropriate and safe service</li> </ul>
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Outcomes of the service needs analysis		
		<ul style="list-style-type: none"> <li>Aboriginal Aged Care – limited services available for older Aboriginal people (55+).</li> </ul> <p><b>Place-based</b></p> <p>Recent consultation with the local Midland and Swan Aboriginal community identified a particular lack of culturally safe alcohol, drug and health services, in addition to issues with ease of access and receiving appropriate cultural understanding and support from local service provider needs<sup>32</sup>. Further research is needed across Perth North PHN to identify issues related to providing culturally safe services to meet the needs of the Aboriginal community.</p>
<p><b>SN1.5 Lack of transition programs to support people moving from one service to another and back into the community, particularly people travelling from country regions.</b></p>	<p>Services need to be integrated and collaborative in order to provide person-centred care that meets individual needs.</p>	<p>Continuity of care may be directly impacted by the transition of patients between services, into the community after hospitalisation, and for patients travelling from country regions. Lack of integrated systems and processes supporting the hand-over and transfer of patient information may result in incomplete patient profiles, leading to frustration for both providers and patients, ultimately risking quality and continuity of care. General practice also plays a fundamental role in ensuring seamless transfer of care between hospital and primary care, and between GP and allied health services to support the management of complex, chronic and comorbid conditions.</p> <p><b>Whole of PHN</b></p> <p>Qualitative feedback has identified that Western Australia has current inefficiencies in the co-ordination and integration of primary and secondary care services, leading to system-based problems including:</p> <ul style="list-style-type: none"> <li>Increased waiting times for treatment in secondary care</li> <li>High number of inappropriate referrals to secondary care</li> <li>Inefficient use of resources and lack of system integration</li> </ul>

**Outcomes of the service needs analysis**

		<ul style="list-style-type: none"> <li>• Poor discharge from secondary to primary care/general practice</li> <li>• Lack of system integration.</li> </ul> <p>There is also a high level of population flow in relation to Country WA PHN residents travelling to health services and specialist appointments in Perth North PHN. There is often a lack of integration and collaboration between services in the country and metropolitan regions, and communication back to the patient. This can create isolation, a lack of understanding and inconsistent care.</p> <p>The development of HealthPathways enables GPs to manage and refer their patients to the most appropriate local care, working to improve the integration of care across services. As of October 2017, over 300 localised HealthPathways have been developed in a variety of diagnostic categories across Western Australia, and page views by GPs have tripled in two years (9,388 in November 2015 to 21,615 in August 2017).</p> <p><b>Place-based</b></p> <p>There is limited focus on transition-out of services across Perth North PHN. Stakeholder feedback indicates issues for some in transitioning from child to adult diabetes services, and from hospital to home services for other people, people experiencing mental health issues, and homeless people in Perth North PHN<sup>17</sup>. Chronic disease management for people transitioning from prison to community provided services has also been identified as an area requiring further focus. Further research is needed to identify the extent of these transition issues in specific areas across Perth North PHN.</p>
<p><b>SN2.1 Lack of targeted early intervention in primary care across Perth North PHN. Low rates of cancer</b></p>	<p>Targeted early intervention and/or secondary prevention in primary care</p>	<p>Early treatment is the most effective way to reduce the impact of chronic and comorbid conditions. Early intervention can produce significant long-term health care savings and improve overall quality of life. Cancer</p>



**Outcomes of the service needs analysis**

**screening and childhood immunisation in several sub-regions.**

could prevent the development of chronic conditions and disease.

screening has been shown to reduce morbidity and mortality of cancer through early detection and treatment. Childhood immunisation is recommended as a safe and effective way of protecting against harmful diseases and reducing overall spread of disease. Jurisdictions are mandated to ensure childhood immunisation rates are at least 90%, with a national 'Strive for 95%' target, and this informed the 'Western Australian Immunisation Strategy 2013-2015' which outlined a framework for enhancing all aspects of immunisation program service delivery.

