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Primary Health Network

Needs Assessment Reporting Template

Perth South PHN - Core

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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.

Section 1 – Narrative

Needs Assessment process and issues

This updated Needs Assessment Template (Phase 3) for Perth South 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 South 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 Assessment 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 and options identified in the 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 South 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 South 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 need, demand and service provision across the PHN locality.
- 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: South Metropolitan Health Service (NMHS), East Metropolitan Health Service (EMHS), Perth South 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 South PHN are the sub-regional areas of:

- Armadale
- Belmont-Victoria Park
- Canning
- Fremantle
- Gosnells
- Kwinana
- Mandurah
- Rockingham.

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 South 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

Perth South 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. Indigenous data has been provided at IARE level which does not match geographical boundaries for non-indigenous 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 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. 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, the Western Australian Network of Alcohol and Other Drug Agencies 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
HN1.1 Poor health outcomes in disadvantaged areas. Although the level of socio-economic disadvantage in Perth South PHN is similar to the state average, there are several sub-regions with higher disadvantage across a range of indicators.	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.	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. **Whole of PHN** *Socio-economic disadvantage for whole of population* The overall socio-economic disadvantage score for Perth South PHN (SEIFA 1,020) is similar to the state (SEIFA 1,022), but with pockets of high disadvantage throughout region. There is a higher proportion of unemployed (6.3% vs 6.0%), single parent (19.4%; 19.1%) and jobless families with children (11.9% vs 11.2%) relying on government assistance for income (24.3 vs 22.8 ASR per 100) and rent support (15.5% vs 13.8%) in Perth South PHN than respective state rates. There are similar rates of full-time secondary school participation (82.8% vs 82.9%), secondary school drop-out (29.8 vs 29.7 per 100), and higher education participation (34.4% vs. 33.9%) to respective state rates. *Socio-economic disadvantage for Aboriginal population* Aboriginal people living in the Greater Perth area are relatively less socio-economically disadvantaged (IRSEO[1] 40) than state (IRSEO 59) and national Aboriginal populations (IRSEO 46). However, the indicators of disadvantage are consistently

[1] IRSEO: Indigenous Relative Socioeconomic Outcomes, 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.

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		poorer for Aboriginal people living in Greater Perth compared to Perth South PHN averages, with nearly one in five Aboriginal persons unemployed (17.6%), and nearly half of families solo-parented (47.7%) and jobless (42.3%). **Place based** *Socio-economic disadvantage for whole of population* Kwinana has the highest rate of unemployment (11.5%), lowest rate of higher education (22.3%), and highest proportion of jobless families (16.8%), welfare-dependent families (17.2%) and families with mothers of low education (34.1%). Mandurah has the highest proportion of single parent families (26.3%) and adults relying on government assistance for income (35.3%) and rent support (23.6%). Armadale has consistently poor rates across most indicators of disadvantage, with the highest proportion of adults suffering financial rent or mortgage stress (34.6%). *Socio-economic disadvantage for Aboriginal population* Kwinana has a high proportion of low income Aboriginal families (16.8%) with two thirds of Aboriginal youth not attending secondary school full time at the age of 16 (66.7%; PHIDU, 2017). South Perth-Victoria Park has a high proportion of single parent (59.5%) and jobless Aboriginal families (62.4%), with high rates of unemployment (20.2%), particularly among Aboriginal women (66.9%), and a high proportion of government housing (32.8%). Around half of Aboriginal youth in Belmont and Armadale come from single parent families (58.2% and 50.6%) and are not attending secondary school full time at the age of 16 (44.4% and 49.2%).
HN1.2 Vulnerable population groups need targeted support. There is a higher proportion of vulnerable people living in Perth South PHN compared to the state. Several sub-regions have higher populations of vulnerable people.	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	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 LGBTQI community. **Whole of PHN** *CALD population* One in five people in Perth South PHN are born in a non-English speaking country (188,416; 20.1%), higher than the state average (16.6%), with the majority of these people born in India (2.5% of Perth South PHN population), China (1.6%) or the

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	are at higher risk of mental health concerns.	Philippines (1.6%). Of those born in a non-English speaking country living in the PHN, 19,100 have poor English proficiency, accounting for a higher proportion of the Perth South PHN population compared to the state average (2.2% vs 1.9%). *Disability and carers* There is a higher percentage of people in Perth South PHN either living with a profound or severe disability (4.4%) or providing unpaid care for someone with a disability (10.0%) compared to Perth North PHN, Country PHN and 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. *Homelessness* Similar rates of homelessness in Perth South PHN (2,444 people) and Perth North PHN (2,458), 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. *Refugees and migrants* A total of 2,406 humanitarian migrants settled into Perth South PHN from 2010 to 2015[6]. 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. *LGBTQI* 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

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		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 South PHN. On 15th 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. **Place-based** *CALD population* The highest proportion of residents born overseas live in Canning (38.9%), Gosnells (30.3%) and Belmont-Victoria Park (28.5%), with highest proportion of those with poor English proficiency are living in Canning (5.0%) and Gosnells (4.7%). High volumes of people born overseas are living in Canning (36,418), Gosnells (35,753), Melville (21,096) and Cockburn (20,381). *Disability and carers* The highest proportion of people living with a disability in Mandurah (6.1%) and Fremantle (4.6%), with highest proportion of those providing unpaid care for someone with a disability living in Fremantle (11.4%) and Melville (11.3%). *Homelessness* The highest numbers of homeless people living in Gosnells (417), Fremantle (383) and Canning (272). *Refugees and migrants* The highest number of humanitarian migrants in Perth South PHN reside in Gosnells (791), Canning (746) and Armadale (171).
HN1.3. Older people need targeted	Older populations generally have higher	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

