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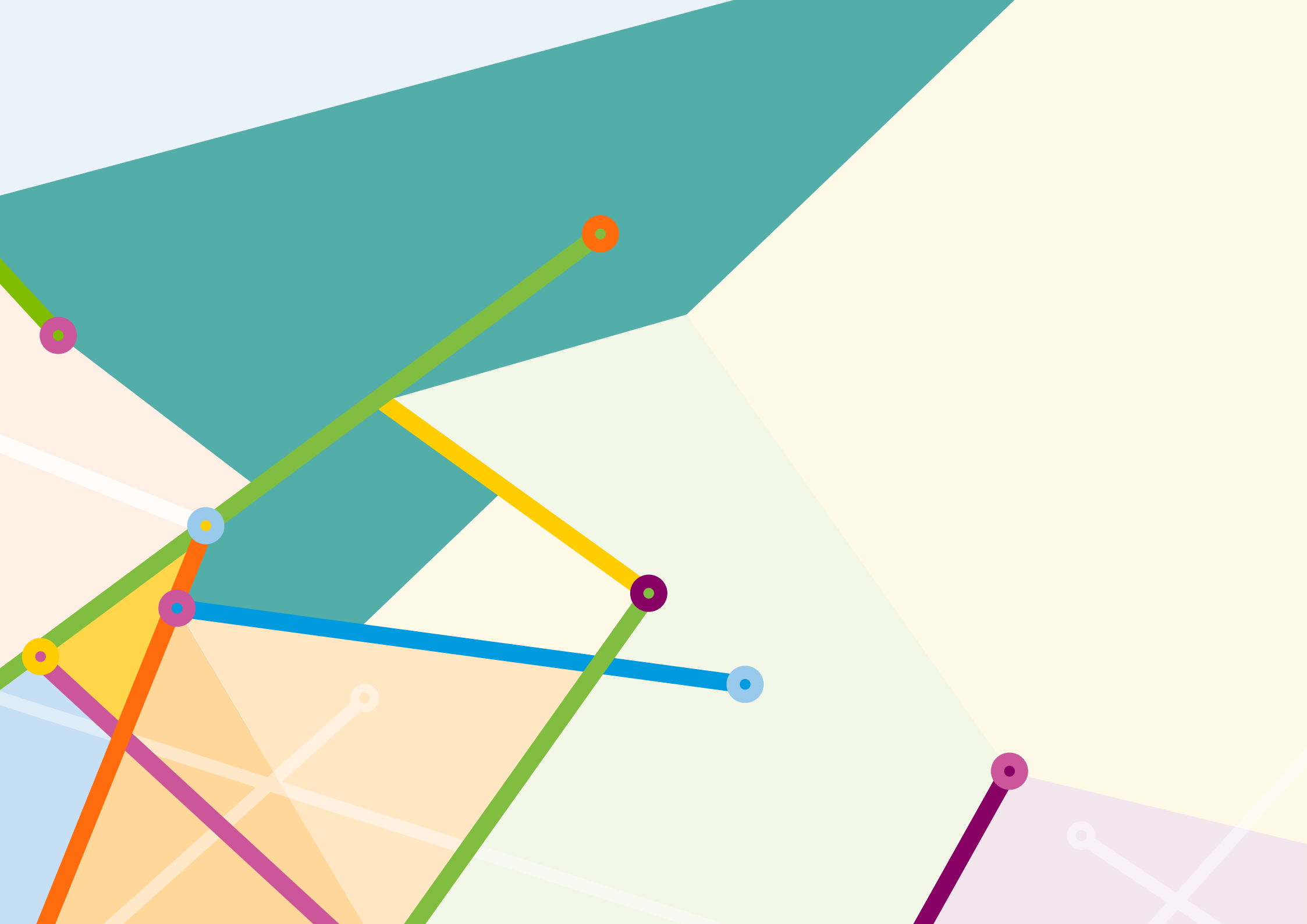
PERTH NORTH, PERTH SOUTH, COUNTRY WA
An Australian Government Initiative

Country WA PHN

Needs Assessment 2022-2024



Contents

Introduction

The Country WA Primary Health Network (PHN) covers approximately 2.5 million square kilometres and encompasses seven regions:

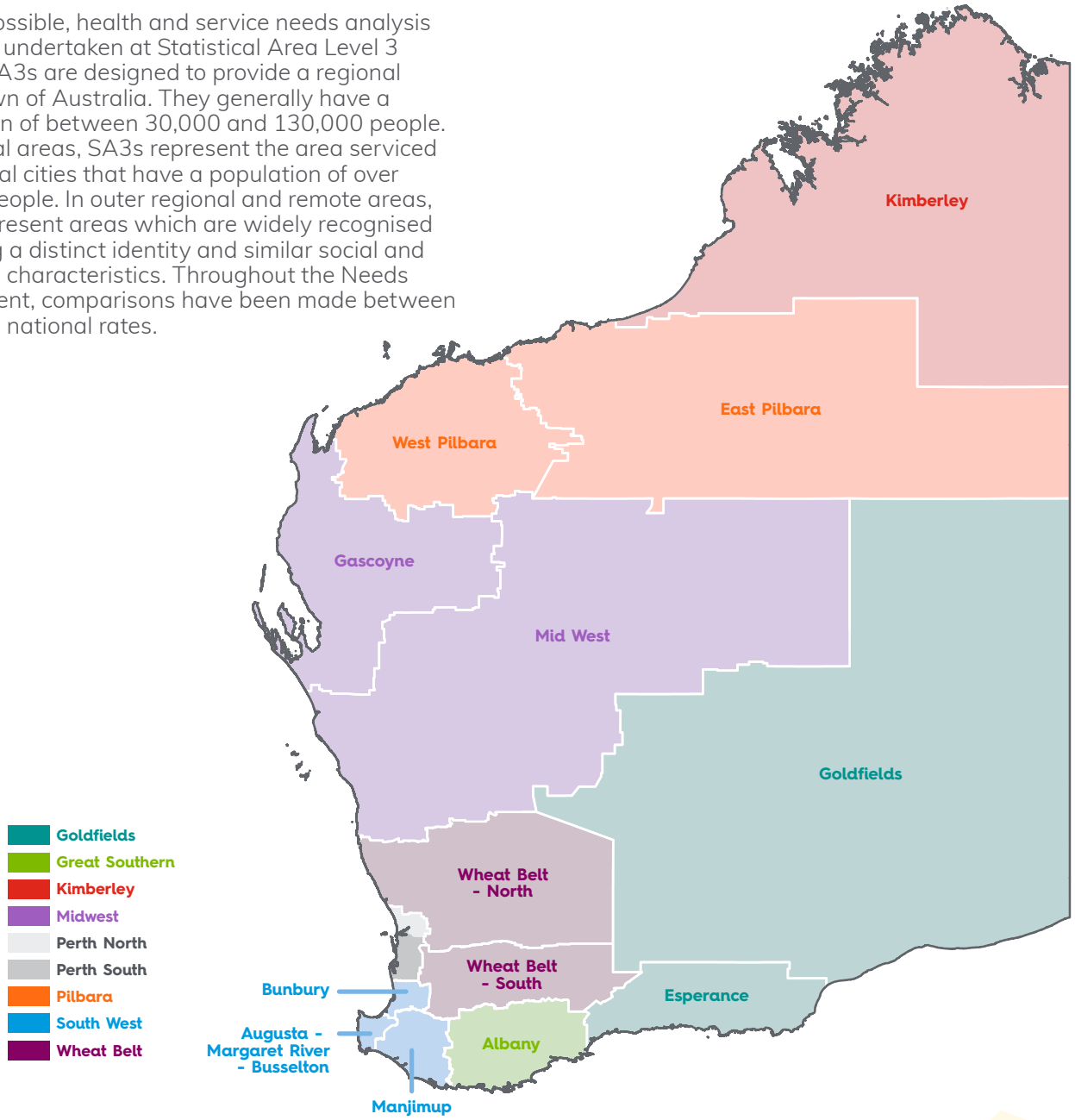
- Goldfields-Esperance
- Great Southern
- Kimberley
- Midwest
- Pilbara
- South West
- Wheatbelt.

