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Primary Health Network

Needs Assessment Reporting Template

Country WA 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 Country WA 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 Country WA 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 in Sections 2 and 3, disadvantaged and vulnerable people 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 identified in 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 Country WA 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 Country WA 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 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: WA Country Health Service (WACHS), Rural Health West (RHW), Country WA PHN Regional Clinical Commissioning Committees (RCCC) 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).

Country WA PHN regions all contain areas of high health needs. These are:

- Goldfields
- Great Southern
- Kimberley
- Midwest
- Pilbara
- Southwest
- Wheatbelt

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. Country WA PHN will continue to monitor health trends across the entire PHN region and regularly report to the Regional Clinical Commissioning Committees.

WAPHA has developed an Outcomes Map that is being applied across commissioned services. Services will capture metrics to 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.

Country WA 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 Indigenous Area (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. SA3s, IAREs.
- 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 whole of state approach provides a platform for data sharing across organisations in a way that has not been possible historically or at least not on the current scale. This approach has been further strengthened as more stakeholders become familiar and engaged in our work, including Local Government Agencies and Area Health Services. We recognise this is an evolving process and each PHN has the capacity to adapt as we understand our regions in more depth.

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

- Joint planning
- Performance monitoring
- Outcome evaluations.

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

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

WAPHA engaged Curtin University as its academic partner to work on a number of population health, research and evaluation projects. There have been various benefits of working with an academic institution, most notably is the ready access to specialist skills sets (health economists, spatial analysts etc.) as well as the ability to store and manipulate big data sets. Curtin has recently established a Data Analytics Hub with a focus on 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
HN 1.1 Poor health outcomes in disadvantaged areas. There is evidence of high socio-economic disadvantage across a range of indicators in all regions in Country WA PHN, with higher rates in some sub-regional area.	Socio-economic factors such as over-crowded and sub-standard housing, low household income, long-term unemployment and lower educational attainment can lead to 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* Country WA PHN had the lowest average SEIFA score of the three PHNs in WA (983) in 2011, lower than the Australian average (1,000), with large areas of high disadvantage throughout the region. There is a higher proportion of secondary school drop-out (36.0 vs 29.7 ASR per 100), lower rates of full-time secondary school participation (73.7% vs 82.9%), and higher education participation (24.4% vs. 33.9%), more single parent (21.9% vs 19.1%) and jobless families with children (13.4% vs 11.2%), and adults relying on government assistance for income (28.1 vs 22.8 ASR per 100) in Country WA PHN than respective state rates. There are similar rates of unemployment (5.8% vs 6.0%) and those relying on rent assistance from the government (13.9% vs 13.8%) than respective state rates *Socio-economic disadvantage for Aboriginal population* The IRSEO ranges from 1 to 100, where a score of 1 represents the most relatively advantaged and a score of 100 represents the most relatively disadvantaged. These are based on Indigenous Areas (IAREs), with the Country WA PHN averaging 73.4. In 2014-15, 21 per cent households of Aboriginal people in WA lived in houses of unacceptable standard. **Place-based**

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		Country WA PHN has significant areas of socioeconomic disadvantage (people living in the lowest quintile for socioeconomic disadvantage in WA). The entire Kimberley Region is a 'most disadvantaged' area, whilst the Goldfields, Great Southern, Midwest and Wheatbelt Regions all include areas within the lowest SEIFA quintile. The Pilbara does not have any Local Government Areas (LGAs) in the lowest quintile, but smaller areas within East Pilbara, Port Hedland and Roebourne are in the lowest quintile. *Socio-economic disadvantage for whole of population* The Kimberley, Goldfields and Midwest Regions consistently have socioeconomic indicators of disadvantage (education and family welfare) leading to poor health outcomes: • High percentage of single parent families, highest in Kimberley (32.1%), Midwest (25.7%) and Gascoyne (23.7%) • 40.3 ASR per 100 people in Goldfields and 38.5 in Bunbury did not complete secondary education past year 10 • High unemployment rates in Kimberley (14.5%) and Gascoyne (8.5%). *Socio-economic disadvantage for Aboriginal population* The highest areas of disadvantage based on the IRSEO are in the Kimberley (Fitzroy River, Great Sandy Desert, Halls Creek, and Kalumburu) and Goldfields (Laverton – Ngaanyatjarraku, Menzies – Leonora, Warburton and Wiluna), all with an IRSEO score of 90 or above. These areas (among others) are also characterised by high levels of unemployment, welfare dependence, family dysfunction and lower levels of education, surrounded by poor environmental health.
HN 1.2 Vulnerable population groups need targeted support. Several sub-regional areas have higher populations of vulnerable people such as those from culturally and linguistically diverse (CALD) backgrounds, humanitarian migrants, and people with	People from minority groups can be more vulnerable to poorer physical and mental health problems. People from CALD backgrounds have different cultural norms that can impact on their ability to access timely healthcare	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* In Country WA PHN 6.7% of people were born in a predominantly non-English speaking country, which is much lower than the state rate of 16.6%. 1.6% of the total Country WA population were born in a non-English speaking country and had lived in Australia for less than 5 years, compared with 3.9% for WA. Overall, 0.5% of people (2,455) from Country WA reported

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disability. People living in remote communities are also vulnerable.		poor English proficiency, which was lower than the state rate (1.9%). *Disability and carers* Country WA PHN has a slightly lower proportion of people with a profound or severe disability living in the community at 3.8%, compared to the state (4.1%) and a similar proportion of carers who provide unpaid assistance to those with a disability (9.5% vs 9.8%). *Homelessness* As at the 2011 census, there were 9,595 homeless persons in WA and 4,696 in the Rest of WA (48.9%). In WA, 3,384 homeless persons identified as Aboriginal (35.3%), while only representing approximately 3% of the WA population. *Refugees and migrants* As at the 2011 census, there were 184,911 migrants in WA, 60,745 onshore and 124,169 offshore. Of the total, the majority were skilled migrants (123,362), with 45,177 family migrants, and 16,374 humanitarian migrants. *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 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 Country WA 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. *Prisoner populations* Aboriginal people and males are overrepresented in the WA prison population, with 20.4 Aboriginal persons for each non-

Outcomes of the health needs analysis		
		Aboriginal person, and over 4 males for each female in 2015. **Place-based** *CALD population* The greatest number of migrants from non-English speaking countries were residing in the Bunbury (SA3) region (7,018 people), with the highest sub-regions (SA2s) being Kalgoorlie (1,778) and Karratha (1,694). The greatest number of recent migrants (less than 5 years) from non-English speaking countries were residing in Bunbury (1,690, 1.6% of persons), followed by West Pilbara (1,003, 2.9% of persons) and the Goldfields (952, 2.4% of persons)[1]. The largest numbers of people with poor English proficiency were located in Bunbury (567, 0.6% of persons), Albany (483, 0.9% of persons) and Wheatbelt - North (263, 0.5% of persons). In the Kimberley, many Aboriginal people speak Kriol (2,400 speakers) from birth, an Aboriginal English which is a fusion of traditional Aboriginal languages and English (also spoken in the Northern Territory and with many different versions). Children usually do not encounter Australian English until they get to school, and are often dismissed as having poor English proficiency, rather than needing to learn a second language. The Katanning area of Great Southern has a large CALD community, with the majority speaking Cocos Malay or Karen, with varying levels of English proficiency. *Disability and carers* The Albany region has the highest proportion of people with a profound or severe disability living in the community (4.9%) and carers who provide unpaid assistance to those with a disability (11.4%). The Midwest, Bunbury, Manjimup, Wheatbelt – North and Wheatbelt – South areas also have rates higher than the state, for both indicators. *Homelessness* In Country WA PHN, the highest number of recorded homeless people was in the Kimberley (1,877 people), Pilbara (822 people) and Goldfields (637 people) regions.
HN 1.3 Older people need targeted support. The ageing population across the PHN is older	Generally, older populations have higher prevalence rates of chronic conditions and	Australia's older generation (those aged 65 and over) continues to grow and is projected to more than double by 2057. The ageing of the population creates both pressures and opportunities for Australia's health and welfare sectors. Older adults typically use more health services, as many health conditions and associated disabilities become more common with age. Aboriginal Australians have a significantly younger age profile than non-Aboriginal Australians and are considered older at a