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support. There is a higher proportion of people aged over 65 years living in the PHN compared to the state. Several sub-regions have rates close to one in five people aged over 65 years.	prevalence rates of chronic conditions and exacerbations of their conditions, leading to increased ED presentations, potentially preventable hospitalisations and acute care demand.	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. **Whole of PHN** *Ageing population* The proportion of residents aged 65 years and over in Perth South PHN (14.1%; 132,689) is similar to state rates (14.0%; 346,182), but higher than Perth North PHN (13.6%; 137,593). The ageing population is expected to grow at a faster rate in Perth South PHN than Perth North PHN (0.5% vs -0.4%), with close to 200,000 older adults living in Perth South PHN by 2025 (14.6%). *Palliative care* Perth South PHN has similar lower proportions of adults aged in the 75-79 (2.6%), 80-84 (1.8%) and 85+ (1.8%) year age groups compared to Perth North PHN, Country WA PHN and state rates states, but lower than national rates. **Place-based** *Ageing population* A high proportion of older adults live in Mandurah (22.5%), Melville (18.5%) and Fremantle (17.6%) with high numbers living in Mandurah (21,790), Melville (18,584) and Rockingham (15,420). Mandurah is expected to have the highest proportion (25.1%) and number of residents aged over 65 years (32,990) in 2025, with the greatest ageing population growth rates to occur in Serpentine-Jarrahdale (9.1% to 23.7%) and Kwinana (9.2% to 16.0%). The Fiona Stanley Hospital Acute Primary Health Care Project reported a higher number of older patients referred to ED by after-hours doctors. There is a need to improve care pathways for older patients in Rockingham, Fremantle and Fiona Stanley Hospitals to improve linkages and referrals between hospitals and the primary health care sector. There is also a

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		need to educate GPs on Aged Care Assessment Team (ACAT) assessments to ensure referral to the most appropriate services. *Palliative care* A high proportion of adults aged 75-85+ years are living in Mandurah (9.9%), Melville (8.9%) and Fremantle (8.2%). There is a high expected proportion of adults aged over 85+ living in Serpentine-Jarrahdale (4.1%), Melville (2.3%) and Armadale (2.5%) by 2025, higher than anticipated state (1.7%) and national rates (2.2%).
HN1.4 There is a need for accessible culturally secure primary care. Although there is a lower proportion of Aboriginal people living in Perth South PHN compared to Australia, there are several sub-regions with a higher proportion of Aboriginal people.	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.	The gap in health outcomes between Indigenous and non-Indigenous Australians is well documented, particularly around life expectancy, infant mortality, child mortality, chronic disease prevalence, potentially preventable hospitalisations, and the burden of disease. 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. **Greater Perth and Whole of PHN** *Aboriginal population* A lower proportion of Aboriginal people live in Perth South PHN (1.8%) compared to the state (3.1%), but slightly higher proportion than Perth North PHN (1.4%), accounting for a total of 17,240 Aboriginal people. *Aboriginal morbidity and mortality* Aboriginal people living in Greater Perth have a lower median age of death (51.0 years) compared to the general population living in Perth South 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 28.1 ASR per 100,000), circulatory system diseases (76.5 vs 33.8) and respiratory diseases (14.6 vs 6.6), compared to the general population living in Perth South PHN. *Hospital admissions for Aboriginal people* There were 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 for non-Aboriginal people (55,640), with

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		particularly high volume of admissions for mental health (3,270) compared to the national average for non-Aboriginal people (2,371). There were 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). *Aboriginal maternal and child health* 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. **Place-based** *Aboriginal population* A higher proportion of Aboriginal people live in Kwinana (3.6%), Armadale (2.5%) and Gosnells (2.3%), with the highest numbers of Aboriginal people living in Gosnells (2,753), Rockingham (2,560), Mandurah (2,096), Armadale (2,029) and Cockburn (1,585). *Aboriginal morbidity and mortality* The lowest median age of death was for Aboriginal people living in IAREs of Melville (35.0 years), Rockingham (40.5 years), Cockburn (47.5 years) and Mandurah (48.5 years). Particularly younger age of mortality for Aboriginal men in Rockingham (34.0 years), Cockburn (46.5 years) and Gosnells (47.0 years), and for Aboriginal women in Fremantle (47.5 years), Rockingham (48.0 years) and Cockburn (49.5 years). The highest rates of Aboriginal mortality due to cancer were in Belmont (132.4 ASR per 100,000 persons), and circulatory system diseases in South-Perth Victoria Park (177.2), Canning (131.4) and Belmont (126.4). *Hospital admissions for Aboriginal people*

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		High rates of total hospital admissions for Aboriginal people living in IAREs of South Perth-Victoria Park (303,335 ASR per 100,000 Aboriginal persons), Fremantle (202,351), Canning (190,341) and Melville (131,328), all well above the Greater Perth average (93,430). Particularly high admissions in: • South Perth-Victoria Park (injury/poisoning, digestive system, mental health, circulatory system) • Fremantle (injury/poisoning, digestive system, mental health, respiratory system, circulatory system) • Canning (injury/poisoning, mental health) • Melville (injury/poisoning, digestive system, respiratory system). Highest rate of ambulatory-sensitive hospitalisations (potentially preventable hospitalisations) for Aboriginal people of all ages in Fremantle (9,866 ASR per 100,000 Aboriginal persons), Belmont (7,593) and South Perth-Victoria Park (6,847). Particularly high rates of ambulatory-sensitive hospitalisations for Aboriginal children under 14 years of age in Melville (7,008 ASR per 100,000 Aboriginal persons), and those aged over 15 years of age in Fremantle (11,899) and Belmont (10,234). *Aboriginal maternal and child health* The poorest rates of maternal and child Aboriginal health, including smoking during pregnancy and low birth weight babies, in IAREs of Belmont, Armadale, Canning and South Perth-Victoria Park. Close to half of Aboriginal children in Belmont (47.8%) and Armadale (46.8%) are developmentally vulnerable across one or more physical, social, cognitive and emotional indicators, with more than one in three vulnerable across two or more of these indicators in Belmont (34.8%) and Armadale (30.6%), both well above state and national averages for Aboriginal children and compared to non-Aboriginal children.
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 the Perth South PHN. Close to four out of five adults	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.	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. **Whole of PHN** *Adults* Three in four adults (males: 75.1; females: 75.0 ASR per 100) in Perth South PHN have at least one of four risk factors for chronic disease (obese, current smoker, low rates of physical activity, high risk alcohol consumption), slightly higher than