Each region is uniquely characterised and consequently, experiences different health needs and service availability. When compared to the metropolitan PHNs, Perth North and Perth South, Country WA PHN's rurality is largely responsible for poor health and service characteristics. With such a large geographical spread, and unique and diverse populations, collecting datasets large enough for statistical analyses and that capture all population characteristics is challenging.

The development of the Country WA PHN Needs Assessment 2022-2024 was governed by the Needs Assessment Steering Committee. A consultation plan was developed and included internal and external consultation processes to source qualitative data. This included the development of a digital portal for the collection of qualitative information from regional and metropolitan clinical committees. A wide range of data sources, available publicly or on request from data custodians informed the Needs Assessment. Where possible data was tested for statistical significance ($p<0.05$), note that when the word "significant" is used throughout the document it means "statistically significant".

This Needs Assessment has been updated with population and chronic condition data from the 2021 Australian Census of Population and Housing released in 2022.

Where possible, health and service needs analysis has been undertaken at Statistical Area Level 3 (SA3s). SA3s are designed to provide a regional breakdown of Australia. They generally have a population of between 30,000 and 130,000 people. In regional areas, SA3s represent the area serviced by regional cities that have a population of over 20,000 people. In outer regional and remote areas, SA3s represent areas which are widely recognised as having a distinct identity and similar social and economic characteristics. Throughout the Needs Assessment, comparisons have been made between state and national rates.



Priority Setting

A priority selection matrix was used to triangulate information about health and service needs and qualitative information provided by stakeholders. The matrix used a scoring system from 1 to 3 to determine the severity of identified needs and if the need is a priority for the Primary Health Network. The matrix was reviewed by the Needs Assessment Steering Committee and included an extensive internal review process.

In undertaking the priority setting methodology, key themes, and issues for the seven regions were identified. One of the dominant themes identified through both data analysis and consultation was the impact of workforce shortages on primary care utilization. The provision of healthcare across Country WA PHN represents significant challenges. Stakeholders have indicated staff retention and the cost of travelling vast distances to provide clinical services as barriers to the provision of primary care in rural and regional WA. The COVID-19 pandemic has only compounded access to health workforce and primary care in Country WA PHN.

Consumer Views on Access to General Practice

To better understand how people experiencing social and economic disadvantage access General Practice the WA Primary Health Alliance funded a consumer research survey in 2021.

The research revealed that most people experiencing disadvantage are still able to access a General Practitioner when needed. Although 31 per cent of respondents encountered barriers when visiting a GP, 92 per cent of health consumers experiencing disadvantage had visited a GP in the last year.

The most common reason to visit a GP was to get a prescription with over half (53%) the cohort visiting a GP for this reason, followed by managing a chronic condition (28%) and general check-up (25%).

Accessibility factors such as appointment availability were the most cited barrier to accessing a GP, followed by transportation issues and conflicting commitments. Women, people with young children, young people, CALD, people living with a disability and Aboriginal people were most likely to experience barriers.

Cost did not appear to play a large role in limiting access to a GP, with only 1 in 10 mentioning it as a barrier. This finding is attributed to over 80% of the survey cohort indicating that their GP service was bulk billed. If the availability of bulk billed appointments decreased this would seriously impact access to a GP for people experiencing social and economic disadvantage.

The benefit of having a regular GP to the quality of a patient's experience was clear. Respondents with a regular GP reported finding it significantly easier to visit their GP and were significantly more likely to have had a positive experience, even compared to those with a regular GP practice, but not a regular GP.

Additional Data Needs and Gaps

COVID-19

All topics covered were informed by a broad review of publicly available data sets, data obtained from selected Western Australian government agencies, a review of the research literature, as well as internal and external consultation. A key issue in the development of the Country WA PHN Needs Assessment has been the reliance on publicly available datasets. The statistics included in these datasets are not current and are two to three years old. As a result, these datasets cannot be used to provide an analysis of the substantial impact that the COVID-19 pandemic has had on the health system in WA.

Mental Health

Issues with accessing current suicide statistics have been a barrier to planning and implementing mental health services in Country WA PHN. Access to current suicide statistics is delayed by two to three years pending coronial inquest and submission of state suicide statistics to national data repositories.

Use of Long-Term Health Condition Data from the 2021 Census

The inclusion of a question about long-term health conditions in the 2021 Census now provides an additional data source for many of the conditions that PHNs seek to address. We note this is the first time this information has been collected and as such it should be interpreted with caution. All data sources have inherent biases and will result in a different estimate of prevalence depending on the method employed. In the case of the Census, the method is a household rather than an individual survey, which may result in under-reporting due to privacy concerns or a lack of knowledge of the respondent on behalf of other household residents. Additionally, the Census long-term health conditions question asks whether the respondent has been told by a doctor or a nurse that they have a particular condition, which requires the respondent to have accessed a health service and received a diagnosis. Within this document, we have chosen to use the Census prevalence estimates in favour of other data sources in most instances. Exceptions to this are mental health, where we have chosen to also cite the WA Health and Wellbeing Surveillance System estimates and dementia, where we have chosen to use estimates provided by the AIHW. In these two instances, we believe the methodology of these alternative data sources would better capture these conditions, but provide the ABS data as well, for completeness, as they are also included in the ABS non-specific long-term condition and aggregate condition counts, we have cited. The choice of data sources is never clear cut and ultimately it must be acknowledged that all data sets will produce different results and are subject to limitations which must be considered when interpreting results.

Estimating Dementia Prevalence

In Australia, there is no single authoritative data source for deriving dementia prevalence. In the absence of an authoritative data source the Australian Institute of Health and Welfare have calculated synthetic dementia estimates based on a review of international dementia prevalence literature. We note that the 2021 Census included dementia as a selected long term health condition, however, we believe that the AIHW methodology provides a more accurate estimate of dementia prevalence in Australia. For instance, the AIHW methodology estimates that 386,200 people are living with dementia in Australia in 2021 while the Census results showed that 189,162 people living in Australia self-reported a dementia diagnosis. The Census is a household survey and it is unknown how individuals living with dementia supported at home or in a Residential Aged Care Facility were included in the Census on Census night. Acknowledging the limitations of different methodologies and their results gives us a better understanding of the complexities of estimating disease prevalence. Given the wide range of dementia prevalence estimates reported, the AIHW acknowledges that improvements in dementia data collection are needed to truly understand the number of people living with dementia in Australia.