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compared to the state rate; there are sub-regional areas with higher percentages of people over 65 years.	exacerbations of their conditions leading to ED presentations, potentially preventable hospitalisations and acute care.	younger age, with just 3.7% aged over 65 years, compared to 14% across Western Australia. **Whole of PHN** *Ageing population* As at the 2016 census, Country WA PHN had 14.5% of their population aged 65 years and over, equating to 75,397 people. This is similar to the state proportion (14.0%). The proportion of people aged 65 years and older is projected to increase, between 2016 and 2025, from 14.5% of the population to 16.4% (111,342 people). *Palliative care* Palliative and end of life care will be an increasing burden on services, as the older generation continues to grow. Communities need to enable the right care, at the right time and in the right place to reduce unnecessary hospitalisations. **Place-based** *Ageing population* Manjimup (South West) and Albany (Great Southern Region) have the greatest proportion of residents aged 65 years and over, at 21.6% (4,929) and 20.3% (11,996 people) respectively. The Esperance, Midwest, Wheatbelt (North and South) and the three South West SA3s all have proportions higher than the state rate. The region with the greatest number of residents aged over 65 years is the South West (30,369), followed by the Wheatbelt (15,022). In 2025, it is projected that Manjimup will have the greatest proportion of those aged 65 years and over (31.7%, 8,424 people), followed by Augusta - Margaret River – Busselton (26.1%, 14,629 people). The greatest numbers of people are projected to be in Bunbury (19,553) and Albany (18,269). Conversely, less than 1 in 10 people from the Pilbara (5.5%), Goldfields (6.0%) and Kimberley (8.8%) regions are projected to be over 65 years. *Palliative care* By place, the Great Southern and South West regions have high proportions of those aged in the 75-79, 80-84 and 85+ year age groups. This is projected to increase by 2025, notably in Manjimup with 4.4% expected for those aged 85+, compared to the state rate of 1.7%. The Wheatbelt (notably Coastal Wheatbelt and Wheatbelt - South) and Midwest are also expected to have an increasing older population.
HN 1.4 There is a need for accessible culturally	Poorer long-term health outcomes in Aboriginal	The gap in health outcomes between Aboriginal and non-Aboriginal Australians is well documented, particularly around life

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secure primary care. Higher percentage of Aboriginal people living in Country WA PHN compared to Australia, with sub-regional areas with rates of almost 50% Aboriginal population.	people including early onset and poor management of long-term health conditions high mortality and morbidity	expectancy, infant mortality, child mortality, chronic disease prevalence, potentially preventable hospitalisations, and the burden of disease. Approximately 62% of Aboriginal Western Australians live outside of major cities, compared to 22.1% of non-Aboriginal Western Australians, and generally experience higher rates of mortality and hospitalisation. There is a normalisation of poor health outcomes in local communities, which is difficult to overcome. **Rest of Western Australia[i] and Whole of PHN** *Aboriginal population* Aboriginal people represent 8.5% (44,058 people) of the total Country WA PHN population, as at the 2016 census[ii], much higher than the state rate of 3.1%. *Aboriginal morbidity and mortality* Aboriginal people living in the Rest of Western Australia have a much lower median age of death[iii] (52.0 years) compared to the general population living in Country WA PHN (76.0), Aboriginal males at 52.0 and females at 58.0, compared to the median age of death for the Country WA PHN at 73.0 and 81.0 for males and females respectively. This gives a gap of 20.3 years for males, 24.1 for females, and 21.4 years for persons. Aboriginal people living in the Rest of WA have higher rates of mortality due to cancer (82.8 vs 27.0 ASR per 100,000), circulatory system diseases (120.1 vs 47.9) and respiratory diseases (29.4 vs 10.0) compared to the general population living in Country WA PHN[2]. *Hospital admissions for Aboriginal people* Rates of hospital admissions for Aboriginal people in the Rest of WA are 4 times the rate of the general population in WA (85,614 ASR per 100,000 vs 21,037), and higher than the national rate for Aboriginal admissions (55,640). Of particular note, admissions for mental health, respiratory and injury, poisoning and other external causes (see also HN 2.2) are much

[i] Area classified as non-metropolitan areas. WA is split into Greater Perth and Rest of WA for IAREs

[ii] This has decreased from previous estimates of 10.3% (51,162 people), which were estimates based on the 2011 census.

[iii] For years 2010 to 2014

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		higher for the Rest of WA, when compared to national, state, Greater Perth and the rate of the general population in WA. **Place-based** *Aboriginal population*[iv] At the regional level, the proportion of Aboriginal people ranges from 2.3% in the South West (4,132 people) to 41.6% in the Kimberley (14,299 people). Some sub-regional areas are much higher in proportion, including the Indigenous Areas (IAREs) of: Fitzroy River (91.0%); Kalumburu (90.5%); Halls Creek – surrounds (84.2%); Broome – surrounds (78.5%); Great Sandy Desert (77.9%) and Outer Derby – West Kimberley (77.2%), all in the Kimberley; and Warburton (85.4%) in the Goldfields. The IAREs with the largest Aboriginal population: Geraldton (3,585 people); Broome (3,042) and Port Hedland (2,415). *Aboriginal morbidity and mortality* The Pilbara and Kimberley regions have the lowest median ages of death, at 57.0 and 59.0 respectively. The IAREs with the lowest median ages of death are Karratha (43.0) and East Pilbara (49.5)[2]. The following IAREs have the highest rates of death by condition[v]: • External causes: Narrogin - Wagin – Katanning, 175.3 ASR per 100,000 (Wheatbelt); Karratha, 173.1 (Pilbara); Great Sandy Desert and Halls Creek, both 158.4 (Kimberley). • Cancer: Carnarvon – Mungullah, 149.5 (Midwest); Derby – Mowanjum, Fitzroy Crossing, Outer Derby - West Kimberley, all 133.4 (all Kimberley). • Circulatory system diseases: Narrogin - Wagin – Katanning, 214.0 (Wheatbelt); Kalumburu, Kununurra, North Kimberley, Wyndham, all 207.9 (all Kimberley). Data for deaths from respiratory system diseases by IARE are unavailable in most areas and needs further investigation. *Hospital admissions for Aboriginal people*

[iv] There are limitations in the accuracy of total number of Aboriginal people due to non-compliant participation in the census, lack of self-identification, plus the highly mobile nature of Aboriginal populations.
[v] Aboriginal persons aged 0 – 74 years

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		Highest rate of total hospital admissions for Aboriginal people was in the IAREs of Broome (234,480 ASR per 100,000) and Port Hedland (198,292). Particularly high place-based admissions for each region were: • Kimberley: mental health in Wyndham; circulatory system diseases in Derby – Mowanjum; respiratory system diseases in Fitzroy Crossing and Fitzroy River; digestive system diseases in Kununurra and Wyndham; and injury, poisoning and other external causes in Fitzroy River and Wyndham. • Goldfields: mental health in Esperance – Ravensthorpe; and injury, poisoning and other external causes in Wiluna • Midwest: circulatory system diseases in Carnegie South - Mount Magnet, and high rates of injury, poisoning and other external causes in Carnegie South - Mount Magnet and Meekathara - Karalundi • Pilbara: mental health in Karratha; respiratory in Port Hedland; digestive system diseases in Karratha and Port Hedland; and injury, poisoning and other external causes in East Pilbara and Port Hedland • Great Southern: respiratory system diseases in Kojonup – Gnowangerup and mental health • South West: digestive system diseases in Harvey and surrounds; and mental health in Manjimup - Denmark – Plantagenet • Wheatbelt: mental health, respiratory system diseases and injury, poisoning and other external causes in Narrogin - Wagin – Katanning Highest rate of ambulatory-sensitive hospitalisations (potentially preventable hospitalisations) for Aboriginal people of all ages were predominantly in the Kimberley IAREs, notably Fitzroy River, Fitzroy Crossing, Wyndham, Derby – Mowanjum, Argyle – Warmun, and Outer Derby – West Kimberley, all over 12,000 ASR per 100,000. The Rest of WA average rate is 7,695 for Aboriginal people.
	Optimised maternal and child health care is critical to improve long-term health outcomes for Aboriginal people.	The earliest stage of human development — the period from conception to the end of a child's second year — has become known as the first 1000 days. The recent and growing focus on the first 1000 days is due to a mounting body of evidence that shows the significance of environments and experiences during this period. Changes or adaptations made during the first 1000 days can have lifelong effects. In WA, the rates of perinatal mortality and low birth weight babies are higher in rural regions and among Aboriginal Australians than non-Aboriginal Australians[5]. Low birth weight babies (newborns weighing <2,500 grams) are at a greater risk of dying during their first year of life, are prone to ill-health in childhood and the development of a range of chronic diseases as adults. **Whole of PHN** Aboriginal mothers are on average younger than non-Aboriginal mothers (25.6 years compared to 30.5), with the

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		proportion of teenage births in Country WA PHN at 8%, compared to 1% for non-Aboriginal women. Fetal alcohol spectrum disorders (FASD) is a spectrum of lifelong physical and neurocognitive disorders, caused by alcohol use in pregnancy. Prevalence in WA is estimated at 4.08 per 1,000 for Aboriginal births, compared to 0.03 per 1,000 for non-Aboriginal births. *Low Birth Weight Babies* The Rest of WA by IARE had a rate of 14.1% for low birth weight babies, compared to the Country WA PHN and state at 5.8% and 6.0% respectively, for the years 2012 to 2014. Mothers who smoked during pregnancy (2012 to 2014) was 50.3% for Rest of WA IARE, 13.3% in Country WA PHN, compared to the state rate of 8.9%. *Teenage mothers* Although the total percentage of teenage mothers was greater for all Country WA PHN Regions than the State average, the rate is showing a general decline since 2008/09. The Pilbara and Goldfields have decreased by the largest proportion. *Early Childhood Development* Country WA PHN had a higher percentage of children who were developmentally vulnerable on one or more domains (25.3%) compared to Western Australia (21.3%) and Australia overall (22.0%). This rate is doubled for Aboriginal children by Rest of WA IARE, at 53.5%. Children who were developmentally vulnerable on two or more domains in Country WA PHN is 13.4%, again higher than the state rate of 10.5%, but with the Rest of WA IARE much higher at 34.4%. **Place-based** *Low Birth Weight Babies* The region with the highest rate of low birth weight babies (2012 to 2014) was Wheatbelt – South (7.2%) and Bunbury