Outcomes of the health needs analysis		
in several sub-regions have at least one lifestyle risk factors. More than one in five children are overweight in several sub-regions.		state rates (males and females: 74.5). Compared to state rates for individual risk factors, Perth South PHN has (ASR per 100): • Similar rates of obesity, with nearly one in four males (23.8) and females (24.2) obese • Similar rates of smoking, with nearly one in five males (18.7) and one in eight females (12.7) current smokers • Similar rates of participation in physical activity, with more than two thirds of adults undertaking no or low exercise (62.9) • Slightly lower rates of high alcohol intake, with nearly one in five adults consuming at high risk levels (18.4) • Slightly higher rates of adequate dietary intake, with just over half of adults consuming adequate fruit (53.6). *Children* Perth South PHN has slightly higher rates of childhood overweight (19.1 ASR per 100 vs 18.9) and obesity (6.4 vs 6.1) than state rates, with similar rates of adequate fruit intake (64.3 vs 64.9). **Place-based** *Adults* Compared to Perth South PHN averages, the areas with the highest rates of composite risk, where both males (75.1) and females (75.0) have at least one of the four risk factors includes (ASR per 100): • Kwinana (males: 82.8; females: 81.1) • Armadale (males: 81.7; females: 79.7) • Serpentine-Jarrahdale (males: 80.6; females 78.9) • Mandurah (males: 80.4; females: 77.8) • Rockingham (males: 80.1; females: 78.1). Particularly high rates for overweight and/or obesity observed for (ASR per 100):

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		• Overweight and obese males (42.5; 28.4) and females (31.1; 28.3) in Armadale • Obese males and females in Kwinana (males: 30.3; females: 30.7), Mandurah (males and females 28.1) and Rockingham (males and females 28.0) • Overweight males in Serpentine-Jarrahdale (43.6) and Kwinana (43.5). *Children* Particularly higher rates of childhood overweight and/or obesity observed for (ASR per 100): • Overweight males and females in Belmont-Victoria Park (males: 27.3; females: 17.5) and Canning (males: 25.7; females: 19.0) • Obese children in Kwinana (8.5), Armadale (7.7), Rockingham (7.1) and Gosnells (7.0). The Armadale Schools Consultation Report identified that lifestyle risk taking behaviours are occurring at a younger age in Armadale and in need of a whole-of-family approach to early intervention.
HN3.1 There is a need to access relevant primary care for people living with chronic conditions. Prevalence of chronic conditions are evident across the Perth South PHN. Some sub-regions have large numbers of people living with one or more chronic condition.	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.	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. **Whole of PHN** *Chronic conditions* In Perth South PHN, 44.3% of people live 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 South PHN residents have a slightly higher rate of practice-diagnosed chronic conditions compared to state rates .

Outcomes of the health needs analysis		
		Perth South PHN has slightly higher prevalence of diabetes (5.6 ASR per 100 vs 5.5), mental health conditions (14.4 vs 14.0), circulatory system diseases (15.8 vs 15.7) and arthritis (15.4 vs 15.1) compared to state rates. The prevalence of other chronic conditions in Perth South PHN are similar to state rates, including high blood cholesterol (34.8 ASR per 100), musculoskeletal conditions (29.0) and respiratory system diseases (29.4). *Comorbidity* Perth South PHN has slightly higher rates of general practice diagnosed chronic conditions compared to the state . *Median age of death and avoidable deaths* The median age of premature death in Perth South PHN is 81 years, similar to Perth North PHN and national rates, and slightly higher than the state rate of 80 years. Perth South PHN has lower rates of avoidable death from most chronic diseases compared to state rates, with the exception of cancer which has a higher avoidable death rate (28.1 ASR per 100) compared to respective Perth North PHN (25.6), Country PHN (27.0) and state rates (26.8). The most prevalent cause of avoidable death was due to circulatory system disease (33.8 ASR per 100,000), cancer (28.1), and ischemic heart disease (22.6). **Place-based** *Chronic conditions* Mandurah has the highest proportion of chronic disease burden in Perth South PHN, with consistently higher rates across eight of the nine chronic conditions, with the exception of diabetes where rates were similar to the state average. Kwinana has high rates of diabetes, circulatory system diseases, COPD and arthritis, and Rockingham has high rates of asthma and musculoskeletal disorders compared to state averages. *Comorbidity*

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		Fremantle and Mandurah have consistently high volumes and rates per 100 population of diagnosed chronic conditions in all categories, ranging from one condition to four or more conditions, with high volumes for one condition and two conditions also observed in Gosnells. *Median age of death and avoidable deaths* Lowest median age of premature death in Kwinana (75 years), Serpentine-Jarrahdale (75 years) and Armadale (76 years), all below Perth South PHN, state and national averages. High rates of avoidable death from suicide in Mandurah, Rockingham and Armadale, from cancer in Serpentine-Jarrahdale, and from diabetes, stroke and heart disease in Kwinana, all above Perth South PHN, state and national averages.
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.	The majority of chronic conditions require effective management, including medication management, to prevent progression and to avoid potentially preventable hospitalisations	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 GPs to help manage and treat their conditions, having a good understanding of their condition, and complying with medication. **Whole of PHN** There is evidence of poor self-management, personal responsibility and self-efficacy of some cohorts across Perth South PHN, with poor medication compliance, lack of understanding of medication effectiveness, and improved access needed for self-management programs. 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 South PHN are not available and further research is needed to identify specific sub-regions where low levels of health literacy in Perth South PHN may be contributing to poor chronic disease self-management and medication compliance. *Primary care prescriptions for chronic disease*