The impact of COVID-19

Due to a reliance on publicly available datasets the Country WA PHN Needs Assessments 2022-2024 does not provide a detailed analysis of the impact of COVID-19 pandemic on the health system in WA. In 2020, the WA Primary Health Alliance published a Needs Assessment on the impact of the COVID-19 pandemic and natural disaster on primary care in WA. Topics covered in the report were informed by a review of the research and grey literature, as well as internal and external consultation. The report is available here.

Compared to other Australian jurisdictions the State of Western Australia has not experienced a significant outbreak of COVID-19. However, the pandemic has still had a substantial impact on the provision of primary care in Country WA PHN.

In Country WA, many regions are reliant on a fly-in-fly-out health workforce. Travel restrictions and mandatory self-isolation of health workforce has impacted supply and reduced workforce capacity in rural and regional WA. The COVID-19 pandemic has restricted the supply of interstate and overseas-trained doctors who might otherwise have filled GP vacancies and hospital locum positions in Country WA. Across Country WA PHN, restrictions on interstate clinicians have resulted in a shortage of doctors, nurses, and a range of clinical staff in private general practices as well as the WA Country Health Service and Aboriginal Medical Services. There is concern that the health workforce is overburdened with high patient loads and clinicians are experiencing stress and fatigue.

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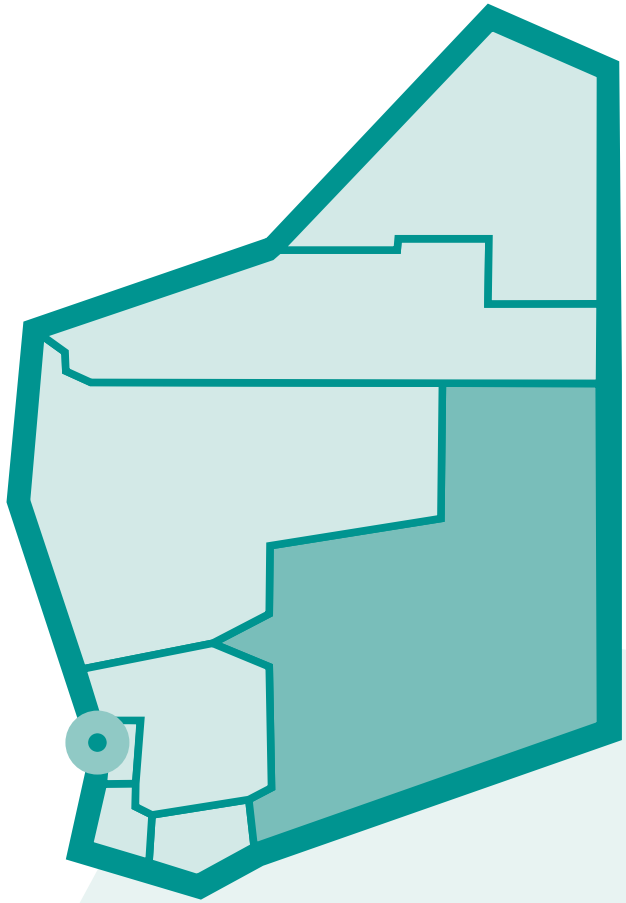
Goldfields-Esperance

Needs Assessment 2022-2024

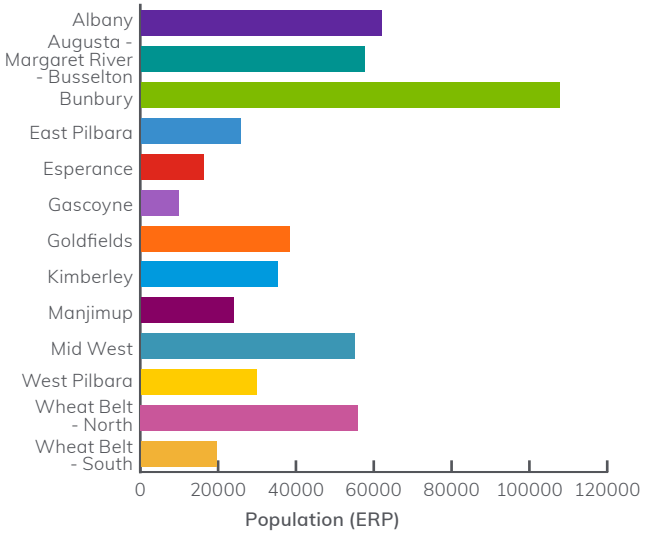


Goldfields-Esperance

Population Demographics

The Goldfields-Esperance region spans 771,276 square kilometres and consists of two ABS Statistical Area Level Three sub-regions: Goldfields SA3 and Esperance SA3 (note that the health region boundary does not include the Shire of Wiluna). Goldfields SA3 includes the towns of Kalgoorlie-Boulder, Leonora, Leinster, Laverton, Menzies, Coolgardie, Kambalda, Norseman, and the Ngaanyatjarraku Shire and borders both South Australia and the Northern Territory. Esperance SA3 includes the towns of Esperance, Ravensthorpe, and Hopetoun.

Figure 1 - Population (URP 2021) in Country WA PHN by SA3



In 2021, the population of Country WA PHN was 529,933 people compared to the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). There are 38,267 people

Cardiovascular disease is the leading cause of disease burden

39% of adults aged 16+ years are **obese**

22% of adults aged 16+ years have **high blood pressure**

3RD **Mental ill-health** is the third leading cause of disease burden

4% of the population in Goldfields SA3 and 3% in Esperance SA3 accessed a GP **mental health treatment plan**

Less than **1%** of the population accessed a **clinical psychologist** through Medicare

8.4% of people in Goldfields SA3 and **18%** in Esperance SA3 are aged **65 years and over**

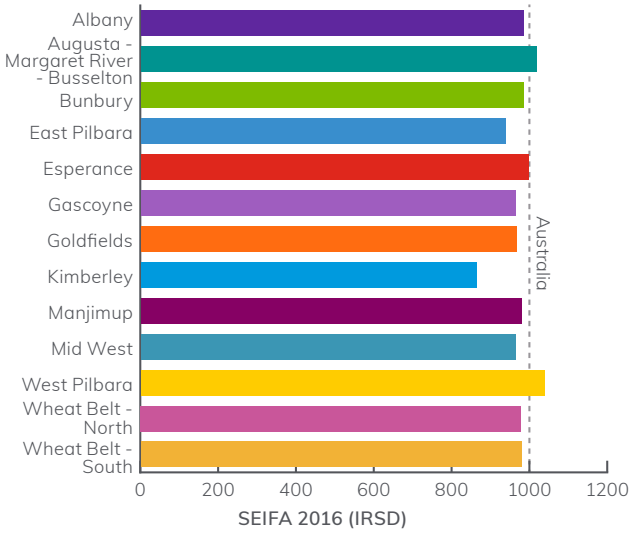
Coronary heart disease, COPD and **dementia** are among the leading causes of disease burden for people aged 65 and over

There are an estimated **7249 Aboriginal people** residing in the region

24% of Aboriginal people in Goldfields SA3 and **15%** in Esperance SA3 received an **Indigenous-specific health check** through Medicare in 2019-20

living in Goldfields SA3 and 15,970 people in Esperance SA3. Goldfields SA3 has a higher level of socioeconomic disadvantage (IRSD=964) compared to Esperance SA3 (IRSD=997) (Public Health Information Development Unit, 2021b). About 11.5% of people in Goldfields SA3 identify as Aboriginal and Torres Strait Islander (Aboriginal)[1] compared to only 4.3% in Esperance SA3 (Public Health Information Development Unit, 2022).