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		(6.6%)[1]. For Aboriginal babies from Country WA PHN, the percentages of low birthweight babies were highest in the IAREs of Narrogin – Wagin – Katanning (24.7%), Campion (21.0%) and Harvey and surrounds (20.5%). Mothers who smoked during pregnancy (2012 to 2014) was highest in the region of Wheatbelt – South (17.9%) and Esperance (18.0%). Aboriginal mothers who smoked, by IARE, ranged from 27.3% in Busselton to 66.7% in Campion and Shark Bay - Coral Bay - Upper Gascoyne. *Early Childhood Development* Within Country WA, Kimberley SA3 had the highest percentage of children who were developmentally vulnerable in one or more domain (43.4%), followed by Gascoyne SA3 (27.7%) and Midwest SA3 (27.6%). • This rate is much higher in Aboriginal children only. By IARE, the highest rates are in the Great Sandy Desert (88.9%), Broome and surrounds (75.7%) and Fitzroy Valley (71.4%). Children who were developmentally vulnerable on two or more domains was highest in the Kimberley (28.3%), Midwest and Pilbara (both 14.9%). • For Aboriginal children only, the rates are greatest in the Great Sandy Desert (70.4%), Broome and surrounds (54.1%) and Roebourne – Wickham (53.8%). Stakeholder feedback has indicated a need for maternal and child health services in the Shire of Leonora in the Goldfields region, following a recent reduction in service provision[21]. There is no data available for children who are developmentally vulnerable or of low birth weight in this area, prompting the need for further investigation. FASD has been identified as a community priority in the Fitzroy Valley in the Kimberley region where it is estimated 1 in 8 children born in 2002 / 2003 have FASD, one of the highest rates worldwide. This has led to the Lililwan Project which aims to provide accurate prevalence data for the area. FASD is also a priority in the Goldfields.
HN 2.1 There is a need to modify lifestyle risk behaviours. High rates	Targeting improvements in lifestyle behaviours has the ability to reduce	Behavioural and lifestyle factors impact on the development and progression of chronic illness. Poorer health outcomes are associated with poor nutrition, obesity, physical inactivity, smoking and risky alcohol consumption. Many of these risk factors, although modifiable, are also subject to the socioeconomic environment in which one is living. This includes access

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of lifestyle risk factors are evident across the PHN population, in particular overweight and obesity in children and adults which can lead to chronic condition. High rates of notifiable diseases, particularly in Aboriginal communities.	modifiable risk factors to prevent and manage chronic disease, in addition to improving overall mental and physical wellbeing among children and adults.	to and knowledge of a healthy diet, and lifestyle[1]. **Whole of PHN** *Adults* Country WA PHN consistently has higher rates of risk factors when compared to the state average. Nearly 4 in every 5 adults (males: 79.6 ASR per 100; females: 77.4) have at least one of four risk factors (obese, current smoker, low rates of physical activity, high risk alcohol consumption) putting them at higher risk of chronic disease (state 74.5 for males and females). Compared to state rates for individual risk factors, Country WA PHN has (ASR per 100): • Higher rates of smokers, both male (23.0) and female (15.7) • Higher numbers of residents consuming alcohol at levels considered to be a high risk to health (22.2 vs 19.5) (*See AOD Needs Assessment for detailed evidence on alcohol consumption in the PHN population)* • Residents are more likely to be obese (males: 28.9; females: 29.4 vs m:24.2 and f:24.4), rather than overweight (m:37.3 and f: 30.7 vs m: 41.2 and f: 30.1) • Residents have higher rates of waist measurements which indicate an increased risk of developing chronic disease (m: 59.2 and f: 69.2 vs m: 51.3 and f: 64.7) By IARE, Aboriginal people also have higher rates of smoking (44%), risky alcohol consumption (1.1 times more likely to have exceeded guidelines for single occasion alcohol consumption risk), obesity (66%), and psychological distress compared to non-Aboriginal people. *Children* Children in Country WA PHN have higher rates of overweight and obesity when compared to the state, as well inadequate fruit intake. *Lifestyle risk factors* Age-standardised notification rates for sexually transmitted infections were higher for Aboriginal Australians than for other Australians in 2013–2015: 3 times the rate for chlamydia, 5 times the rate for non-congenital syphilis, 16 times the rate for gonorrhoea, and 6 times the rate for hepatitis C.

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		Place-Based *Adults*[vi] Of those places where data is available for risk factors, obesity is statistically significant for all regions in Country WA, for both males and females (Great Southern, South West, Midwest and Wheatbelt). This is the same for waist measurements in males for the areas indicated above, and females (in Albany, Bunbury and the Wheatbelt), both indicating an increased risk of developing chronic disease, if not already diagnosed. • Wheatbelt – North and Midwest SA3s have smoking rates higher than the state with statistical significance • Albany, Bunbury, Manjimup (males only) and Wheatbelt - North have statistically higher rates of composite risk factors (obese, current smoker, low rates of physical activity, high risk alcohol consumption) o The sub-regions with a higher rate of composite risk factors, statistically significant when compared to the Country WA PHN are: Collie, Harvey/Waroona and Katanning *Children* Of the data available, there are no sub-regional areas that are statistically higher than the Country WA PHN or state rate for risk factors in children. As an indication, the Midwest SA3 has the greatest rate of obese children (6.5 ASR per 100), higher than state rates (6.1), and the Wheatbelt region has the highest rate of overweight children and the lowest rates of adequate fruit intake.
HN 2.2 There is a need to modify risk behaviours. Evidence of higher rates of injury across the PHN including domestic violence and road traffic accidents. Injury rates in some sub-regional areas are particularly high for children.	Injury is preventable and is caused by circumstantial, hazardous environments and unnecessary risk behaviours	Remote/very remote or socioeconomically disadvantaged areas have been consistently shown to have a significantly higher risk of injury when compared to state and metropolitan PHNs, including domestic violence and road traffic accidents. Falls are the leading cause of injury death and hospitalisation in over 65s, who are also more at risk of death due to injuries as a result of fires, burns and scalds. [1] *Please refer to the Mental Health Needs Assessment for Suicide and self-inflicted injury* **Whole of PHN** Injury is the fifth leading cause of all illness and death in Australia at 9%[25]. Country WA PHN's rate of avoidable mortality from transport accidents was 16.3 (ASR per 100,000), considerably higher than the state (8.5) and national rates (6.2). From 2012-2016, 4,102 people were killed or seriously injured in road crashes[26]. Males are evidenced as having a significantly

[vi] Risk factor data is not available in some regions including Esperance, Goldfields, Gascoyne, Kimberley and Pilbara.

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		higher risk of injury. 61% of deaths as a result of rural road traffic accidents were males. Aboriginal people in WA had higher age-standardised rates of hospitalisation for injury compared with non-Aboriginal Australians between July 2013 and June 2015 (62 compared with 24 per 1,000). The most common injuries resulting in hospitalisations were assaults (30%), falls (17%) and complications of medical and surgical care (13%). Also, one in four (26.8 per cent) Aboriginal adults 15 years and over had experienced physical or threatened physical violence in last 12 months. Self-reported domestic violence rates are higher in Country WA than state rates, but likely to be underreported. Aboriginal people were 15.7 times more likely to die from interpersonal violence than non-Aboriginal people. *Refer to AOD Needs Assessment for further evidence.* **Place-Based** The highest rate of hospitalisations due to injury, poisoning and other external causes was in the Kimberly region, followed by the Gascoyne and Midwest. The highest rate of deaths form external causes was in the Kimberley (102.3 ASR per 100,000), Wheatbelt – North (63.8) and Wheatbelt - South (55.9). The highest rate of death specifically for road traffic injuries was Wheatbelt – North (30.6 ASR per 100,000), Wheatbelt – South (22.0) and Kimberley (20.3). High levels of domestic violence, including trauma, were reported in: Geraldton (Midwest); in Leonora and Laverton (Goldfields); Katanning (Great Southern); South Hedland, Karratha/Roebourne (Pilbara) and Narrogin (Wheatbelt).
HN 3.1 There is a need to access relevant primary care for people living with chronic conditions. Prevalence of chronic conditions are evident across the PHN; some sub-regions have higher rates of people living with chronic conditions.	Chronic conditions vary in severity but can impact on a person's functional capacity and quality of life. People with chronic conditions are at risk of developing secondary conditions (co- and multi-morbidities)	Chronic conditions vary in severity but can impact on a person's functional capacity and quality of life, and are responsible for 66% of the total burden of disease in Australia. Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal Australians, who experience 2.3 times the rate of disease burden and 3.8 times the age standardised death rate. *Risk Rising Population* The rising-risk chronic disease population group typically represent 20-30% of the population, and due to their numbers, can actually account for a higher total healthcare spend than the high-risk group. The rising-risk group is not yet sick enough