Outcomes of the health needs analysis		
		Overall, Perth South 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, and both PHNs much lower than Country WA PHN. *Potentially Preventable Hospitalisations (PPHs) for chronic conditions* From a total of 2,400 PPHs (ASR per 100,000) in Perth South PHN in 2015-2016, 1,124 (ASR per 100,000) were for chronic conditions, slightly higher than Perth North PHN (1,103) but slightly lower than national rates (1,003). Approximately 30% of chronic PPHs in Perth South PHN account for short stays with same day hospitalisation and discharge (29.4%). *Acute hospital admissions related to chronic conditions* Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates slightly lower rates of acute admissions for drug and alcohol conditions and mental health conditions compared to Perth North PHN. **Place based** *Primary care prescriptions for chronic disease* Highest rates (per 100 population) for chronic condition prescriptions related to mental health, circulatory system, diabetes, musculoskeletal, high blood cholesterol and respiratory conditions in Fremantle and Mandurah. The highest volume of prescriptions across all chronic conditions in Mandurah and Gosnells. *Potentially Preventable Hospitalisations (PPHs) for chronic conditions* High volume of PPHs for chronic conditions in 2015-2016 for Kwinana (1,472 ASR per 100,000), Belmont-Victoria Park (1,324), Rockingham (1,310), Gosnells (1,246), Armadale (1,239), Cockburn (1,233) and Mandurah (1,165). High rates of specific chronic conditions observed in these regions for:

Outcomes of the health needs analysis		
		• Kwinana (diabetes complications, COPD, angina, congestive heart failure, anaemia) • Belmont-Victoria Park (COPD, iron deficiency anaemia) • Rockingham (diabetes complications, COPD) • Armadale (diabetes complications, COPD, congestive heart failure) • Cockburn (iron deficiency anaemia) • Mandurah (COPD, iron deficiency anaemia). *Acute hospital admissions related to chronic conditions* High rates of acute hospital admissions for drug and alcohol conditions in Fremantle , Belmont-Victoria Park and Mandurah compared to Perth South PHN . High rates of acute hospital admissions for mental health conditions in Fremantle, Belmont-Victoria Park and Kwinana .
HN4.1 There is a need to prevent the development of co-occurring 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.	People with chronic conditions are at higher risk of developing co-occurring chronic conditions (physical and mental) that will exacerbate their pre-existing conditions.	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. **Whole of PHN** *Chronic conditions and Mental Health and AOD* A strong associated is observed between population prevalence of excessive alcohol consumption with the prevalence of current smokers (r=0.7513). A moderate association is observed between population prevalence of excessive alcohol consumption and: fair or poor self-assessed health status (r=0.6750); high or very high level of psychological distress (r=0.6148); obesity prevalence (r=0.6507); estimated prevalence of diabetes (r=0.5760), circulatory disease (r=0.5537) and musculoskeletal conditions (r=0.5491); and prescription drug use (r=0.5091). Excessive alcohol consumption is also

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		associated with Potentially Preventable Hospitalisations (PPHs) related to cellulitis (r=0.5534), COPD (r=0.5416), diabetes complications (r=0.5691), iron deficiency anaemia (r=0.5014), and kidney and urinary tract infections (UTI) (r=0.5179). **Place-Based** *Chronic conditions and Mental Health and AOD* Excessive alcohol consumption is likely to show stronger links to the development of physical and mental conditions in the following geographical areas: • SA3 Mandurah (and SA2s: Dawesville-Bouvard, Falcon-Wannanup, Halls Head-Erskine, Mandurah-East, Pinjarra) • SA3 Armadale (and SA2s: Armadale-Wungong-Brookdale) • SA3 Kwinana (and all SA2s) • SA3 Rockingham (and all SA2s) • SA3 Serpentine-Jarrahdale (and all SA2s) • SA2 Beckenham-Kenwick-Langford (in SA3 of Gosnells) • SA2 Willagee (in SA3 of Melville).
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 South PHN.	People presenting to ED with non-urgent conditions may lack access, availability or awareness of appropriate and affordable primary care services.	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. **Whole of PHN** *Non-urgent ED attendances* Perth South PHN had a lower volume and proportion of non-urgent ED presentations from than Perth North PHN and Country PHN . Top major diagnosis codes for non-urgent ED presentations in Perth South PHN included injury and poisoning , factors influencing health status , and ill-defined conditions . *Non-urgent ED attendances for Aboriginal people*

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		Perth South PHN had a higher volume and proportion of non-urgent ED presentations by Aboriginal patients compared to Perth North PHN , but lower than Country PHN . Top major diagnosis codes for non-urgent ED presentations for Aboriginal people in Perth South PHN included injury and poisoning , factors influencing health status , and skin conditions . **Place based** *Non-urgent ED attendances* Highest volume of non-urgent ED presentations in Rockingham , Gosnells and Armadale . Highest proportion of presentations per 1,000 persons per year in Kwinana , Armadale , Rockingham and Belmont-Victoria Park . High proportion of presentations for specific diagnosis categories observed in:
		• Rockingham (injury and poisoning) • Gosnells (factors influencing health status; infectious and parasitic diseases) • Armadale (factors influencing health status) • Kwinana (ill-defined conditions; infectious diseases; respiratory conditions) • Belmont-Victoria Park (ill-defined conditions; infectious diseases; respiratory conditions).
		Non-urgent ED attendances for Aboriginal people Highest volume of non-urgent ED presentations for Aboriginal population in Gosnells , Belmont-Victoria Park and Armadale . Highest proportion of ATSI presentations per 1,000 Aboriginal persons per year in Fremantle , Melville and Belmont-Victoria Park . High proportion of Aboriginal presentations for specific diagnosis categories observed in:
		• Gosnells (digestive conditions) • Belmont-Victoria Park (digestive conditions; ill-defined conditions) • Armadale (injury and poisoning; factors influencing health status) • Fremantle (factors influencing health status; skin conditions) • Melville (injury and poisoning; factors influencing health status; skin conditions).