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



1 Throughout this document the word Aboriginal is used to denote both Aboriginal and Torres Strait Islander peoples.

Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.5% of people in Goldfields SA3 (192 people) and 0.2% of people in Esperance SA3 (28 people) were born overseas and have poor English proficiency compared to 1.8% of people across the state (44,521 people) (Public Health Information Development Unit, 2022).
- About 3.1% of people in Goldfields SA3 and 4.3% of people in Esperance SA3 have a profound or severe disability compared to 4.6% across the state (Australian Bureau of Statistics, 2021a).
- About 10% of people in Goldfields SA3 and 7.0% of people in Esperance SA3 provide unpaid assistance to people with a disability compared to 11% across the state (Public Health Information Development Unit, 2022).
- About 22% of children in Goldfields SA3 and 15% of children in Esperance SA3 were developmentally vulnerable on one or more domains compared to 19% across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 44 people in Esperance SA3 and 479 people in Goldfields SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 16% of homeless people in Esperance SA3 and 63% in Goldfields SA3 were living in 'severely' crowded' dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic

obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition. In the Goldfields - Esperance region, cardiovascular disease was the leading cause of total disease burden, followed by cancer.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Goldfields.

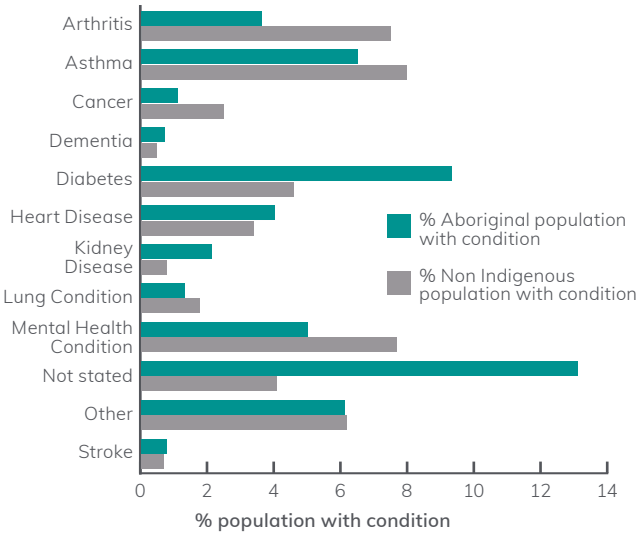
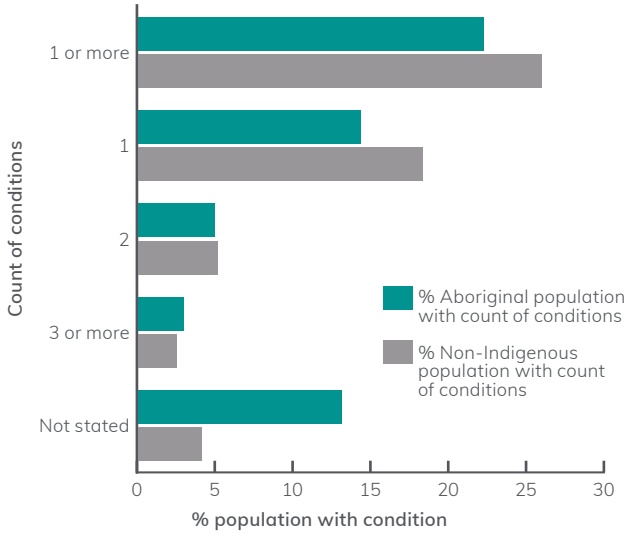


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Goldfields.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). The Goldfields - Esperance region had prevalence rates of risk factors that were significantly higher than state rates, especially in Goldfields SA3. In 2017-18, children aged 2-17 years in Goldfields SA3 were significantly more likely to be obese (ASR=11%) compared to the state (ASR=7.9%) (Public Health Information Development Unit, 2021b). Moreover, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that estimated prevalence rates of obesity among adults aged 16 years and over were significantly higher at 41% in Goldfields SA3 and 37% in Esperance SA3 compared to 30% across the state (Epidemiology Branch, 2021a). The region also had significantly higher rates of high blood pressure (23% in Esperance SA3 and 21% in Goldfields SA3) and Goldfields SA3 had a significantly higher rate of current smokers (18%) as well as people who do no leisure time physical activity (24%) (Epidemiology Branch, 2021a).

Feedback from local stakeholders suggests that the high burden of disease from cancer may be related in part to exposure to farming chemicals, particularly in Esperance.

General Practice Incentives Program Quality Improvement Incentive (PIP QI)

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with their weight classification recorded within the last 12 months, the proportion of patients with information available to calculate risk of cardiovascular disease (CVD), and the proportion of patients with diabetes that have a HbA1c measurement recorded. PIP QI data indicated the following for Goldfields SA3 (seven practices) and Esperance SA3 (five practices) compared to the state (497 practices).

- The percentage of general practice records for clients aged 15 years and over that did not have a weight classification recorded within the last 12 months was 73% in Goldfields SA3 and 68% in Esperance SA3 compared to 76% across the state.
- The percentage of general practice records for clients aged between 45-74 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 39% in Goldfields SA3 and 37% in Esperance SA3 compared to 43% across the state.
- The percentage of general practice records for

clients with a diagnosis of diabetes that did not have a HbA1c measurement result recorded within the last 12 months was 34% in Goldfields SA3 and 22% in Esperance SA3 compared to 28% across the state.

We note that PIP QI data include private general practices only and do not include GP services provided by non-government organisations.

Healthy Weight Action Plan

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

The Goldfields Healthy Weight Action Workshops were delivered in November 2020 and provided an opportunity for local stakeholders to contribute to the discussion and collaborative ideas for change. The following were some key discussion themes from the workshops.

- Connect better by improving collaboration, coordination, communication and sharing of information on the early intervention and management of excess weight gain between all service and support agency stakeholders and consumers across the region.
- Better access and care coordination by collaborating across the region to define clear service pathways, eligibility, and processes to improve access and make every healthy weight contact count.
- Change how we talk about weight, to improve the language, approach and positive talk related to overweight and obesity amongst community members, health professionals and service providers.
- Innovation to explore a culture of experimentation regarding collaborative funding, provision, and sustainability of healthy weight related initiatives in the region.

Local Government Public Health Plan

The Shire of Esperance Public Health Plan 2021-2016 (Shire of Esperance, 2021) aims to inform and empower people to make positive health choices which enhance their physical and mental wellbeing by promoting healthier options and advocating against adverse behaviours. Key actions include making educational material available on the Shire's **website**; enhancing outdoor public fitness equipment; supporting community markets and other food security and sustainability initiatives; and partnering with local, state, and federal health promotion bodies and campaigns to facilitate and help promote physical exercise and active living. We note that Local Government Public Health Plans are due by 2024 and the remaining nine Shires within the Goldfields – Esperance region are yet to complete their plans.