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		for expensive clinical care, but are past the point where preventative solutions are effective. **Whole of PHN[vii]** *Chronic conditions* For 2011-12, chronic conditions in Country WA PHN were slightly higher for circulatory system diseases, respiratory system diseases, including asthma and COPD, and musculoskeletal conditions, including arthritis. Age standardised death rates for Aboriginal people in WA from diabetes alone was 9 times higher compared to non-Aboriginal people, and twice the rate for respiratory disease. General Practice diagnosed chronic conditions were less in Country WA PHN, compared to WA . This could indicate that many conditions which people are dying from are undiagnosed, or being diagnosed at a later stage. *Comorbidity* Country WA PHN had a similar proportion of practice diagnosed chronic conditions of two categories or more, and slightly more in the three, four and four or more categories. *Median age of death and avoidable deaths* The median age of death in Country WA PHN is 76.0 years, lower than the state rate of 80.0 (please *see HN 1.4 for Aboriginal specific information),* and higher rates of all avoidable mortality causes (cancer, diabetes, circulatory system diseases and respiratory system diseases). **Place-based** *Chronic conditions*

[vii] Prevalence of chronic conditions was not available in all SA3s

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		Estimated diabetes rates are the highest in Midwest (5.7 ASR per 100) followed by Manjimup (5.6 ASR per 100); rates are similar to state and national rates (rates from Kimberley, Pilbara and Gascoyne are not available). Although the Wheatbelt did not come up in the highest rates for diabetes, stakeholder feedback recognises that it is a serious issue, especially for Aboriginal communities in the area, many undiagnosed. This is similar to what is seen in the Pilbara, with a high prevalence of chronic disease, especially diabetes, among the Aboriginal population. Estimated respiratory system disease is the highest in Manjimup (35.9 ASR per 100) followed by Wheatbelt North (33.8 ASR per 100); rates are higher than the state (30.2) and Australian rates (28.7). Estimated circulatory disease is highest in Esperance (17.6), followed by Midwest (17.4), compared to the state rate of 15.7. *Comorbidity* Albany has the highest practice-diagnosed total chronic conditions by proportion and Bunbury is the highest by volume. These areas are consistently higher for categories with two, three, four, and four or more conditions, with the Esperance featuring with a high proportion of those with two conditions, Manjimup for those with three conditions and the Midwest for those with four comorbid conditions. As an indication, 5 out of 6 patients with diabetes admitted to hospital in Manjimup had a second chronic condition. *Median age of death and avoidable deaths*[viii] The Pilbara (57.0 years) and Kimberley (59.0 years) have the lowest median age of death, both with high rates by avoidable death from diabetes. Prevalence rates of diabetes is unavailable for these areas but this gives an indication. The Kimberley also has the highest rates of avoidable death of circulatory system diseases, including ischemic heart disease, and respiratory system diseases, including COPD. The Goldfields SA3 has the second highest rates in the areas identified above. The Midwest SA3s have the highest rates of avoidable deaths from all cancers.
HN 3.2 People with chronic conditions need to be able to effectively	The majority of chronic conditions require effective management,	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

[viii] Avoidable deaths refer to deaths from conditions that are considered avoidable, given timely and effective health care (including disease prevention and population health initiatives)

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self-manage. Evidence across the PHN of poor self-management of chronic conditions and poor medication compliance.	including medication management, to prevent progression, and to avoid potentially preventable hospitalisations and unnecessary ED attendances	engaging with GPs to help manage and treat their conditions, having a good understanding of their condition, and complying with medication[ix]. **Whole of PHN** Stakeholder consultation on the self-management of chronic conditions, in particular diabetes, among the Aboriginal population is attributed to the lack of knowledge or capacity to self-monitor or recognise a worsening condition, plus confusion around some of the medications prescribed. Feedback also indicated a lack of medication reviews. *Primary care prescriptions for chronic disease* Overall, Country WA PHN are quite similar in rates of prescriptions per 100 population when compared to the Perth North and South PHNs for chronic conditions made through primary care practices for all conditions (mental health, circulatory system, diabetes, musculoskeletal, high blood cholesterol and respiratory. *Potentially Preventable Hospitalisations (PPHs) for chronic conditions* Country WA PHN has the highest chronic PPHs (1,271 ASR per 100,000) higher than both Perth North (1,003) and Perth South (1,124) PHNs, and slightly higher than the national rate (1,205). The chronic PPH with the highest rate is COPD (280) and congestive heart failure has the highest number of bed days (8,019). 21.8% of chronic PPHs in Country WA PHN were released on the same day, much lower than the national rate of 31.1%. *Acute hospital admissions related to chronic conditions* Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates higher rates of acute admissions for drug and alcohol conditions and mental health conditions than Perth North PHN and Perth South PHN . **Place-based** *Primary care prescriptions for chronic disease*

[ix] Poorly managed chronic conditions can lead to potentially preventable ED attendances and hospitalisations – refer to HN4.1 Poorly managed chronic conditions can lead to higher readmissions rates – refer to HN4.2. (Note: readmission rates for individual patients is unavailable in the absence of linked patient data).

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		Medication prescribed in primary care for chronic conditions, by area, are as follows: • Mental health: Highest by rate and volume in Bunbury • Circulatory: Highest by rate in Esperance, by volume in Bunbury • Diabetes: Highest by rate in Esperance, by volume in Bunbury • Musculoskeletal: Highest by rate and volume in Bunbury • High blood cholesterol: Highest by rate in Esperance, by volume in Bunbury • Respiratory: Highest by rate and volume in Bunbury. This could be interpreted two ways: first, that rates for these chronic conditions and highest in these areas; or conversely, these are the areas where chronic conditions are being managed more appropriately, because they are actively visiting the GP and their condition is being managed. The data will not tell us if the medication is being used effectively through self-management. *Potentially Preventable Hospitalisations (PPHs) for chronic conditions* Chronic PPHs are the highest in the Kimberley (2,537), more than double the rate of Country WA PHN (1,271), followed by Goldfields (1,812) and Gascoyne (1,581). Wheatbelt - North had the highest number of chronic PPH bed days (4,059), with Manjimup averaging the highest length of stay (5.1 days). The PPH hotspots[x] per country region, by chronic condition only and sub-region (SA2) are as follows: • Kimberley: Broome; Derby – West Kimberley; Halls Creek; Kununurra and Roebuck. • Pilbara: Ashburton; East Pilbara; Newman; Roebourne; and South Hedland. • Midwest: Geraldton; Geraldton – East; Geraldton – South; and Meekatharra • Goldfields: Boulder; Kalgoorlie; Kambalda-Coolgardie-Norseman; and Leinster - Leonora • Great Southern: Denmark; Gnowangerup; and Katanning • Wheatbelt: Chittering; Cunderdin; Merredin; Moora; Mukinbudin; and Narrogin • South West: College Grove – Carey Park; Collie; Dardanup; Harvey; and Koombana. *Acute hospital admissions related to chronic conditions* High rates of acute hospital admissions for drug and alcohol

[x] A 'hotspot' is an area (SA2) that shows a rate of hospitalisation of at least 1.5 times the state average for any one of the PPH conditions outlined by the AIHW. A Standardised Rate Ratio (SRR) was used to adjust for population age differences. The analysis was based on inpatient admissions from 2010/11 to 2015/16.

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		conditions in Kimberley, Esperance and Gascoyne , and high rates of acute hospital admissions for mental health conditions in Albany , Kimberley and Wheatbelt-South . The Flinders Program, a model of chronic self-management, is being implemented in the South West, which directs funding towards self-management and health literacy, in collaboration with Integrated Chronic Disease Care (ICDC) programs within general practice.
HN 4.1 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 health issues (physical, mental and AOD) that could exacerbate their existing condition	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. It has been estimated that 18.1% of the burden of injury, and 9.7% of mental illness burden are attributable to alcohol (significantly higher than other recognised health risk factors in Australia). Alcohol directly causes cancers of the liver, bowel, mouth, pharynx and larynx, oesophagus, and breast, indirectly increases the risk of developing numerous cancers by contributing to the risk of overweight and obesity. Binge drinking and continued alcohol use in large amounts have also been associated with the many health problems including: unintentional injuries such as car crashes, falls, burns, drowning, 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. These problems frequently lead to ED attendances and potentially preventable hospitalisations. *Refer to AOD Needs Assessment for further evidence.* **Whole of PHN** *Chronic conditions and Mental Health and AOD* Within Country WA PHN there is evidence of a high prevalence of those with Type 2 Diabetes having multiple chronic conditions, which has a significant impact on not only the individuals' health and wellbeing, but also the complexities of treatment and management. 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), strongly associated with the prevalence of current smoking[40] (r=0.7513), estimated prevalence of diabetes (r=0.5760), circulatory disease (r=0.5537), musculoskeletal conditions (r=0.5491), and opioid (ATC NO2A) and anti-inflammatory (ATC M01) prescription use (r=0.5091). Excessive alcohol consumption is also associated with PPH due to cellulitis (r=0.5534),