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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.	Potentially preventable hospitalisations may be treated, or better managed at an earlier state, in primary care.	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. **Whole of PHN** *Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions* Perth South PHN had a higher rate of PPHs in 2015-16 (2,400 ASR per 100,000) compared to Perth North PHN (2,300), but lower than Country WA PHN (3,044) and national rates (2,643). This trend was maintained across PPHs for chronic (1,124 ASR per 100,000) and vaccine preventable conditions (138), but total PPHs for acute conditions were slightly lower in Perth South PHN (1,156) than Perth North PHN (1,176). **Place-based** High rates of PPHs for all acute, chronic and vaccine preventable conditions in Kwinana. Also particularly high rates of acute PPHs in Mandurah and Cockburn, chronic PPHs in Belmont-Victoria Park and Rockingham, and vaccine preventable PPHs in Fremantle and Gosnells[16]. This suggests early intervention efforts to treat or better manage conditions in primary care may need to be prioritised in these regions to address high rates of avoidable hospitalisations. *Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions* High overall rates of PPHs in Kwinana (2,857 ASR per 100,000), Belmont-Victoria Park (2,638), Cockburn (2,622), Mandurah (2,607), Gosnells (2,601), Armadale (2,568) and Rockingham (2,562). Highest rates of: • Acute PPHs in Mandurah (1,328), Cockburn (1,250) and Kwinana (1,234) • Chronic PPHs in Kwinana (1,472), Belmont-Victoria Park (1,324) and Rockingham (1,310) • Vaccine preventable PPHs in Fremantle (188), Kwinana (180) and Gosnells (176). Particularly high rates of PPHs for:

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		• All chronic conditions, acute UTI and cellulitis, and vaccine preventable conditions in Kwinana SA2s • Acute cellulitis, and chronic COPD and anaemia in Mandurah SA2s • Acute convulsions, and chronic COPD and anaemia in Belmont-Victoria Park SA2s • Acute cellulitis and convulsions in Fremantle SA2s • Acute convulsions, and chronic diabetes complications, COPD and heart failure in Armadale SA2s.
HN4.4 Need for some conditions to be treated in primary care at an earlier stage to prevent high rates (volume) of acute hospitalisations	Some acute hospitalisations may be treatable - or treated at an earlier stage - in primary care. This is better for the patient and the system.	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. **Whole of PHN** *Acute hospital admissions by volume* The total volume of acute hospital admissions in Perth South PHN was higher than Perth North PHN but lower than Country PHN . *Acute hospital admissions by Diagnostic Related Group (DRG)* The top diagnostic related categories (DRGs) of acute hospital admissions in Perth South PHN included acute infections , cardiovascular disease , and gastrointestinal conditions . **Place-based** *Acute hospital admissions by volume* Highest volume of acute admissions for Mandurah , Kwinana and Belmont-Victoria Park . *Acute hospital admissions by Diagnostic Related Group (DRG)*

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		Particularly high rates of admissions (for DRGs per 1,000 resident population) for:
		• Mandurah (acute infections; cardiovascular; gastrointestinal; respiratory; genitourinary) • Kwinana (acute infections; cardiovascular disease; mental health) • Belmont-Victoria Park (acute infections; cardiovascular; gastrointestinal; mental health; drug and alcohol) • Fremantle (mental health; drug and alcohol).

Section 3 – Outcomes of the service needs analysis

Outcomes of the service needs analysis		
Identified Need	Key Issue	Description of Evidence
SN1.1 Lower rates of health professionals in Perth South PHN compared to state and national rates. Lower supply of primary care services in multiple sub-regions with high socio-economic disadvantage.	Inadequate supply of primary care services to meet demand, particularly in areas of high socio-economic disadvantage where there are poorer health outcomes and higher demand for primary care services.	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. **Whole of PHN** *Allied health workforce supply* Health professional to population ratio for dentists, nurses and midwives in Perth South PHN is lower compared to Perth North PHN, state and national rates, with a considerably lower ratio of GPs (8.40 per 10,000 resident population) and Aboriginal health practitioners (0.07). Low ratio of occupational therapists, pharmacists and physiotherapists to residents in Perth South PHN

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		compared to Perth North PHN, and slightly lower or similar to national ratios. **Place-based** *Allied health workforce supply* Low health professional to population ratios across nearly all disciplines in Gosnells, Serpentine-Jarrahdale, Kwinana, Rockingham and Armadale. Highest GP to population ratios in Fremantle (17.47 per 10,000 resident population), Melville (12.79) and Canning (11.35), with all other regions lower than state (8.98) and national averages (9.57). Particularly low GP to population ratios in Serpentine-Jarrahdale (4.97 per 10,000 resident population), Gosnells (5.60), Kwinana (5.92), South Perth (6.26), Belmont-Victoria Park (6.50), Rockingham (7.44) and Armadale (7.60). Recent community consultation in Mandurah highlighted the lack of locally-based GP services in Mandurah, Pinjarra and Waroona to adequately meet service demand. Community consultation in the Waroona community also identified a need to improve the provision of GP services and primary care models to meet local service needs.
SN1.2 Lack of appropriately targeted services across Perth South PHN for vulnerable groups, particularly sub-regions with high proportions of culturally and linguistically diverse populations.	Services should be targeted to specific high-risk groups, to increase accessibility and acceptability for vulnerable people.	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 South PHN, and further research is needed to address this issue.

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		Whole of PHN There is a lack of multidisciplinary community based services in some areas of Perth South PHN, which may impact on the support available to assist people to manage their social, cultural and economic circumstances. Overall, CALD groups report difficulties in understanding the Australian health care system and lack of trust in western treatment methods, leading to inappropriate use of the health care system and a lack of compliance with instructions from health care professionals. This is a particular issue in Perth South PHN given one in five people are born in a non-English speaking country (188,416; 20.1%)[1]. 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. **Place-based** Community consultation to in the Langford/Armadale area identified the need to improve service provision to meet the needs of the culturally diverse community, including: increasing access to community service providers with language skills and cultural understanding; providing bi-lingual support services across community, AOD and MH services; improving referral and intake processes that are culturally secure; and providing cultural awareness training to educate

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		staff and service providers on how to engage with the diverse local community.
SN1.3 Lack of appropriately targeted services across Perth South PHN for older adults who use high rates of primary care resources, particularly GP services.	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.	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. Due to perceived stigma around mental health issues such as depression and anxiety, older adults are less likely to see help or support unless at a crisis point. 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 the 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. 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