**Whole of PHN**

*Cancer screening*

Participation in breast cancer screening, cervical cancer screening, and bowel cancer screening is slightly higher in Perth North PHN (58.2%; 57.8%; 43.1%) compared to Perth South PHN (56.1%; 53.8%; 42.7%) and state rates (56.6%; 55.8%; 42.9%).

*Avoidable mortality by cancer*

There are high rates of avoidable deaths Perth North PHN from cancer (25.6 ASR per 100,000), although slightly lower than Perth South PHN (28.1), state (26.8) and national rates (29.5).

*Immunisation*

Fully immunised children in Perth North PHN aged one year old (93.9%) are just above state rates (93.1%), but are lower for children aged two years old (89.7%) and five years old (91.1%) Rates of immunisation is lower among one-year old (84.6%) and two-year old (80.9%) Aboriginal children in Perth North PHN compared to all children in Perth North PHN

## Outcomes of the service needs analysis

		<p>and Aboriginal children in the state, but comparatively higher by five years of age (92.9%).</p> <p><i>Potentially preventable hospitalisations for vaccine preventable conditions</i></p> <p>Similar rates of PPHs for vaccine preventable conditions in Perth North PHN (134 ASR per 100,000) compared to Perth North PHN (138), but lower than Country WA PHN (185) and national rates (199).</p> <p><b>Place based</b></p> <p><i>Cancer screening</i></p> <p>Lower screening rates for all cancers in Swan and Wanneroo compared to Perth North PHN averages. Low rates of screening for bowel cancer also in Perth City (41.4%) and Bayswater-Bassendean (41.5%), breast cancer in Cottesloe-Claremont (49.5%), and cervical cancer in Kalamunda and Bayswater-Bassendean (both 56.5%).</p> <p><i>Bowel cancer screening at SA2 level</i></p> <p>The SA2s with the lowest rates of bowel screening in Perth North PHN are: Girrawheen (33.5%), Perth City (33.9%), Balga-Mirrabooka (34.9%), Beechboro (35.6%), Ellenbrook (35.9%) and Stratton-Jane Brook (35.9%).</p> <p><i>Breast cancer screening at SA2 level</i></p> <p>The SA2s with the lowest rates of breast screening in Perth North PHN are: Mosman Park-Peppermint Grove, Nedlands-Dalkeith-Crawley, Cottesloe, Midland-Guildford, Claremont and Perth City.</p>
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**Outcomes of the service needs analysis**

		<p><i>Avoidable mortality by cancer</i></p> <p>High rates of avoidable deaths from cancer in Kalamunda (30.3 ASR per 100,000), Bayswater-Bassendean (28.8) and Swan (27.4).</p> <p><i>Immunisation</i></p> <p>Low overall immunisation rates for children aged one to five years in Mundaring, for children aged one in Bayswater-Bassendean and Cottesloe-Claremont, and aged two to five in Stirling and Perth City</p> <p><i>Potentially preventable hospitalisations for vaccine preventable conditions</i> High rates of PPHs for vaccine preventable conditions in Bayswater-Bassendean (187 per 100,000), Stirling (166), Swan (161) and Wanneroo (156), with particularly high rates in specific SA2s of Mundaring, Stirling and Wanneroo.</p>
<p><b>SN2.2 Lack of access to and awareness of appropriate primary care services across Perth North PHN. Several sub-regions with poor supply of after-hours services, particularly after-hours GP services.</b></p>	<p>A lack of access to and awareness of appropriate primary care services, both in- and out- of hours, further compounds issues of service demand and timely and appropriate care, often resulting in increased reliance on unnecessary ED services.</p>	<p>After-hours primary medical care provided by GPs, community health centres, and co-located general practice clinics and telephone helplines can help meet demand for those seeking medical attention outside of these hours to reduce demand on ED services. However, residents need to have adequate access to and awareness of in- and out- of hours primary care services to maximise primary care utilisation and alleviate pressure on secondary and tertiary systems.</p> <p><b>Whole of PHN</b></p> <p><i>Utilisation of allied health and GP services</i></p> <p>There is a similar utilisation of MBS GP chronic disease and allied health services in Perth North PHN compared to Perth South PHN and state utilisation, with higher rates of MBS nurse practitioner services but lower rates of MBS GP attendances and GP health assessments.</p>