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		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).
HN 4.2 There is a need for increased patient awareness to prevent high ED attendances for non-urgent conditions in several sub-regional areas across the PHN.	People presenting to ED with non-urgent conditions could potentially be treated in primary care	High rates of non-urgent ED attendances (triage categories 4 and 5) 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* Country WA PHN had more than three times the rate of non-urgent ED presentations compared with the Perth North and Perth South PHNs. Top diagnosis codes for Country WA PHN ED attendances were for injury and poisoning, skin conditions and musculoskeletal conditions. *Non-urgent ED attendances for Aboriginal people* Country WA PHN had a much higher proportion of non-urgent ED presentations by Aboriginal patients, with the top diagnosis codes of skin conditions , injury and poisoning and musculoskeletal conditions . **Place-based** *Non-urgent ED attendances* The highest place by volume and proportion was the Kimberley. This is followed by Gascoyne and Esperance . The highest rates in each of the top five diagnosis categories, by place, are as follows: • Injury and poisoning: Bunbury • Skin conditions: Manjimup • Musculoskeletal conditions: Goldfields • Ear, nose and throat: Kimberley • Factors influencing health status: Esperance

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		Non-urgent ED attendances for Aboriginal people The Kimberley also had the highest ED attendances for Aboriginal people by volume and proportion , followed by Wheatbelt – South and Gascoyne . The highest rates in each of the top five diagnosis categories, by place, are as follows: • Skin conditions: Goldfields • Injury and poisoning: Bunbury • Musculoskeletal conditions: Goldfields • Ear, nose and throat: Wheatbelt - North • Factors influencing health status: Esperance
HN 4.3 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 treatable – or treated at an earlier stage – in primary care. This is better for the patient and the system.	Potentially preventable hospitalisations (PPHs) are admissions to hospital for a condition where the hospitalisation could have been prevented through the provision of appropriate individualised preventative health interventions and early disease management, usually delivered in primary care and community-based care settings (including by general practitioners, medical specialists, dentists, nurses and allied health professionals). They can be categorised as acute, chronic or vaccine preventable. 'Hotspots' are small areas with relatively high risk or incidence of a particular health problem – are being used to target and tailor public health interventions around the world. *See HN 3.2 for further information on chronic PPHs.* **Whole of PHN** *Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions* Country WA PHN has the highest Total PPHs (3,044 ASR per 100,000) of the three WA PHNs and is also higher than the national average (2,643). The chronic (1,271), acute (1,622) and vaccine preventable (185) PPHs were also highest of the three WA PHNs. In 2015-16, there was a total of 16,881 separations for PPHs accounting for 61,721 bed-days in Country WA PHN hospitals, averaging a length of stay of 3.7 days. • The highest chronic PPHs were for COPD (280 ASR per 100,000), congestive heart failure (246) and diabetes complications (228).

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		• The highest acute PPHs were for cellulitis (374), dental conditions (372) and kidney and urinary tract infections (320). There was an observed association between hotspots and greater socioeconomic disadvantage and higher proportions of Aboriginal people in the population. The conditions with the greatest number of hotspots found were COPD, diabetes complications and convulsions and epilepsy. *Ambulatory-sensitive hospitalisations* Ambulatory-sensitive hospitalisations (ASH) are another term for PPHs and used as a national indicator for Aboriginal people, by IARE, where a hospitalisation could have been potentially prevented through timely and accessible, quality primary and community-based care. The Rest of WA has an ASH rate of 7,695 (per 100,000) for the 2012/13 year, much higher than the national rate (4,582) and that of Greater Perth (4,168). **Place-based** *Potentially preventable hospitalisations for acute, chronic and vaccine preventable conditions* Total PPHs are by far greatest in the Kimberley (7,338), more than double the rate of Country WA PHN. The Kimberley also has the highest rates of chronic (2,537), acute (4,148) and vaccine preventable (850) PPHs. Kimberley also had the highest number of total PPH bed days (8,591), followed by Wheatbelt – North (7,159) and Midwest (6,710). The highest average length of stay for total PPHs were in Augusta – Margaret River – Busselton and Manjimup, both 4.3 days. *Hotspots* The area of greatest need was the Kimberley. Each SA2 in the Kimberley was a hotspot for multiple conditions. Each Kimberley SA2 was also a hotspot for all PPHs considered collectively and each major category of acute, chronic and vaccine preventable conditions. The hotspots with the greatest Standardised Rate Ratios (SRRs) and the greatest inequity of outcome were Derby – West Kimberley and Halls Creek, particularly for PPHs due to vaccine preventable conditions. • Acute PPH conditions featured as hotspots in: o The Pilbara for cellulitis, convulsions and epilepsy, ear, nose and throat (ENT) infections and UTI, including

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		pyelonephritis (in South Hedland). o Midwest and Gascoyne for cellulitis, convulsions and epilepsy, and ENT infections o Goldfields for cellulitis and convulsions and epilepsy o Albany for ENT infections and convulsions and epilepsy o Wheatbelt for ENT infections and convulsions and epilepsy o Bunbury (College Grove – Carey Park SA2) for convulsions and epilepsy o Manjimup for convulsions and epilepsy *See HN 3.2 for chronic PPHs* • Vaccine preventable PPHs also featured highly throughout the Pilbara (notably South Hedland), the Midwest and the Goldfields. For Country WA PHN Aboriginal people compared with State Aboriginal people, SRRs for total PPH rates were greatest for those from the Goldfields and Wheatbelt Regions (both~1.2 times higher), the South West Region (~1.5 times higher) and the Kimberley Region (~2 times higher). *Ambulatory-sensitive hospitalisations* The highest ASH rate by place was in the Kimberley region, Fitzroy Crossing and Fitzroy River, both with rates double that of the Country average (14,445 and 14,740 respectively). All other IAREs (except Halls Creek – Surrounds with 7,211) in the Kimberley were higher than the Country rate (7,695). Other IAREs with rates higher than the Country rate are: Carnegie South - Mount Magnet (Midwest); Kalgoorlie - Dundas – Goldfields (Goldfields); Port Hedland and Exmouth – Ashburton (Pilbara); and Narrogin - Wagin – Katanning (Wheatbelt).
HN 4.4 Need for some conditions to be treated in primary care at an earlier stage to prevent high rates (volume) of 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**

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		Acute hospital admissions by volume The total acute hospital admissions in Country WA PHN for 2016/17[xi] was greater than both Perth North and Perth South PHNs. Hospitalisations for Aboriginal people in WA are 4.3 times higher than non-Aboriginal people. *Acute hospital admissions by Diagnostic Related Group (DRG)* The top diagnostic related categories (DRGs) of acute hospital admissions in Country WA PHN include acute infections, gastrointestinal and cardiovascular disease . *Same-day renal admissions* Same-day renal dialysis for kidney disease in Country WA PHN is 3,807.5 ASR per 100,000 in public hospitals and 7,050.3 in all hospitals. This is compared to the state rate of 4,635.3 and 8,058.6 respectively. **Place-based** *Acute hospital admissions by volume* The Kimberley had the highest acute hospital admissions, more than double the rate of Country WA PHN. The Goldfields and Midwest SA3s had the next highest acute admissions. *Acute hospital admissions by Diagnostic Related Group (DRG)* The top DRGs in the Kimberley were for acute infections, gastrointestinal and respiratory. Acute infections, gastrointestinal and cardiovascular disease admissions featured highest in all areas, except for Albany, where mental health had the second highest rate.

[xi] Projected from 2013/14 data

Outcomes of the health needs analysis		
		Same-day renal admissions Although rates for same-day dialysis for kidney disease are quite similar for Country WA PHN and the state, there are areas of much higher usage. These are: • Public hospitals: Goldfields (18,064.5 ASR per 100,000); Pilbara (14,743.9); and Midwest (7,551.9) • All hospitals: Kimberley (39,058.8); Goldfields (21,157.3); and Pilbara (16,613.4) Some areas have very low rates, indicating either a lack of health need or a lack of service in the area: • Public hospitals: Manjimup (43.9); Wheatbelt – North (59.4); and Augusta - Margaret River – Busselton (70.2) • All hospitals: Gascoyne (NA <10 admissions); Wheatbelt – North (636.1); and Wheatbelt – South (867.3) Qualitative evidence indicates that Derby (Kimberley) has an overnight renal hostel that is empty as they cannot staff it.

Section 3 – Outcomes of the service needs analysis

This section summarises the findings of the service needs analysis in the table below. For more information refer to Table 2 in '5. Summarising the Findings' in the Needs Assessment Guide on www.health.gov.au/PHN.

Additional rows may be added as required.