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		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. 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. **Whole of PHN** Despite a growing ageing population in Perth South PHN, the proportion of aged care places (per 1,000 people aged over 70 years) is 77.1, 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 South PHN. A lack of visiting specialists and associated services to residential care facilities creates the need for hospital admission for patient care that may otherwise have been treated in the facility. 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. **Place-based**

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		The areas with the lowest residential aged care places (per 1,000 population) aged over 70 years are Gosnells (46.9), Serpentine-Jarrahdale (48.1) and Mandurah (53.8). These areas are also projected to have an increasing ageing population by 2025, with Mandurah and Serpentine-Jarrahdale being the highest, adding pressure to these existing services. 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.
SN1.4 Lack of culturally safe services across Perth South PHN for Aboriginal people, particularly in sub-regions with higher density Aboriginal populations.	All services should be accessible and culturally safe for Aboriginal people	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[34]. 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 provide targeted services that are culturally acceptable and safe for Aboriginal people. **Whole of PHN** Qualitative feedback has indicated the following areas of service need in Perth South PHN: • Lack of culturally safe services across health, education and justice for Aboriginal people

Outcomes of the service needs analysis		
		• Low trust of non-Aboriginal services that are not culturally sensitive • Low numbers of Aboriginal people employed in the health workforce • Lack of development and demonstrated commitment to Aboriginal employment. **Place-based** Recent consultation with the local Armadale, Mandurah and Pinjarra Aboriginal communities identified a particular lack of culturally safe alcohol, drug and community health services and a lack of Aboriginal health workers, in addition to issues with ease of access and receiving appropriate cultural understanding and support from local service provider needs. Further research is needed across Perth South PHN to identify issues related to providing culturally safe services to meet the needs of the Aboriginal community.
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.	Services need to be integrated and collaborative in order to provide person-centred care that meets individual needs.	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

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		to support the management of complex, chronic, and comorbid conditions. **Whole of PHN** 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: • Increased waiting times for treatment in secondary care • High number of inappropriate referrals to secondary care • Inefficient use of resources and lack of system integration • Poor discharge from secondary to primary care/general practice • Lack of system integration. 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 South 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. The development of HealthPathways enables GPs to manage and refer their patients to the most appropriate

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		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). **Place-based** There is limited focus on transition-out of services across Perth South PHN. Stakeholder feedback has indicated issues for some in transitioning from child to adult diabetes services, and from hospital to home services for older people, people experiencing mental health issues, and homeless people in Perth South PHN[21]. Chronic disease management for people transitioning from prison to community provided services has also been identified as an area requiring further focus. There is evidence of displaced families travelling from country for treatment at metropolitan hospitals. Stakeholder feedback from community consultations in Waroona, Pinjarra and Mandurah has indicated issues with primary care service coordination and integration impacting the continuity of care. Further research is needed to identify the extent of these transition issues in specific areas across Perth South PHN. Stakeholder feedback has also highlighted the Cockburn area as a hub for the population moving between Kwinana, Armadale, Fremantle and Rockingham to access services,

Outcomes of the service needs analysis		
		indicating an area with high demand for integrated and coordinated services that need to align with usual or multiple care providers.
SN2.1 Lack of targeted early intervention in primary care across Perth South PHN. Low rates of cancer screening and childhood immunisation in several sub-regions.	Targeted early intervention and/or secondary prevention in primary care could prevent the development of chronic conditions and disease.	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 screening has been shown to reduce morbidity and mortality of cancer through early detection and treatment. Childhood immunization 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 lower in Perth South PHN (56.1%; 53.8%; 42.7%) compared to Perth North PHN (58.2%; 57.8%; 43.1%) and state rates (56.6%; 55.8%; 42.9%).

Outcomes of the service needs analysis		
		Avoidable mortality by cancer High rates of avoidable deaths from cancer in Perth South PHN (28.1 ASR per 100,000) compared to Perth North PHN (25.6), Country WA PHN (27.0) and state rates (26.8). *Immunisation* Fully immunised children in Perth South PHN aged one year old (93.6%) and five years old (91.8%) are above state rates, but not for children aged two years old (88.5%). Rates of immunisation is lower among one-year old (84.6%) and two-year old (78.9%) Aboriginal children in Perth South PHN compared to all children in Perth South PHN and Aboriginal children in the state, but comparatively higher by five years of age (95.0%). *Potentially preventable hospitalisations for vaccine preventable conditions* Slightly higher rates of PPHs for vaccine preventable conditions in Perth South PHN (138 ASR per 100,000) compared to Perth North PHN (134), but lower than Country WA PHN (185) and national rates (199). **Place based** *Cancer screening*

Outcomes of the service needs analysis		
		Lower screening rates for all cancers in Kwinana, Armadale and Belmont-Victoria Park compared to Perth South PHN and state averages. Consistently lowest rates of bowel cancer screening (34.3%) breast cancer screening (50.0%) and cervical cancer screening (45.2%) in Kwinana, all far below Perth South PHN, state and national rates. *Bowel cancer screening at SA2 level* The SA2s with the lowest rates of bowel screening in Perth South PHN are: Calista (31.0%), Parmelia-Orelia (31.0%), Seville Grove (33.9%), Hamilton Hill (35.1%) and Armadale-Wungong-Brookdale (35.4%). *Breast cancer screening at SA2 level* The SA2s with the lowest rates of breast screening in Perth South PHN are: Calista, Kelmscott, Armadale-Wungong-Brookdale, Greenfields and Gosnells. *Avoidable mortality by cancer* High rates of avoidable deaths from cancer in Serpentine-Jarrahdale (34.8 ASR per 100,000), Kwinana (34.3) and Armadale (30.9). *Immunisation*