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Goldfields - Esperance region had a 1.4 times higher rate of fatal burden and a 1.1 times higher rate of non-fatal burden compared to the metropolitan regions. Chronic disease accounted for a substantial proportion of the burden of disease. The Goldfields – Esperance region had the second highest cardiovascular burden in the state (after the Kimberley), accounting for 17% of the total burden in the region. Coronary heart disease (7% of burden for females and 14% for males) and COPD (5.5% of burden for females and 4.9% for males) were among the leading five causes of burden, back pain/problems were the third leading cause for females (6% of burden), while lung cancer was the fifth leading cause for males (3.7% of burden).

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). Age-adjusted prevalence rates in Goldfields and Esperance SA3s respectively were 16% and 18% for one long-term condition and 8.2% and 7.9% for two or more conditions. Compared to the state, Goldfields SA3 had relatively high rates of diabetes (ASR=5.8% compared to 4.5%) and kidney disease (ASR=1.3% compared to 0.8%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

Across the state in 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1109 and the highest rates were for COPD (232), congestive cardiac failure (220), and iron deficiency anaemia (188) (Australian Institute of Health and Welfare, 2019). Compared to the state, Goldfields SA3 had a much higher rate for total chronic conditions (1940), as well as the top three conditions: COPD (468), congestive cardiac failure (423), and iron deficiency anaemia (268). On the other hand, Esperance SA3 had a lower rate for total chronic conditions (1014) including COPD (222) and congestive cardiac failure (170); however, the rate for iron deficiency anaemia was relatively high (208).

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, there were three population health areas (PHAs) in the region that were hotspots for chronic conditions, as follows. Of these, Kalgoorlie PHA had the highest number of hospitalisations for total chronic conditions in the region and was a hotspot for six chronic conditions.

- Kalgoorlie PHA: total chronic conditions, angina, congestive cardiac failure, COPD, diabetes complications, iron deficiencies, and rheumatic heart diseases.
- Boulder/Kambalda – Coolgardie – Norseman PHA: total chronic conditions, congestive cardiac failure, and diabetes complications.
- Leinster – Leonora PHA: asthma, bronchiectasis, and rheumatic heart diseases.

Management of chronic disease in primary care

From 2018-19 to 2020-21, percentage of population utilisation of GP chronic disease management plans (CDMPs) increased from 9.1% to 12% in Goldfields SA3 and was consistent with the national rate for SA3s in remote areas. The rate for Esperance SA3 did not change substantially, from 6.2% to 5.9% (Australian Institute of Health and Welfare, 2021d).

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years. About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years (Department of Health, 2021b).

In the Goldfields – Esperance region, Esperance SA3 met immunisation targets for children at 2 years and 5 years; however, rates for children at 1 year were slightly below target (93.7%). Immunisation rates for Goldfields SA3 were lower than Esperance SA3 and were below target for children at 1 year (93.1%) and 2 years (90.5%).

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicated that compared to the state, cancer screening participation rates were low in Goldfields SA3, particularly for breast cancer. Participation rates were 31% in Goldfields SA3 and 49% in Esperance SA3 for bowel cancer screening, 31% in Goldfields SA3 and 61% in Esperance SA3 for breast cancer screening, and 35% in Goldfields SA3 and 43% in Esperance SA3 for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was 68 years in Goldfields SA3 (50% of people who died were younger than 68 years) and 78 years in Esperance SA3 compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, age-standardised death rates per 100,000 from avoidable causes in Esperance SA3 (163) and Goldfields SA3 (217) were significantly high compared to the state (122) (Public Health Information Development Unit, 2021b). Esperance SA3 had a significantly high rate of avoidable deaths from circulatory system diseases (54) and ischaemic heart disease (41), while Goldfields SA3 had significantly high rates for all selected conditions with age-standardised rates per 100,000 as follows: diabetes (17), respiratory system diseases (17), COPD (17), circulatory system diseases (75), cerebrovascular (16), and ischaemic heart disease (53).

Utilisation of primary care services

The COVID-19 pandemic impacted the utilisation of primary care services across the state. Between 2018-19 and 2020-21, the percentage of the population who had visited a GP in the last year decreased from 80% to 76% in Goldfields SA3, but remained stable at 82% in Esperance SA3, above the national rate for SA3s in remote areas (73%) (Australian Institute of Health and Welfare, 2021d).

The percentage utilising after-hours GP services decreased substantially in both SA3s, from 27% to 20% in Goldfields SA3 and from 4.4% to 2.5% in Esperance SA3, well below the national rate for remote areas (8.2%). Utilisation of GP health

assessments increased from 5.8% to 7.0% in Goldfields SA3 and remained stable in Esperance SA3 at 2.0% compared to 10% nationally for remote areas. We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region.

Utilisation of Medicare-subsidised allied health services in the region was comparable to or above national rates for SA3s in remote areas. In 2020-21, about 28% of the population in Goldfields SA3 and 27% in Esperance SA3 utilised allied health services compared to 26% in remote areas nationally (Australian Institute of Health and Welfare, 2021d). About 24% of the population in both SA3s utilised optometry (22% in remote areas nationally). We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations.

Utilisation of nurses and Aboriginal health workers increased from 6.3% to 8.5% in Goldfields SA3 and from 4.1% to 5.1% in Esperance SA3 between 2018-19 and 2020-21, but was well below the national rate for remote areas (14%) (Australian Institute of Health and Welfare, 2021d).

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. Across the Goldfields - Esperance region, access to bulk billing GPs relative to need was low. Esperance Region SA2 and Esperance SA2 (Esperance SA3) and Kambalda – Coolgardie – Norseman SA2 (Goldfields SA3) were in the first decile (access relative to need was lower than 90% of SA2s in the state) for access to bulk billing GPs. In terms of access to any GP, Kambalda – Coolgardie - Norseman SA2 and Leinster – Leonora SA2 (Goldfields SA3) and Esperance Region SA2 (Esperance SA3) were in the second decile.

Workforce

General practitioners (GPs)

In 2020, Goldfields SA3 had 34 GP full-time equivalent (FTE) or 0.9 FTE per 1000 residents and Esperance SA3 had 13 GP FTE or 0.8 FTE per 1000 residents compared to 1.1 FTE per 1000 across the state[2]. The ratio of vocationally registered (VR) to non-VR GPs was very high in Esperance SA3 (35) compared to the state (12), in contrast to Goldfields SA3 (1.6), which had the lowest ratio in WA.

Primary care nurses

The Goldfields – Esperance region had a relatively high supply of primary care nurses compared to the state. In 2019, Goldfields SA3 had 97 primary care nurse full-time equivalent (FTE) or 2.5 FTE per 1000 residents and Esperance SA3 had 33 FTE or 2.1 FTE per 1000 residents compared to 1.7 FTE per 1000 across the state2. On average, primary care nurses in Goldfields SA3 worked the longest hours in WA, with an average of 41 hours per week compared to 30 hours per week across the state.