Outcomes of the service needs analysis		
Identified Need	Key Issue	Description of Evidence
SN 1.1 There are lower levels of primary health care providers across the PHN compared to state and national rates	Inadequate supply of primary care services mean people with health care needs are not able to access the right care at the right time in order to effectively manage their health	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. Comprehensive primary health care includes health promotion, illness prevention, treatment and care of the sick, community development, and advocacy and rehabilitation. **Whole of PHN** *Allied health workforce supply* In 2015, overall rates of registered practitioners per 10,000 persons were lower for Country WA PHN compared with the State in the categories of: total Nurses and Midwives; Occupational Therapists; Pharmacists; and Physiotherapists. Country WA PHN had higher rates per 10,000 resident population in the categories of: Aboriginal Health Workers; Nurses and Midwives in an Aboriginal Health Service; and slightly higher ratio of General Practitioners. **Place-based** *Allied health workforce supply* Wheatbelt – North has low rates of allied health workforce across nearly all categories. The Coastal Wheatbelt (Shires

Outcomes of the service needs analysis		
		of Dandaragan, Gingin and Chittering) is situated on the immediate outskirts of the metropolitan region, resulting in limited facilities and service delivery, with most accessing services in the Northern metropolitan area. Projected population increases in both areas are predicted to impact this service capacity further. The Pilbara has low rates of Nurses and Midwives, Pharmacists and Dental Practitioners, Esperance has the lowest rate of Pharmacists and Manjimup has low rates of Occupational Therapists and Physiotherapists. The rate of General Practitioners is lowest in the Goldfields, with the highest rates being in the Gascoyne and Kimberley. Even though these regions have high workforce rates, there is also high fragmentation of services. There are no Aboriginal Health Workers in the South West region, the Wheatbelt, Esperance or Gascoyne, and very few in Albany. The South West, Esperance and Manjimup also have no or very low rates of Nurses and Midwives in Aboriginal Health Services. Stakeholder feedback in the Great Southern has indicated a lack of and need for child development services, including access to multidisciplinary teams comprising medical services (paediatrician), child health nurses, speech pathology, physiotherapy and occupational therapy. This has increased waiting list times and the need to travel to Bunbury or Perth to access these services.
SN 1.2 Challenges in recruiting suitably skilled workforce and high workforce turnover in rural/remote regions	High turnover compromises continuity of care with recruitment difficulties and delays also resulting in gaps in service.	Country WA PHN covers approximately 2.5 million square kilometres, with four of the seven regions being primarily very remote: Pilbara (99.9%), Goldfields (99%), Kimberley (97%) and the Midwest (91%). As at 2016, the WA Country Health Service (WACHS) delivers to 71 hospitals – six larger Regional hospitals, 15 medium sized District hospitals, and 50 small hospitals, and 27 nursing posts. Health professionals in Country WA are often servicing vast catchments and in geographic isolation from peers. **Whole of PHN** Attracting permanent staff to rural and remote locations remains a challenge, with a high turnover rate across all workforce areas. In the last year (30th November 2015 to 30th November 2016) the turnover rate of the rural workforce was 13.8%, increasing by 1% from the previous year. The turnover rate of the GP workforce in rural AMS practices between November 2015 and November 2016 decreased from 26.9% in 2015 to 21.7% in 2016. 56.0% of the rural and remote medical workforce in WA had obtained their basic medical qualification overseas, with the

Outcomes of the service needs analysis		
		largest proportion coming from India, the United Kingdom and Nigeria. During the 2016-17, WACHS has developed innovative staffing models to address regional staff requirements across nursing and midwifery, medical, allied health, mental health and Aboriginal health. Stakeholder feedback in the region indicates "*workforce continuity is a problem—being employed for 6 months at a time does not allow you to bite your teeth into long term projects… [we can] support chronic clients only and this affects community relationships and integration*." **Place-based** The Pilbara region experienced the greatest proportional movements out (31.6% of all departures), with the majority of these GPs going interstate or overseas. The Great Southern region experienced the least movement out, with only 9.2% of GPs departing. The South West region experienced the greatest movement inward (35.8%), reflecting the Influx of GPs moving into the greater Mandurah area for the second consecutive year (21 GPs, 36.2% of south west arrivals).
SN 1.3 Lack of appropriately targeted services for specific cohorts, including ageing populations, people living in remote communities and culturally and linguistically diverse populations.	Services should be targeted to specific high-risk groups, to increase accessibility and acceptability for vulnerable people.	Vulnerable people, including the ageing population, 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 Country WA PHN, and further research is needed to address this issue. **Whole of PHN** Country WA PHN has 68.8 Residential aged care places per 1,000 population aged over 70 years, compared to the state rate of 73.3 and national of 82.6. Operational aged care places include transitional, community and residential places which are delivered by Government, for profit and not for profit providers. Between 2006 and 2015, the number of operational aged care places increased from 446 to 732 places. However, due to a gradual increase in the number of older persons, the number of places per 1,000 persons has declined marginally since 2011. In Country WA, there are limited or no palliative care services and prohibitive cost of treatment.

Outcomes of the service needs analysis		
		Place-based The areas with the lowest residential aged care places per 1,000 population aged over 70 years are: Gascoyne (22.9), Esperance (52.7), Manjimup (54.0) and Wheatbelt – North (55.4). These areas are also projected to have an increasing ageing population by 2025 (with the exception of Wheatbelt – North, which will increase slightly in number but not proportion), putting pressure on these services. There is a gap in palliative care in the Great Southern region, with one quarter of all palliative care patients in Country WA PHN being located in this region (2015-16). Stakeholder feedback from the Goldfields region indicates high levels of hospitalisations for various cancers, respiratory conditions and preventable chronic conditions in the older age groups and dialysis in the Aboriginal older female community. This may indicate increased frailty, disability and functional decline at a younger than expected age. A need for local services to prevent, manage and treat these conditions in the community would assist in avoiding hospitalisation. The CALD population in the Great Southern have a good awareness of their local general practitioner services, indicating in a local survey that the main reasons they would go to the ED was if: there were long waiting times at the GP; there was a time conflict with work; or cost barriers. There are indications from this survey that allied health (including mental health) is not being utilised if needed due to: language barriers; not needing the service; lack of knowledge of service; and costs of service. The majority of respondents would like information about services available to them, interpreting services and cost information. Further investigation is needed to examine if this is comparable in other regions.
SN 1.4 Lack of culturally safe services for Aboriginal people, particularly in sub-regions with higher density of Aboriginal populations	All services should be accessible and culturally safe for Aboriginal people	The Aboriginal concept of health is not the same as in western society. Instead of the biomedical understanding alone, it is holistic and all-encompassing-concepts that include the land, environment, community, relationships and the law along with physical. Access to mainstream health services can be difficult for the Aboriginal population due to socioeconomic disadvantage, geographical distance and relatively high mobility, poor record keeping and a lack of culturally appropriate mainstream health services. A holistic and integrated approach to Aboriginal health is required to address social determinants and better health outcomes. Culturally appropriate services and programs are necessary in partnership with the Aboriginal Community Controlled Health Organisations (ACCHOs) and other providers.

Outcomes of the service needs analysis		
		Whole of PHN Stakeholder consultation suggests there is a fear around accessing health services for many Aboriginal people, including the fear of judgement and the fear that there is something wrong. In addition, the language and terminology used by some services is too technical and reduces understanding of what is being told. Aboriginal Health Workers are integral in supporting Aboriginal people to navigate the western health care system, and ensuring it is culturally appropriate. Lack of culturally safe services across sectors including health, education, justice - evidenced by underutilisation of non-AHW workforce in some regions. Aboriginal patients often feel services and health providers do not provide cultural humility, which includes limited understanding of the individual's personal circumstances and their ability to navigate the system. There are consistent access and language barriers to visiting GP and specialist services within communities and across the state, as well as suggestions of widespread racism and discrimination, often covert in nature. **Place-based** Across Country WA PHN, stakeholder feedback identified a disconnect between some services and local Aboriginal communities. This can also include limited awareness of what the service can provide, but also a lack of trust and confidentiality of the service being of major concern. **Some evidence of service areas which may not be accessible or culturally secure for Aboriginal people:** • High GP, nurse, psychologist service ratio in Kimberley, yet low uptake. • No/limited AHW presence in some regions (Coastal Wheatbelt, Mullewa in Midwest, Tom Price in Pilbara). • Need to build capacity of the Aboriginal workforce in and around Kalgoorlie. Insufficient workforce numbers for Aboriginal Health Workers (AHWs) and the need for GP surgeries to offer positions for local Aboriginal staff was raised. • Kalgoorlie closed their AMS unit for maternal health, removing a culturally appropriate service.