## Outcomes of the service needs analysis

		<p><i>Utilisation of GP after-hours services</i></p> <p>A total of 43% of the general practices in Perth North PHN are delivering after hours services, with utilisation of GP after-hours MBS services for urgent and non-urgent consultations in Perth North PHN (35.0 per 100 population) higher than Perth South PHN (23.7) and state utilisation (25.8), but lower than national rates (41.3).</p> <p><i>Non-urgent and after-hours ED attendances</i></p> <p>Perth North PHN had a higher rate of non-urgent ED presentations than Perth South PHN , but a lower rate of non-urgent presentations for Aboriginal patients . . Stakeholder feedback indicates that some health consumers have limited knowledge of how to access after-hours GP services, with ED and ambulance services often the default option. Competition with ED services can also have a significant impact on those practices located within or close to socio-economically disadvantaged communities, as patients constrained by cost may choose to obtain free hospital services.</p> <p><b>Place-based</b></p> <p><i>Utilisation of allied health and GP services</i></p> <p>The lowest utilisation across all MBS primary care services reporting groups in Mundaring, and for most services in Kalamunda. Low utilisation of allied health services in Mundaring, Cottesloe-Claremont and Kalamunda, with high utilisation in Bayswater-Bassendean and Joondalup. Low utilisation of GP attendances in Mundaring and Stirling, with high utilisation in Perth City, Swan, Wanneroo, Kalamunda and Cottesloe-Claremont.</p>
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Outcomes of the service needs analysis		
		<p><i>Utilisation of GP after-hours services</i></p> <p>Low rates of MBS utilisation of GP after-hours services in Mundaring, Kalamunda, Wanneroo and Cottesloe-Claremont, with high utilisation in Perth City and Stirling.</p> <p><i>Non-urgent and after-hours ED attendances</i> High rate of non-urgent ED presentations (per 1,000 persons per year) in Wanneroo, Swan and Bayswater-Bassendean, with high proportion of Aboriginal presentations in Perth City, and Bayswater-Bassendean. High rates of non-urgent ED attendances after hours for non-Aboriginal and Aboriginal population in Perth City, Stirling, Bayswater-Bassendean and Kalamunda.</p>
<p><b>SN2.3 Services not tailored to meet individual needs of people with multiple risk factors/chronic conditions.</b></p>	<p>Lack of person-centred care coordination for those with composite risk factors and comorbid chronic conditions.</p>	<p>Complex chronic conditions and those with multiple risk factors are experienced across Perth North PHN, as evidenced in HN 4.1. A lack of individual, holistic care can frequently lead to ED attendances and potentially preventable hospitalisations. Further research is needed to identify the extent of service needs facing those with multiple risk factors or comorbid chronic conditions across Perth North PHN.</p> <p><b>Place-based</b></p> <p>Consultation with the local Swan and Midland community identified issues with providing culturally secure services for Aboriginal people living with co-occurring alcohol, drug and mental health issues<sup>32</sup>. Service providers in these areas also reported difficulty in meeting needs of clients that presented with complex and co-occurring issues, and the difficulty in facilitating access to the right care without clients needing to wait for extended periods of time to receive help.</p>
<p><b>SN2.4 Lack of best-practice management of chronic conditions in primary care across Perth North PHN. Low rates of GP chronic disease care plans and high rates of PPHs for</b></p>	<p>Poor management of patients with chronic conditions can lead to serious complication, loss of quality of life, and increased burden on tertiary care through potentially preventable hospitalisations.</p>	<p>Appropriate and best-practice management of chronic conditions in primary care is important. Approximately 29,601 hospitalisations relating to chronic conditions in Western Australia between 2015-16 could have been avoided by more effective primary care. GP chronic disease management plans provide the structure for the multidisciplinary</p>