2 Commonwealth Department of Health HeaDS UPP Tool, PHN Needs Assessment WPP, extracted 10/09/2021

Aged Care

In 2021, there were 3,511 people aged 65 years and over in Goldfields SA3 and 3,059 in Esperance SA3 representing 9.2% and 19% of the population, respectively compared to 16% across the state (Australian Bureau of Statistics, 2021a).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Goldfields health region, coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 29% of people aged 65 years and over across the Goldfields region had one long term health condition (including both physical and mental health conditions) and 25% had two or more co-morbid conditions compared to 31% and 26% across the state, respectively. The most common types of conditions among older adults in the region were arthritis (25%), heart disease (14%), and diabetes (15%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The *Dementia in Australia 2022* report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Goldfields region, there were 492 people with

dementia, with the highest number in Esperance SA2 (208) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level.

Medicare items are available for in-depth assessment of a patient 75 years and over. This provides a structured way of identifying health issues and conditions that are potentially preventable or amenable to interventions to improve health and quality of life. Data for participating practices demonstrated a wide range of uptake of over 75 health assessments, with 16% of older people in Esperance participating practices (5) recording this, but only 9% in Goldfields participating practices (7). These are both below the Country WA PHN average of 21%, representing an opportunity to improve care for older people. We note that these data include private general practices only and do not include GP services provided by non-government organisations.

Aged care services

The aged care system in Australia offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. Across Australia, more than two-thirds of people using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021).

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

Home care in Esperance is provided by the local Shire while home care in the Goldfields is provided by religious, charitable, and community-based organizations. As December 2020, there were 100 people in a HCP in the Goldfields Aged Care Planning Region (ACPR) (Department of Health, 2021a). Additionally, there were 85 people waiting for a HCP at their approved level that had yet to be offered a lower-level HCP with 23 people (27%) requiring the highest level of care (level 4).

Despite a relatively large elderly population, Esperance SA3 had a low residential (RACF) beds-to-population ratio with only two residential aged care facilities located in the region. The number of residential beds to 1000 people aged 70 years and over was 50 in Esperance SA3 compared 97 in the Goldfields SA3 to 63 in Country WA PHN and 72 across the state (Australian Institute of Health and Welfare, 2021b). Additionally, Goldfields SA3 had seven residential aged care facilities.

In 2019, Esperance SA3 had a relatively low supply of nurses working in aged care, with 15 full-time equivalent (FTE) or 7.3 FTE per 1000 people aged 70 years and over compared to 12 FTE per 1000 across the state2. Goldfields SA3 had a higher supply, with 33 FTE or 18 FTE per 1000 people aged 70 years and over.

Alcohol and Other Drugs

Alcohol and other drug use

Stakeholders have indicated that harmful alcohol and other drug use is an issue in the Goldfields. In Country WA, 31.1% of residents in the Goldfields and 21.4% in Esperance SA3s were at risk of long-term harm from alcohol use (Epidemiology Branch, 2021b). Although these rates exceeded the state rate (26.5%), they were not statistically significantly higher than WA rate (Epidemiology Branch, 2021b). Goldfields SA3 had the third greatest proportion of current smokers (17.9%) whereas in the Esperance SA3 11.1% of the population are current smokers (Epidemiology Branch, 2021b).

Some of the key findings of the Esperance Wellbeing Survey, the report for Esperance AODHRG, LifeSPAN, and the MHC in November 2019 included (Shire of Esperance, 2021):

- One-quarter to one-third of respondents are consuming alcohol at unsafe levels. A greater proportion of respondents aged under 50 were classified as unsafe drinkers.
- The majority of respondents agreed alcohol is a problem worrying the community.
- Respondents perceive the results of drinking too much alcohol, taking illegal drugs causes harm, damage, and health problems within the community.

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with a smoking status and proportion of patients with an alcohol consumption status. The proportion of GP patient records which did not have smoking status recorded was 34% in Goldfields SA3 across seven practices and 33% in Esperance SA3 across five practices compared to 37% across the state. Goldfields SA3 had a higher percentage

of GP patient records that did not have an alcohol consumption status recorded (53%) compared with Esperance (38%) as well as the state (46%). We note that these data include only private general practices and do not include health services provided by non-government organisations.

Impact of alcohol and drug use

During 2011-2015, there were 1.30 times the number of alcohol-attributable hospitalisations in Esperance compared with WA. During the same period, the rate of alcohol-attributed hospitalisations in Goldfields was 1.4 times the State rate (WA Country Health Service, 2018). For illicit drugs attributable hospitalisations, Esperance was 1.34 times higher than the WA rate (Shire of Esperance, 2021).

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018 of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. In 2014-2018 Goldfields and Esperance SA3s had the second highest rate range of 7.5 to 9.9 deaths per 100,000 for unintentional drug-induced deaths (Penington Institute, 2020).

Emergency department presentations

Country regions had higher rates of emergency department (ED) presentations related to alcohol and other drugs (AOD) compared to the state. Between 2018 and 2020, around 1.1% of ED presentations across the region were AOD-related (Department of Health Western Australia, 2021a). About two-thirds of AOD presentations (66%) were made after hours. Presentation rates per 100k population per year in Goldfields SA3 (978) were much higher than in Esperance SA3 (354) and were more than 2.5 times the state rate (369). We note that some ED presentations may be related to alcohol and other drugs but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of AOD-related ED presentations in the region.

Services

Drug and Alcohol services are provided by the WA Country Health Service and non-government organisations in the Goldfields-Esperance regions. The Goldfields Alcohol and other Drug service is based in Kalgoorlie-Boulder and Esperance and provides outreach to surrounding communities, the Goldfields Rehabilitation Services Inc based in Kalgoorlie-Boulder provides residential services and counselling, Hope Community Services provide counselling and coordination services and the Ngangganawili Aboriginal Health Service provide counselling and referral services in Wiluna.

Mental Health

Mental health was the third leading cause of disease burden in the Goldfields-Esperance region contributing 15% to the total disease burden for the region (Department of Health Western Australia, 2021). Women in the Goldfields-Esperance were impacted by depressive disorders while suicide and self-inflicted injuries contributed to the disease burden for men (Australian Institute of Health and Welfare, 2020a).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

Rates of diagnosed anxiety among adults aged 16 years and over were 9.0% in both Esperance and Goldfields SA3s, while rates of depression were 9.1% in Esperance SA3 and 7.4% in Goldfields SA3. These rates were not statistically significantly higher than WA rates (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 7.6% and 8.9% in Esperance SA3 and 6.3% and 7.4% in Goldfields SA3 (Public Health Information Development Unit, 2022)).

Rates of high or very high psychological distress were 8.6% in both SA3s and were similar to the state rate (8.8%).

In recent years, FIFO workers have been the focus of community and political concern in Kalgoorlie – Boulder and the Northern Goldfields with reports in the media related to the impact of FIFO work, mental health and suicide (Parker & Fruhen, 2018). The mining industry in the Goldfields region, particularly in the more remote regions around Laverton, Leonora and Wiluna, has created a working population that includes a large number of FIFO and temporary contract workers (Australian Bureau of Statistics, 2003). A 2018 survey of 3,000 FIFO workers found one third experienced high or very high levels of psychological distress (Parker & Fruhen, 2018).