Outcomes of the service needs analysis		
SN 1.5 Lack of transition programs to support people moving from one service to another, 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 and also into the community after hospitalisation. Lack of integrated systems and processes support the hand-over and transfer of patient information may result in incomplete patient profiles, leading to frustration for both providers and patients, ultimately risking quality and continuity of care. General practice also plays a fundamental role in ensuring seamless transfer of care between hospital and primary care, and between GP and allied health services to support the management of complex, chronic, and comorbid conditions. Fragmented services in rural and remote areas often leave the patient feeling disconnected, and may result in hospital transfers out of region to receive care. In such cases, limited information may be provided back to the referring GP, leading to inconsistent care. **Whole of PHN** The Integrated Team Care (ITC) Program being delivered across Country WA PHN aims to improve health outcomes, specifically for Aboriginal people, through better access to coordinated and multidisciplinary care. An independent evaluation of the ITC program states that it has increased access to services that many clients may not have otherwise accessed, and support the client to navigate a complex system. The development of HealthPathways enables GPs to manage and refer their patients to the most appropriate local care. Over 330 localised HealthPathways have been developed in a variety of diagnostic categories across WA (November 2017); page views by GPs have tripled in 2 years, from 9,388 in November 205 to 21,615 (August 2017). Place-based Some examples of difficulties which arise due to the lack of integration and collaboration of services, especially for those travelling from country to access metropolitan services include: • Lack of communication between service providers, transport providers and accommodation providers. • Culture shock, isolation, lack of understanding, English is often a second language – best practice programs have a liaison officer/escort to assist. • A lack of communication between the tertiary and primary care sector across Country WA PHN. Discharge

Outcomes of the service needs analysis		
		summaries need to be improved in order to enhance person-centred care and the quality of transfer. • Lack of social services to assist with social issues, which would also improve health outcomes. "*There is no choice, it's not a holiday. We have to travel as we don't have the services here, so don't make us feel like a burden."*
SN 2.1 Lack of targeted early intervention in primary care across the PHN; lower than national target rates of cancer screening and childhood immunisation in several sub-regional areas	Targeted early intervention and / or secondary prevention in primary care could prevent the development of chronic conditions, comorbidities and avoidable death	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 immunisation is recommended as a safe and effective way of protecting against harmful diseases and reducing overall spread of disease. Jurisdictions are mandated to ensure childhood immunisation rates are at least 92-94% to achieve herd immunity, with a national aspirational target of 95%. **Whole of PHN** *Cancer Screening* Country WA PHN had lower participation in the national breast cancer and cervical cancer screening programs, 53.1% and 51.6% respectively, compared to the state rates of 56.6% and 55.8%. Rates were comparable for the bowel cancer screening program, at 42.8% and state at 42.9%. *Avoidable mortality by cancer* Rates of avoidable mortality of all cancers for Country WA PHN (27.0 per 100,000) are similar to state rates (26.8). *Immunisation* Country WA PHN has higher immunisation rates for children in all age groups (1 year, 2 years and 5 years) compared to State rates, as at June 2017: 93.8%, 90.9% and 92.5%, respectively. For Aboriginal children in the PHN, the 2-year age group was the lowest at 84.6% fully immunised, while 95.3% of the

Outcomes of the service needs analysis		
		5-year age group were fully immunised. *Potentially preventable hospitalisations for vaccine preventable conditions* Country WA PHN had the highest rates of vaccine preventable PPHs of the three PHNs in WA at 185 ASR per 100,000, which was below the national rate of 199. **Place-based** *Cancer Screening* The Pilbara and Goldfields have low cancer screening participation rates for all three national programs, the Kimberley has the lowest rates for bowel screening and Gascoyne has low rates for breast and cervical screening. • By SA2, the lowest rates of bowel screening in Country WA PHN are: Halls Creek, South Hedland , Derby – West Kimberley, Roebourne and East Pilbara. • By SA2, the lowest rates of breast screening in Country WA PHN are: East Pilbara, Halls Creek , Leinster – Leonora, Roebuck and Ashburton. *Avoidable mortality by cancer* Both Midwest SA3s (Midwest and Gascoyne) have the highest rates of avoidable death from all cancers, at 34.2 and 36.4 respectively. The Kimberley and Pilbara have the lowest rates of avoidable death (19.7 and 10.0 respectively), but have high rates in all other conditions, indicating residents may be more likely to die of other causes. *Immunisation* The Augusta - Margaret River – Busselton region has the lowest rates of immunisation across all three age groups (all less than 90%), along with Manjimup (2 years, 86.3%) and Albany (2 years, 89.5% and 5 years 87.2%). There are several regions with outstanding rates, above the herding immunity target (92-94%) and national target of 95%.

Outcomes of the service needs analysis		
		These are: Bunbury (5 years); Goldfields (1 year); Esperance (1 year); Kimberley (5 years); Gascoyne (1 and 5 years); and Wheatbelt – South (2 years). *Potentially preventable hospitalisations for vaccine preventable conditions* The Kimberley, by far, had the highest rates of vaccine preventable PPHs by place, at 850 ASR per 100,000, over four times the Country WA PHN rate. This is followed by Goldfields (476) and the Pilbara (263).
SN 2.2 Lack of access to and awareness of appropriate primary care services across Country WA 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.	After-hours primary medical care provided by GPs, community health centres, and co-located general practice (AHGP) clinics and telephone helplines can increase patient choice and help meet demand for those seeking after hours medical attention. 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* Country WA PHN residents utilised allied health services at a much lower rate (9.4 per 100 population) than the state (13.8) and national rates (22.8). GP attendance is also much lower in Country WA PHN, at 11.0 per 100 resident population, compared to state (32.1) and national rates (37.5). *Utilisation of GP after-hours services* The utilisation of GP after hours and emergency attendance MBS items is also much lower for Country WA PHN (11.6 per 100 resident population), compared to state (25.8) and national rates (41.3). *Non-urgent and after-hours ED attendances* Lack of knowledge and awareness regarding after hours services available across the PHN region, which results in some people presenting to emergency departments for treatment *(Refer to HN 4.2*).

Outcomes of the service needs analysis		
		Place-based *Utilisation of allied health and GP services* Several areas have no or very low utilisation of allied health MBS items: Esperance and Gascoyne (both 0.0 per 100 population), Kimberley (0.6), Pilbara (1.0) and Wheatbelt – South (2.2). GP attendance was lower in all areas when compared to state rates (32.1), with the lowest rates being: Pilbara (0.4), Gascoyne (3.5), Goldfields (3.9) and Manjimup (5.1). *Utilisation of GP after-hours services* MBS items for GP after-hours services by place had a wide range, from 0.0 in Wheatbelt – South to 52.5 in the Goldfields. Other areas of low utilisation were Esperance (0.1), Manjimup (0.2), Albany (1.1) and Wheatbelt – North (4.1). *Non-urgent and after-hours ED attendances* By place, Bunbury had the highest percentage of after-hours non-urgent ED attendances, followed by Albany. The lowest areas were Gascoyne and Manjimup . For Aboriginal patients, the highest usage after-hours was in Albany , followed by Bunbury and Wheatbelt – North . The Midwest region has a high use (and cost) of hospital services rather than effective use of primary and community care services. There needs to be a stronger message to community – ED is not your GP. There are issues with a lack of bulk-billing GPs in the Midwest which one exacerbate this matter. Stakeholder feedback highlighting the lack of access and awareness of primary care services: • There needs to be more education on MBS items and billings, which should increase utilisation.

Outcomes of the service needs analysis		
		• Patients largely reliant on visiting services or must travel significant distances to receive care. • No funding incentives to open after hours services. • Improved access to a GP in the after-hours period, particularly for phone orders for medicines, would assist staff to manage residents within the facility and avoid transfer and admission to ED and hospital. • South West - private hospital model, making access to public health services an issue, especially for inland areas. The Pilbara region is seeing higher utilisation of ED rather than primary care due to a range of factors including: 'frequent flyers'; corporate practices with higher fees and out of pocket expenses; a lack of after-hours services; and a lack of attracting and retaining staff.
SN 2.3 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	**Whole of PHN** Complex chronic conditions and those with multiple risk factors are experienced across Country WA PHN, as seen in HN 4.1. A lack of individual, holistic care can frequently lead to ED attendances and potentially preventable hospitalisations. **Place-based** The Kimberley region is faced with a large number of people who are multimorbid, where alcohol and other drugs as the single biggest issue. These complex, generational issues need a holistic approach before any health condition can be prioritised. Similar issues are faced in the Goldfields, with an introduction of a welfare card trial in the areas of Laverton, Leonora, Coolgardie and Kalgoorlie from early 2018, in an effort to minimise harm from alcohol. Primary care support services are essential to deliver a holistic approach. Further investigation is needed.
SN 2.4 Lack of best-practice management of chronic conditions in primary care	Poor management of patients with chronic conditions can lead to serious complications,	Appropriate and best-practice management of chronic conditions in primary care is important. There was a total of 29,601 hospitalisations relating to chronic conditions in Western Australia between in the last reporting year (2015-16) could have been avoided by more effective primary care. GP chronic disease management plans provide the

Outcomes of the service needs analysis		
across Country WA PHN. Low rates of GP chronic disease care plans and high rates of PPHs for chronic conditions in several sub-regions.	loss of quality of life, and increased burden on tertiary care through potentially preventable hospitalisations	structure for the multidisciplinary required for effective care, however it is estimated only one third of patients with chronic disease in Australia receive a GP management plan, with less than 20% of plans reviewed regularly. **Whole of PHN** *Utilisation of MBS GP health assessments and GP chronic disease services* Country WA PHN had slightly higher rates for both GP health assessments (5.1 per 100 population) and GP chronic disease (21.5) were both higher that state rates (4.0 and 19.7 respectively). *Potentially Preventable Hospitalisations (PPHs) for chronic conditions* PPHs for chronic disease in Country WA PHN (1,271 ASR per 100,000) was higher than both Perth North (1,003) and Perth South PHNs (1,124). *Acute hospital admissions related to chronic conditions* Drug, alcohol and mental health presentations are not represented in PPHs. Acute hospital admissions data indicates acute admissions are higher in Country WA PHN than both Perth North and Perth South PHNs. **Place-based** *Utilisation of MBS GP health assessments and GP chronic disease services* Highest utilisation of GP health assessments was in Kimberley (10.4 per 100) and Gascoyne (10.0), lowest for Esperance (1.0) and Manjimup (1.6). GP chronic disease service utilisation was wide ranging, from a low of 3.0 per 100 in Esperance, to a high of 44.4 in the Midwest, followed by Albany (30.9) and Wheatbelt – North (24.8). *Potentially Preventable Hospitalisations (PPHs) for chronic conditions*