**Outcomes of the service needs analysis**

**chronic conditions in several sub-regions.**

required for effective care, however it is estimated only one third of patients with chronic disease in Australia receive a GP management plan, with less than 20% of plans reviewed regularly. Barriers to the delivery of best practice chronic disease management include:

- Complexity of communication within the care team
- Time spent putting together management plans which are up-to-date, evidence-based and personalised for the patient
- Keeping track of the responsibilities of everyone on the care team and ensuring that duty of care and responsibilities are properly discharged
- Lack of time and resources required to provide patient self-management support
- Administrative overheads and red tape associated with meeting documentation and paperwork requirements.

**Whole of PHN**

*Utilisation of MBS GP chronic disease services*

Similar rates of utilisation of MBS GP chronic disease services in Perth North PHN compared to Perth South PHN, Country WA PHN, state and national rates.

*Potentially Preventable Hospitalisations (PPHs) for chronic conditions*

From a total of 2,300 PPHs (ASR per 100,000) in Perth North PHN in 2015-2016, 1,003 (ASR per 100,000) were for chronic conditions, slightly lower than Perth South PHN (1,124) and national rates (1,205).

*Acute hospital admissions related to chronic conditions*

## Outcomes of the service needs analysis

		<p>Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates higher rates of acute admissions for drug and alcohol conditions and mental health conditions in Perth North PHN compared to Perth South PHN.</p> <p><i>Same-day renal admissions</i></p> <p>Same-day renal dialysis for kidney disease in Perth North PHN is 4,293 (ASR per 100,000) in public hospitals and 7,929 in all hospitals. This is quite similar compared to the state rates of 4,636 and 8,059 respectively.</p> <p><b>Place-based</b></p> <p><i>Utilisation of MBS GP chronic disease services</i></p> <p>High rate of utilisation for MBS GP chronic disease services in Swan, Wanneroo and Joondalup, with low utilisation in Mundaring, Stirling and Kalamunda.</p> <p><i>Potentially Preventable Hospitalisations (PPHs) for chronic conditions</i></p> <p>High volume of PPHs for chronic conditions in 2015-2016 for Swan (1,387 ASR per 100,000), Bayswater-Bassendean (1,253) and Wanneroo (1,137). High rates of specific chronic conditions observed in these regions for:</p> <ul style="list-style-type: none"> <li>• Swan (diabetes complications, COPD, angina, iron deficiency anaemia)</li> <li>• Bayswater-Bassendean (diabetes complications)</li> <li>• Wanneroo (diabetes complications, COPD, angina, congestive heart).</li> </ul> <p><i>Acute hospital admissions related to chronic conditions</i></p>
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**Outcomes of the service needs analysis**