Suicide and self-harm

Forty-six people died from suicide in the Goldfields between 2014 to 2018 representing 5% of all deaths in the region (Australian Institute of Health and Welfare, 2020c). In Esperance, 12 people died from suicide between 2014 and 2018 representing 2% of all deaths (Australian Institute of Health and Welfare, 2020c). In WA, suicide represents 2% of all deaths.

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. Survey participates are asked if they thought seriously about ending their own lives. In Goldfields SA3, 7.1% of the population thought seriously about ending their own lives. This was 8.9% in Esperance (Epidemiology Branch, 2021b). Neither rate was statistically significantly above the state rate of 5.5%.

Self-harm is a strong risk factor for suicide. Hospitalisations for self-harm in the Goldfields (300 per 100,000 residents) were above state rates at 224 per 100,000 residents (Australian Institute of Health and Welfare, 2020c). Self-harm hospitalisations were highest for females and for people aged 25 – 44 years (Australian Institute of Health and Welfare, 2020c). Self-harm hospitalisation data is suppressed for the Esperance SA3.

Youth mental health

Suicide and self-inflicted injuries were the leading cause of disease burden for 15 to 24-year-olds, contributing to 20% of the disease burden for this age group (Epidemiology Branch, 2021b).

Hospital admissions for self-harm may also indicate a lack of access to mental health services. In the Goldfields people aged between 0-24 years were hospitalised for self-harm at a higher rate than the State and the PHN (Australian Institute of Health and Welfare, 2020c).

Services

Mental health services in the Goldfields-Esperance region are provided by the WA Country Health Service and not for profit organisations. The WA Country Health Service provides adult community mental health services and inpatient mental health services in Kalgoorlie-Boulder and an adult community mental health and a child and adolescent mental health services in Esperance and Kalgoorlie-Boulder. headspace provides psychological services for youth in Kalgoorlie-Boulder and a satellite in Esperance. Centrecare provides counselling services in Kalgoorlie-Boulder, Coolgardie, Kambalda, Esperance, Norseman, Ravensthorpe, Leonora, and Wiluna. Suicide Prevention Networks in Kalgoorlie-Boulder and Esperance aim to reduce stigma and prevent suicide through education and conversation. The Goldfields-Esperance region also has access to the National Indigenous Critical Response service that provides support to individuals and families after a traumatic event. Bega Garnbirringu is one of nine Aboriginal Community-controlled organisations across WA to receive a contract to build early suicide identification and intervention skills in the Goldfields. A new community liaison officer based in Kalgoorlie-Boulder will work to reduce rates of suicide. The new role is part of the WA Suicide Prevention Framework.

A GP mental health treatment plan can be used to refer patients to psychiatrists, psychologists, counsellors, social workers and occupational therapists. The COVID-19 pandemic increased utilisation of mental health services across the state. In 2020-21 in Goldfields SA3, 6.0% of the population accessed a GP mental health treatment plan, up from 4.3% in 2018-19 (Australian Institute of Health and Welfare, 2021d). In Esperance SA3, 4.4% accessed aGP mental health treatment plan, compared to 3.9% in 2018-19. This was lower than the proportion for Country WA (7.1%) (Australian Institute of Health and Welfare, 2021d).

In both the Goldfields and Esperance regions less than 1% of the population accessed a clinical psychologist through the Better Access MBS program (Australian Institute of Health and Welfare, 2020c). These figures indicate insufficient access to rebated psychology services in the Goldfields and Esperance regions and a reliance on services provided by the WA Country Health Service and the not-for-profit sector. Stakeholders have also identified a shortage of mental health professionals in the Goldfields-Esperance regions.

Aboriginal Health

In 2021, there were 5,081 Aboriginal people living in the Goldfields – Esperance region (Australian Bureau of Statistics, 2021a). The Goldfields Aboriginal community is diverse with 14 to 16 distinct language groups and 19 remote communities (Goldfields Aboriginal Language Centre, 2021). Communities include the Wankatja/Wangkatha people of Kalgoorlie-Boulder, Leonora and Laverton, the Ngadju people of Coolgardie, Norsemen and Esperance, the Martu people of Wiluna, the Tjuntjuntjara Spinifex People of the Great Victoria Desert region and the people of the Ngaanyatjarra lands adjoining the Northern Territory and South Australian borders. (Australian Bureau of Statistics, 2016)

Aboriginal populations are dispersed throughout the nine Local Government Shires that comprise Goldfields-Esperance. In the Ngaanyatjarra Lands, Aboriginal people comprise 54.9% of the population dispersed across ten communities (Warburton, Warakurna, Jameson, Blackstone, Wingellina, Patjarr, Wanarn, Tjirrkarli, Tjukurla, Kanpa). In the Shire of Wiluna, Aboriginal people comprise 26.4% of the population and in the Northern Goldfields; Laverton (48%), Leonora & Menzies (12.6%), Kalgoorlie–Boulder (7.9%), Esperance (4.3%) Dundas (9.6%), Ravensthorpe (4.3%) .

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question “Has the person been told by a doctor or nurse that they have any of these long-term health conditions?”.

In the Goldfields, more Aboriginal people reported having the following conditions compared to non-Aboriginal people:

- 9.3% of Aboriginal people reported having Diabetes compared to 4.6% of non-Aboriginal people.
- 4% of Aboriginal people reported having Heart Disease compared to 3.4% of non- Aboriginal people.
- 2.1% of Aboriginal people reported having Kidney Disease compared to 0.8% of non-Aboriginal people.

In the Goldfields, 728 (14.3%) Aboriginal persons responded as having 1 Chronic condition, 251 (4.9%) have two Chronic conditions, while 149 (2.9%) have three or more Chronic conditions, 3285 (64.7%) have no Chronic condition, while 666 (13.1%) didn't respond to the question (Australian Bureau of Statistics, 2021a).

The Aboriginal people in the Goldfields region experience some of the highest levels of socioeconomic disadvantage and are impacted by poor health outcomes. The highest levels of disadvantage have been observed in Wiluna, Laverton and Ngaanyatjarraku Shire regions (Warburton etc.) (Public Health Information Development Unit, 2021a).

Unemployment is significantly higher in the towns of Warburton and Wiluna, with an estimated 50% of Aboriginal residents without work. This is followed by the Laverton and Ngaanyatjarraku Shire population outside Warburton, with almost 40% of residents unemployed. Warburton and Wiluna also experience poor housing sustainability, with 50% of households requiring extra bedrooms to accommodate resident (Public Health Information Development Unit, 2021a).

In the Laverton and Ngaanyatjarraku shire region only 42.9% of adolescents were attending secondary school and only 51.2% of adolescents participate in secondary education in Kalgoorlie-Boulder (Public Health Information Development Unit, 2021a).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. PIP QI data indicated that the proportion of general practice records for Indigenous clients aged between 35-44 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 56% in Goldfields SA3 (seven practices) and 65% and 61% in Esperance SA3 (five practices) compared to 62% across the state (497 practices). We note that these data include only private general practices and do not include health services provided by non-government organisations. The percentage of GP patient records with Aboriginal status not recorded was 12% in Esperance SA3 and 11% in Goldfields SA3 compared to 33% across the state.