Outcomes of the service needs analysis		
		Low overall immunisation rates for children aged 1 to 5 years in Fremantle, Armadale, Belmont-Victoria Park and South Perth. *Potentially preventable hospitalisations for vaccine preventable conditions* High rates of PPHs for vaccine preventable conditions in Fremantle (188 per 100,000), Kwinana (180), Gosnells (176) and South Perth (175)[16], with particularly high rates in specific SA2s of Cockburn and Kwinana.
SN2.2 Lack of access to and awareness of appropriate primary care services across Perth South PHN. Several sub-regions with poor supply of after-hours services, particularly after-hours GP services.	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	Most non-urgent ED presentations in Western Australia occur during the business hours of 8am and 8pm, indicating a large proportion of non-urgent ED presentations could be prevented by accessing primary care services. After-hours primary medical care provided by GPs, community health centres, and co-located general practice (AHGP) 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. **Whole of PHN** *Utilisation of allied health and GP services* Perth South PHN residents were among the least frequent users of primary care MBS services in 2014-15

Outcomes of the service needs analysis		
		in Australia's metropolitan PHNs across a number of reporting groups, indicating overall low access and coverage of primary health care services in the region. Low utilisation of MBS GP chronic disease and nurse practitioner services in Perth South PHN compared to Perth North PHN and state utilisation, with higher rates of MBS GP attendances compared to Perth North PHN, Country WA PHN, state and national service utilisation. *Utilisation of GP after-hours services* A total of 41% of the general practices in Perth South PHN are delivering after hours services, however utilisation of GP after-hours MBS services for urgent and non-urgent consultations in Perth South PHN is considerably lower than Perth North PHN, state and national rates. *Non-urgent and after-hours ED attendances* Perth South PHN had a lower rate of non-urgent ED presentations than Perth North PHN and Country PHN , but a higher rate of non-urgent presentations for ATSI patients compared to Perth North PHN . Over half of non-urgent ED attendances for Perth South PHN population occurred after-hours , with a slightly higher rate among the Aboriginal population . 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

Outcomes of the service needs analysis		
		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. **Place-based** *Utilisation of allied health and GP services* Relatively low utilisation across all MBS primary care services reporting groups in Belmont-Victoria Park. Low utilisation of allied health services in Serpentine-Jarrahdale, Kwinana and Gosnells, with high utilisation in Fremantle and Mandurah. Low utilisation of GP attendances in Mandurah, Canning and South Perth, with high utilisation in Armadale, Rockingham, Kwinana and Gosnells. *Utilisation of GP after-hours services* Low rates of MBS utilisation of GP after-hours services in South Perth, Kwinana, Mandurah, Fremantle and Belmont-Victoria Park, with high utilisation in Rockingham and Canning. *Non-urgent and after-hours ED attendances* High rate of non-urgent ED presentations in Kwinana , Armadale , Rockingham and Belmont-Victoria Park , with high proportion of ATSI presentations per 1,000 Aboriginal

Outcomes of the service needs analysis		
		persons per year in Fremantle , Melville and Belmont-Victoria Park . High rates of non-urgent ED attendances after hours for the whole and Aboriginal population in South Perth, Gosnells and Belmont-Victoria Park.
SN2.3 Services not tailored to meet individual needs of people with multiple risk factors/chronic conditions.	Lack of person-centred care coordination for those with composite risk factors and comorbid chronic conditions.	Complex chronic conditions and those with multiple risk factors are experienced across Perth South PHN, as evidenced in HN 4.1. A lack of individual, holistic care can frequently lead to ED attendances and potentially preventable hospitalisations. **Place-based** Stakeholder consultation with the local Mandurah, Armadale, Gosnells, Waroona and Pinjarra community identified issues with providing culturally secure services for people living with co-occurring alcohol, drug and mental health issues. 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.
SN2.4 Lack of best-practice management of chronic conditions in primary care across Perth South PHN. Low rates of GP chronic disease care plans and high rates of PPHs for chronic conditions in several sub-regions.	Poor management of patients with chronic conditions can lead to serious complications, loss of quality of life, and increased burden on tertiary care through potentially preventable hospitalisations.	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 required for effective care, however it is estimated only one third of patients with chronic disease

Outcomes of the service needs analysis		
		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 tap associated with meeting documentation and paperwork requirements. **Whole of PHN** *Utilisation of MBS GP chronic disease services* Low rate of utilisation of MBS GP chronic disease services in Perth South PHN compared to Perth North PHN, Country WA PHN, state and national rates. *Potentially Preventable Hospitalisations (PPHs) for chronic conditions*

Outcomes of the service needs analysis		
		From a total of 2,400 PPHs (ASR per 100,000) in Perth South PHN in 2015-2016, 1,124 (ASR per 100,000) were for chronic conditions, slightly higher than Perth North PHN (1,003) but slightly lower than national rates (1,205). *Acute hospital admissions related to chronic conditions* Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates slightly lower rates of acute admissions for drug and alcohol conditions and mental health conditions compared to Perth North PHN. *Same-day renal admissions* Same-day dialysis for kidney disease in Perth South PHN is 5,490.5 ASR per 100,000 in public hospitals and 8,786.9 in all hospitals. This is higher than the state rates of 4,635.3 and 8,058.6 respectively. **Place-based** *Utilisation of MBS GP chronic disease services* High rate of utilisation for MBS GP chronic disease services in Fremantle, Mandurah, Gosnells Kwinana and Armadale, with low utilisation in Serpentine-Jarrahdale, South Perth, Belmont-Victoria Park and Cockburn.

Outcomes of the service needs analysis		
		Potentially Preventable Hospitalisations (PPHs) for chronic conditions High volume of PPHs for chronic conditions in 2015-2016 for Kwinana (1,472 ASR per 100,000), Belmont-Victoria Park (1,324), Rockingham (1,310), Gosnells (1,246), Armadale (1,239), Cockburn (1,233) and Mandurah (1,165)[16]. High rates of specific chronic conditions observed in these regions for: • Kwinana (diabetes complications, COPD, angina, congestive heart failure, anaemia) • Belmont-Victoria Park (COPD, iron deficiency anaemia) • Rockingham (diabetes complications, COPD) • Armadale (diabetes complications, COPD, congestive heart failure) • Cockburn (iron deficiency anaemia) • Mandurah (COPD, iron deficiency anaemia). *Acute hospital admissions related to chronic conditions* High rates of acute hospital admissions for drug and alcohol conditions in Fremantle , Belmont-Victoria Park and Mandurah compared to Perth South PHN . High rates of acute hospital admissions for mental health conditions in Fremantle , Belmont-Victoria Park and Kwinana .