		<p>High rates of acute hospital admissions for drug and alcohol conditions and mental health conditions in Perth City, and Wanneroo compared to Perth North PHN . High rates of acute hospital admissions for mental health conditions in Perth City , Stirling and Wanneroo .</p> <p><i>Same-day renal admissions</i></p> <p>Although rates for same-day dialysis for kidney disease is quite similar for Perth North PHN, there are areas of higher usage. These are:</p> <ul style="list-style-type: none"> <li>• Public hospitals: Wanneroo (7,483.2); Perth City (5,820.9); and Stirling (5,173.4)</li> <li>• All hospitals: Bayswater-Bassendean (12,467.2); Perth City (10,337.9) and Swan (10,204.4)</li> </ul> <p>Some areas have very low rates, indicating either a lack of health need or a lack of service in the area:</p> <ul style="list-style-type: none"> <li>• Public hospitals: Mundaring (478.9); Swan (2,382.2); and Kalamunda (2,418.4)</li> <li>• All hospitals: Joondalup (3,721.2); Cottesloe-Claremont (4,347.7); and Mundaring (4,709.8).</li> </ul>
<p><b>SN3.1 Lack of affordable and accessible primary care services across Perth North PHN. Several sub-regions with higher proportion of adults facing healthcare barriers related to cost, transport and connectivity.</b></p>	<p>Services need to be affordable and accessible, particularly to meet the healthcare needs of those in vulnerable and disadvantaged groups.</p>	<p>Vulnerable and disadvantaged groups have poorer health outcomes and higher need for primary care services. However, these groups typically experience increased challenges in accessing care as appropriate and affordable services may not be readily available or accessible.</p> <p><b>Whole of PHN</b></p> <p><i>Barriers to accessing healthcare</i></p>



## Outcomes of the service needs analysis

		<p>Adults living in Perth North PHN are likely to face barriers to accessing healthcare at similar rates to Perth South PHN, with one third of people in Perth North PHN reporting difficulty accessing services largely due to cost, transport or connectivity. Common barriers to accessing healthcare in Perth North PHN include cost (1.3 ASR per 100), transport issues (3.8 to 5.0%) and lack of home internet access (10.5%). These barriers are typically higher among Aboriginal people and vulnerable populations, where for example nearly one in five homes occupied by the Aboriginal population in Greater Perth do not have access to the internet (19.7%).</p> <p><i>Waiting times</i></p> <p>Almost one in four people who saw a GP in Perth North PHN felt they waited longer than acceptable to get an appointment (24.3%), slightly higher than the national average (22.6%).</p> <p><b>Place-based</b></p> <p><i>Barriers to accessing healthcare</i></p> <p>In Perth City, Stirling, Swan and Bayswater-Bassendean:</p> <ul style="list-style-type: none"> <li>• Between 10% to 14% of residences do not have an internet connection</li> <li>• Between 3% to 11% of residences have no motor vehicle</li> <li>• Around 4 ASR per 100 adults do not have access to transport or are housebound</li> <li>• Between 1.3 to 1.7 ASR per 100 adults reported cost as main barrier to accessing healthcare.</li> </ul> <p><i>Waiting times</i></p>
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Outcomes of the service needs analysis		
		Long wait lists and waiting times have been reported as a key barrier by drug, alcohol and mental health services in the Midland and Swan area to the local community attempting to access and receiving adequate support. Other barriers to receiving adequate care in the Midland and Swan area included accessibility and transport issues and unsuitable service opening hours.
<b>SN3.2 Patients across Perth North PHN have difficulty navigating the complex healthcare system, impacting engagement in appropriate and timely care.</b>	Patients need to understand how to access the right care at the right place at the right time through effective communications and relationships with primary care providers.	<p>The complexity of infrastructure, pathways, and processes that exist within the health system can make it difficult for patients to navigate, understand, and use health information and services to make effective decisions and take appropriate action related to their health. Further research is needed to identify how services can support navigation to reduce the complexity of health care systems across Perth North PHN.</p> <p><b>Place-based</b></p> <p>Community consultation with the local Midland and Swan community related to drug, alcohol and mental health services in the area identified a key barrier to receiving help was not knowing where to go, and difficulty for both the provider and the client in knowing what local services were available, how to access, and how to navigate the complex system. Further research is needed across Perth North PHN to identify how to support patients to navigate and access the appropriate care in an efficient and timely manner.</p>
<b>SN4.1 Lack of uptake of digital health technologies, including telehealth and My Health Record.</b>	Digital technologies support the efficiency and effectiveness of the health system and can increase patient access to more primary care services.	Digital health includes a broad range of innovative technologies for the purposes of providing care and sharing information to enhance patient outcomes. Telehealth can deliver health services and facilitate communication between specialists and patients, whilst electronic medical records such as the national 'My Health Record' can facilitate communication and coordinated care across multiple practitioners. However, the uptake of digital health technologies has been inconsistent across Western Australia, and has yet to be normalised as part of primary care practice.