Outcomes of the service needs analysis		
		Highest chronic PPHs by place were Kimberley (2,537 ASR per 100,000) and Goldfields (1,812). PPHs for COPD in the Pilbara are suggested to be exacerbated by environmental risk factors in the region, including the transportation of uncovered iron-ore. *Acute hospital admissions related to chronic conditions* There are high rates of acute hospitalisations for drug and alcohol in the Kimberley , more than double the Country WA PHN rate, followed by Esperance . Highest rates of mental health acute admissions for Albany , Kimberley and Wheatbelt – South.
SN3.1 Lack of affordable and accessible primary care services across Country WA PHN. Several sub-regions with higher proportion of adults facing healthcare barriers related to cost, transport and connectivity.	Inaccessibility and affordability of primary care services mean people with health care needs are not able to access the right care at the right time in the right place in order to effectively manage their health	Vulnerable and disadvantaged groups have poorer health outcomes and higher need for primary care services. However, these groups typically experience increased challenges in accessing care as appropriate and affordable services may not be readily available or accessible. The diversity in rurality, not only across Country WA PHN but within regions, present a challenge for health planning and services. **Whole of PHN** In the 2015-16 year, 13.5% of adults in Country WA PHN reported that they needed to see a GP but did not in the preceding 12 months, similar to the national rate of 14.1%. Those who did not see or delayed seeing a GP due to cost was 5.0%, more than the national rate of 4.1%; and those who delayed or avoided filling a prescription due to cost was 6.9% (national rate 7.6%). 30.3% of adults in Country WA PHN felt they waited longer than acceptable to get an appointment with a GP, higher than the national rate of 22.6%. Feedback from throughout the region indicates a lack of bulk-billing general practices, causing an increase in hospital presentations due to cost. *Barriers to accessing healthcare* Country WA PHN has slightly higher rates of adults who often have a difficulty or cannot get to places needed with transport, including housebound (4.3 ASR per 100) and adults who experienced a barrier to accessing healthcare with main reason being cost of service (1.7), compared to the state (4.0 and 1.5 respectively). These rates are not available for much of the region, including Goldfields, Kimberley, Gascoyne and the Pilbara, so it is estimated to be a large

Outcomes of the service needs analysis		
		underrepresentation. Further investigation in this area is needed. 5.1% of dwellings in Country WA PHN do not have a motor vehicle, which would limit access to services. The ITC evaluation states the inclusion of transport is critical to service and health outcomes. *Internet access* Country WA PHN has a higher rate of dwellings who do not access the internet at 17.7%, compared to the state rate of 12.5%. This impairs access to any web-based services. **Place-based** *Barriers to accessing healthcare* Of the data available, Albany and Bunbury have the highest rates of those who often have a difficulty or cannot get to places needed with transport, including housebound (both 4.4 ASR per 100), and Albany and Midwest for those who experienced a barrier to accessing healthcare with main reason being cost of service (both 1.9). Kimberley has the highest proportion of dwellings with no motor vehicle (10.6%). *Internet access* The Kimberley (25.0%) and Wheatbelt – South (22.4%) have the highest rates of dwellings who do not access the internet. Transport barriers to services remain an issue throughout Country WA, also heightened by a lack of outreach services in some areas. No or insufficient public transport has been identified by stakeholder feedback in the Gascoyne, Wheatbelt, South West (Outer Bunbury and Busselton) and Great Southern. Many of these areas with no or little public transport are also ineligible for the Patient Assisted Travel Scheme (PATS).

Outcomes of the service needs analysis		
SN 3.2. Patients 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. Further research is needed across Country WA PHN to identify how to support patients to navigate and access the appropriate care in an efficient and timely manner. **Whole of PHN** 77.6% of Country WA PHN adults reported seeing a GP within the last 12 months, the second lowest rate of all PHNs, the national rate was 81.9%. This lack of contact with a GP impacts on getting the right care, at the right place, at the right time, and could lead to an undiagnosed condition or an exacerbation of an existing condition. The GP is also there to assist with navigating the complex health system, and referring a patient to where is appropriate. Further investigation is needed.
SN 4.1 Lack of uptake and availability of digital health technologies including My Health Record	Digital technologies support the efficiency and effectiveness of the health system and can increase patient access to more primary care services	Digital health includes a broad range of innovative technologies for the purposes of providing care and sharing information to enhance patient outcomes. Telehealth can deliver health services and facilitate communication between specialists and patients, whilst electronic medical records such as the national 'My Health Record' can facilitate communication and coordinated care across multiple practitioners. However, the uptake of digital health technologies has been inconsistent across Western Australia, and has yet to be normalised as part of primary care practice. **Whole of PHN** *My Health Record by consumer location* There was a total of 81,400 My Health Record consumer registrations in Country WA PHN as of 19 October 2017 (14.8% of County WA PHN population), of which nearly a quarter had a Shared Health Summary (24%; 19,560). Consumer registrations in Country WA PHN increased by 46% in the 12 months from July 2016 to June 2017. *My Health Record by provider location* A total of 12,566 Shared Health Summary records had been uploaded by providers in Country WA PHN at this time,

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		accounting for 15.4% of My Health Record registrations in the area. Provider registrations increased by 39% in the 12 months from July 2016 to June 2017. *Telehealth* MBS utilisation for telehealth services were higher in Country WA PHN (0.3 per 100 population) than the state rate (0.1), and slightly less than the national rate (0.4). Many appointments made which require the travel of Country WA PHN patients are unnecessary and could be performed via telehealth. The aim of the 'Digital Readiness in Rural Community General Practice Project' is to identify the barriers and enables that are influential in enabling or discouraging the use of digital technology in rural general practice. This pilot project will survey general practitioners and general practice managers in the Goldfields, Wheatbelt and Pilbara to identify the key drivers of digital health to develop strategies to increase uptake in country regions. This project is currently underway with results expected mid-2018. **Place-based** *My Health Record by consumer location* While there are issues with the data quality, preliminary information suggests the highest volume of My Health Record consumer registrations in Bunbury (20,703), Albany (10,338) and Goldfields (8,703), with the highest proportion of consumers registered in Goldfields (20.5%), Kimberley (18.4%) and Albany (17.4%). Highest volume and proportion of registrations with Shared Health Summary records also in these locations. Lowest rates of consumer registrations (8.7%) and registrations in Gascoyne with Shared Health Summary records (6.4%), with low rates of consumer registrations also in Pilbara (11.6%) and Midwest (12.5%). *My Health Record by provider location* The highest volume of Shared Health Summary uploads was observed in Kimberley (2,294) and Goldfields (2,067), with highest proportion of provider uploads of Shared Health Summary records in Esperance (44.0%), Augusta-

Outcomes of the service needs analysis		
		Margaret River-Busselton (35.8%) and Kimberley (32.3%). Low rates of provider uploads of Shared Health Summary records in Gascoyne by volume and proportion (21, 2.5%), followed by Wheatbelt-South (6.7%) and Wheatbelt-North (7.1%). *Telehealth* MBS utilisation for telehealth services was highest in the Midwest (0.9 per 100 population), three times greater than any other area. Qualitative feedback indicates a lack of utilisation of telehealth in the Goldfields due to long-wait times for specialists. **Qualitative** Community awareness about My Health Record is reportedly low across Country WA PHN, with no public campaign or publicity. The opt-out model is aimed to improve the uptake for consumers, with continued work with providers to increase utilisation. Qualitative feedback indicates poor communication between primary care providers and specialists in relation to care coordination, which could be improved by utilisation of eHealth records and telehealth services. The Southern Inland Health Initiative (SIHI) is the largest investment into rural health in WA with aims to increase the use of telehealth and to address serious limitations to health services in the region. This includes investment in service, safety, workforce, clinical information system, infrastructure, technology and models of care issues in the five southern inland regions of Country WA (South West, Great Southern, Wheatbelt, Midwest and Goldfields). Funding for SIHI has changed since June 30 2017, with some components ceasing.
SN 4.2 Lack of evidence outcomes of primary care services across Country WA 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	**Whole of PHN** There is a strong need to support established programs to adopt a more outcomes based focus, rather than develop new programs. Service continuity and trust relationships can be supported throughout this process to ensure Aboriginal communities do not lose services. Organisations should be supported to reorient to outcomes based methodology, as has occurred with the WA Footprints to Better Health Strategy 2014-2018. Service providers are

Outcomes of the service needs analysis		
	guide data capture	supportive of delivering services that have a strong evaluation component. **Place-based** 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 a better integration of the health care system.

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