Outcomes of the service needs analysis		
		Same-day renal admissions There are some areas in Perth South PHN with higher admissions for same-day dialysis for kidney disease, including: • Public hospitals: Kwinana (8,526.2 ASR per 100,000); Belmont – Victoria Park (7,388.2); and Fremantle (7,312.9) • All hospitals: Kwinana (14,535.0); Belmont – Victoria Park (13,966.3); and South Perth (12,336.0). Some areas have very low rates, indicating either a lack of health need or a lack of service in the area: • Public hospitals: Kalamunda (2,418.4); Melville (3,326.3); and Serpentine-Jarrahdale (3,483.5) • All hospitals: Serpentine-Jarrahdale (NA <10 admissions); and Mandurah (4,782.0). A workshop for community services in Gosnells also found that services should have increased focus on screening for chronic conditions, developing adequate care plans, and referring clients to community organisations for non-medical conditions if required.
SN3.1 Lack of affordable and accessible primary care services across Perth South PHN. Several sub-regions with higher proportion of adults facing healthcare	Services need to be affordable and accessible, particularly to meet the healthcare needs of those in vulnerable and disadvantaged groups.	Vulnerable and disadvantaged groups have poorer health outcomes and higher need for primary care services. These groups also typically experience increased challenges in accessing care as appropriate

Outcomes of the service needs analysis		
barriers related to cost, transport and connectivity.		and affordable services may not be readily available or accessible. **Whole of PHN** *Barriers to accessing healthcare* Adults living in Perth South PHN are more likely to face barriers to accessing healthcare compared to Perth North PHN[1], with nearly one third of people reporting difficulty accessing services largely due to cost, transport or connectivity. Common barriers include cost (1.5 ASR per 100), transport issues (4.0 to 4.8%) and lack of home internet access (11.9%). These barriers may be 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%). *Waiting times* Almost one in four people who saw a GP in Perth South PHN (2013-14) felt they waited longer than acceptable to get an appointment (22%), slightly lower than the national average (22.6%). **Place-based**

Outcomes of the service needs analysis		
		Barriers to accessing healthcare In Kwinana, Belmont-Victoria Park, Fremantle and Mandurah: • Between 12% to 15% of residences do not have an internet connection • Between 4% to 8% of residences have no motor vehicle • Around 5 ASR per 100 adults do not have access to transport or are housebound • Between 1.5 to 2.0 ASR per 100 adults reported cost as main barrier to accessing healthcare. *Waiting times* Long wait lists and waiting times have been reported as a key barrier by community accessing drug, alcohol and mental health services in the Pinjarra and Mandurah area. Barriers to receiving adequate primary care services in the Pinjarra, Mandurah, Waroona and Armadale areas also include accessibility and transport issues and unsuitable service opening hours.
SN 3.2. Patients across Perth South PHN have difficulty navigating the complex health care system, impacting engagement in appropriate and timely care.	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.	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. Numerous consultations in the Perth South PHN region have identified consistent issues with system

Outcomes of the service needs analysis		
		navigation and the need to develop service roles that help users navigate the health system better and facilitate integrated care and communication between service providers. Further research is needed across Perth South PHN to identify how to support patients to navigate and access the appropriate care in an efficient and timely manner.
SN4.1 Lack of uptake of digital health technologies, including telehealth and My Health Record.	Digital technologies support the efficiency and effectiveness of the health system and can increase patient access to 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. **Whole of PHN** *My Health Record by consumer registration* There was a total of 162,855 My Health Record consumer registrations in Perth South PHN as of 19 October 2017 (18.2% of Perth South PHN population), of which one in five had a Shared Health Summary (22.0%; 35,784). Consumer registrations in Perth South PHN

Outcomes of the service needs analysis		
		increased by 31% in the 12 months from July 2016 to June 2017. *My Health Record by provider location* A total of 27,088 Shared Health Summary records had been uploaded by providers in Perth South PHN as of 19 October 2017, accounting for 16.6% of My Health Record registrations in the area. GP provider registrations increased by 30% in the 12 months from July 2016 to June 2017 in Perth South PHN. *Telehealth* Similar low rates of MBS utilisation for telehealth services in Perth South PHN compared to Perth North PHN and state rates, and lower than Country WA PHN and national rates. **Place-based** *My Health Record by consumer registration* While there are issues with the data quality, preliminary information suggests the highest volume of My Health Record consumer registrations is in Rockingham (29,482), Canning (21,612) and Mandurah (18,443), with the highest proportion of consumers registered in Serpentine-Jarrahdale (25.0%), Kwinana (23.8%), Armadale (22.9%) and Rockingham (22.9%). The highest

Outcomes of the service needs analysis		
		volume of registrations with Shared Health Summary records is in Rockingham (6,252), with the highest proportion of consumers with Shared Health Summary records in Fremantle (25.9%), Gosnells (24.5%) and Mandurah (24.0%). Low volume and rates of consumer registrations and Shared Health Summary records in South Perth, (12.3%), with low rates of registrations also in Fremantle (13.9%) and Melville (14.4%), and low rates of registrations with Shared Health Summary records in Armadale (19.4%), Canning (20.4%) and Cockburn (20.5%). *My Health Record by provider location* The highest volume of Shared Health Summary uploads was observed for providers in Rockingham (4,609), with the highest proportion uploaded by providers in Fremantle (33.7%), Belmont-Victoria Park (30.5%) and Armadale (18.1%). Low rates of provider uploads of Shared Health Summary records in South Perth (1.3%), Cockburn (11.8%) and Kwinana (12.3%). *Telehealth* Very low overall utilisation of MBS services across regions; highest rates in Melville and Mandurah.
SN4.2 Lack of evidence outcomes of primary care services across Perth South PHN.	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.	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 of the service needs analysis		
		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. 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 self-evaluation, to internally improve services, and facilitate better integration of the health care system.

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