## Outcomes of the service needs analysis

		<p><b>Whole of PHN</b></p> <p><i>My Health Record by consumer location</i></p> <p>There was a total of 189,823 My Health Record consumer registrations in Perth North PHN as of 19 October 2017 (16.5% of Perth North PHN population), of which one in five had a Shared Health Summary (20.8%; 39,547). Consumer registrations in Perth North PHN increased by 38% in the 12 months from July 2016 to June 2017.</p> <p><i>My Health Record by provider location</i></p> <p>A total of 25,220 Shared Health Summary records had been uploaded by providers in Perth North PHN as of 19 October 2017, accounting for 13.3% of My Health Record registrations in the area. GP provider registrations increased by 35% in the 12 months from July 2016 to June 2017 in Perth North PHN.</p> <p><i>Telehealth</i></p> <p>Similar low rates of MBS utilisation for telehealth services in Perth North PHN compared to Perth South PHN and state rates (0.1 per 100 resident population), and lower than Country WA PHN (0.3) and national rates (0.4).</p> <p><b>Place-based</b></p> <p><i>My Health Record by consumer location</i></p> <p>While there are issues with the data quality, preliminary information suggests the highest volume of My Health Record consumer registrations is in Wanneroo (43,420), Stirling (32,854) and Joondalup (28,388), with the highest proportion of consumers registered in Wanneroo (18.9%),</p>
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Outcomes of the service needs analysis		
		<p>Swan (18.8%) and Joondalup (18.0%). The highest volume of registrations with Shared Health Summary records is in Wanneroo (9,510), with the highest proportion of consumers with Shared Health Summary records registered in Cottesloe-Claremont (36.2%), Kalamunda (23.2%) and Stirling (22.0%). Low volume and rates of consumer registrations and Shared Health Summary records in Perth City, with lowest rates of consumer registrations with Shared Health Summary records in Mundaring (12.3%).</p> <p><i>My Health Record by provider location</i></p> <p>The highest volume of Shared Health Summary uploads was observed for providers in Joondalup (5,802), with the highest proportion uploaded by providers in Bayswater-Bassendean (54.6%), Mundaring (43.8%) and Perth City (25.8%). Low rates of provider uploads of Shared Health Summary records in Kalamunda (2.4%), Wanneroo (7.8%) and Stirling (8.3%).</p> <p><i>Telehealth</i> Low overall utilisation of MBS services across regions, with slightly higher rates in Cottesloe-Claremont and Perth City.</p>
<p><b>SN4.2 Lack of evidence of effective outcomes of primary care services across the Perth North PHN.</b></p>	<p>All services need to capture indicators in order to determine their effectiveness in achieving outcomes for the patient and system. WAPHA has developed an outcomes framework to guide data capture</p>	<p>There is a strong need to support established programs to adopt a more outcomes-based focus, rather than develop new programs. Service continuity and trusted relationships can be supported throughout this process to ensure Aboriginal communities do not lose services. Organisations should be supported to reorient to outcomes-based methodology, as has occurred with the WA Footprints to Better Health Strategy 2014-2018. Service providers are supportive of delivering services that have a strong evaluation component.</p> <p>All WAPHA funded services report back via an Outcomes Framework. This is developed in collaboration with each service, based on local requirements, and is based on the outcomes of the person, clinical indicators, the system and the provider themselves. It is aimed at both</p>

**Outcomes of the service needs analysis**

		self-evaluation, to internally improve services, and facilitate better integration of the health care system.
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Version 1.1 submitted to the Australian Government Department of Health on 15 November 2017

Version 2.0 published 28 February 2018

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