Child immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In Kalgoorlie and Boulder, childhood immunisation rates below target for children aged 2 years. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services (Public Health Information Development Unit, 2021a). Country WA PHN had a greater rate of total non-urgent ED presentations (ASR=10,742 per 100,000 people per year) in Aboriginal and Torres Strait Islander people compared to WA (7,742). In Country WA, top major diagnosis chapters included factors influencing health status (3,626 ASR per 100,000) and injury and poisoning (ASR=2,763 per 100,000). Non-urgent ED presentations recorded between 2017/18 were statistically significantly higher than WA for:

- Diagnosis chapters factors influencing health status and contact with health services: Laverton-Ngaanyatjarraku, Kalgoorlie-Boulder, Kalgoorlie – Dundas – Goldfields.
- Injury, poisoning and certain other consequences of external causes: Laverton-Ngaanyatjarraku.

Avoidable deaths by selected causes

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significant in the following regions (ASR per 100,000 Aboriginal persons):

- Circulatory system diseases: Menzies-Leonora (188 per 100,000), Warburton (186) and Laverton-Ngaanyatjarraku (182).
- Diabetes: Kalgoorlie-Boulder (86 per 100,000, Laverton-Ngaanyatjarraku (63).
- Selected external causes (falls, fires, burns, suicide, and self-inflicted injuries): Kalgoorlie-Boulder (60 per 100,00).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 rates of the following PPHs were statistically significantly elevated in the IAREs of the Goldfields-Esperance region (Public Health Information Development Unit, 2020).

PPHs for chronic conditions:

- Chronic angina: Kalgoorlie-Dundas-Goldfields (758 per 100,000) and Kalgoorlie-Boulder (365)
- Asthma: Menzies – Leonora (751 per 100,000) and Laverton-Ngaanyatjarraku (447)
- Congestive cardiac failure: Kalgoorlie-Boulder (1,269 per 100,000) and Kalgoorlie- Dundas – Goldfields (1,019)

- Diabetes: Kalgoorlie-Dundas-Goldfields (1,037 per 100,000) and Kalgoorlie-Boulder (1,036)
- Iron deficiency anaemia: Kalgoorlie-Boulder (440 per 100,000)
- COPD: Kalgoorlie-Dundas-Goldfields (1,068 per 100,000).

PPHs for acute conditions were (Public Health Information Development Unit, 2020):

- Acute cellulitis: Wiluna (2,026 per 100,000), Kalgoorlie-Dundas-Goldfields (1,402) and Menzies – Leonora (1,199)
- Acute convulsions and epilepsy: Kalgoorlie-Dundas-Goldfields (1,091) and Kalgoorlie-Boulder (839)
- Acute ear, nose, and throat infections: Wiluna (1,340 per 100,000), Laverton-Ngaanyatjarraku (1,006) and Kalgoorlie-Boulder (870)
- Acute urinary tract infections (including pyelonephritis): Wiluna (1,198), and Kalgoorlie-Dundas-Goldfields (940).

PPHs for vaccine-preventable conditions:

- Pneumonia and influenza: Menzies – Leonora (492 per 100,000), Kalgoorlie-Dundas-Goldfields (402), Kalgoorlie-Boulder (305)
- Other: Laverton-Ngaanyatjarraku (2,371 per 100,000), Menzies – Leonora (2,271) and Warburton (2,015).

NOTE: Vaccine-preventable (other) includes diseases such as hepatitis B, measles, mumps, and chicken pox (Public Health Information Development Unit, 2020).

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Aboriginal and Torres Strait Islander people can access specific services aimed at Closing the Gap in health outcomes. It is important that General Practices ask all patients if they identify as Aboriginal and/or Torres Strait Islander. This assists with ensuring patients are provided with the option of accessing information and services specifically designed to meet their needs.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c). In 2019-20, the proportion of Aboriginal population who received an Indigenous Health Check was 14.7% in Esperance and 23.8% in Goldfields SA3s compared to 25.1% in Country WA PHN. Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.5% in Goldfields and 0.6% across the state. These rates are not publishable for Esperance because of small numbers, confidentiality, or other concerns about the quality of the data. Goldfields (63.6%) had a higher utilisation of Indigenous Health Check patients who received follow-up services compared to State (46.8%), while Esperance (36.6%) had a lower rate (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Services

Aboriginal people living in the Goldfields-Esperance region can access primary care services through general practice, Aboriginal Community Controlled Health Services, Health Centres, and the hospital sector. There are four Aboriginal Medical Services in the Goldfields region located in Kalgoorlie-Boulder, Wiluna, Ngaanyatjarra Lands and the Tjuntjuntjara-Spinifex Lands community.

The Bega Garnbirringu Health service is based in the centre of Kalgoorlie-Boulder. Medical services are provided not only to those clients who reside within the limits of the city itself but also to local and outlying communities by means of regular Outreach clinics. These are operated from two Mobile Clinics. Bega also operates a mobile clinic to the Northern Goldfields, Coolgardie, Dunus and Esperance Shires.

Ngangganawili Aboriginal Health Service Community is a community controlled Aboriginal corporation providing affordable and culturally appropriate health services to the Aboriginal and wider population of Wiluna and surrounding areas.

The Ngaanyatjarra Health Service has nine clinics operating within Ngaanyatjarra Lands. Community based health staff provide primary health care at community health clinics. This is delivered through a multidisciplinary approach incorporating Primary Health Care, Public Health Programs and Health Promotion Activities.

Spinifex Health Service is the name for an Aboriginal Community Controlled Health Service managed by Paupiyala Tjarutja Aboriginal Corporation (PTAC) in the remote community of Tjuntjuntjara on the Spinifex Lands. Spinifex Health Service is located 680 km northeast of Kalgoorlie-Boulder, in the Great Victoria Desert region of Western Australia.

Digital Health

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. In 2018, every Australian established a ‘My Health

Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

Pre-COVID (2018-19) rates of MBS utilisation of telehealth were very low across Australia, at 0.21 per 100 people. However, Country WA and Esperance in particular appear to have been early adopters of telehealth, at 0.42 and 1.41 per 100 people. Temporary COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The Goldfields-Esperance region has a diverse Aboriginal community with many distinct language groups and remote communities. The pertinent health concerns in the region are mental health, chronic disease, alcohol and other drugs and access to workforce and services.

Workforce and access to services is a continuing issue for all rural communities and Goldfields-Esperance is similarly impacted. The region has low access to bulk billing GPs relative to need, limited access to allied health professionals and a shortage of mental health professionals.

The Goldfields-Esperance region had a high rate of suicide contributing to 5% of all deaths in the region. Mental ill-health was the third leading cause of disease burden in the region but less than 1% of the population accessed a clinical psychologist through the Better Access MBS program.

The population in Goldfields-Esperance had significantly high prevalence rates of risk factors for chronic disease, particularly high blood pressure and obesity. Moreover, the region had the second highest cardiovascular burden in the state together with a low utilisation of GP chronic disease management plans (CDMPs).

Esperance had a large and growing ageing population but had a low residential (RACF) beds-to-population ratio with only two residential aged care facilities located in the region.

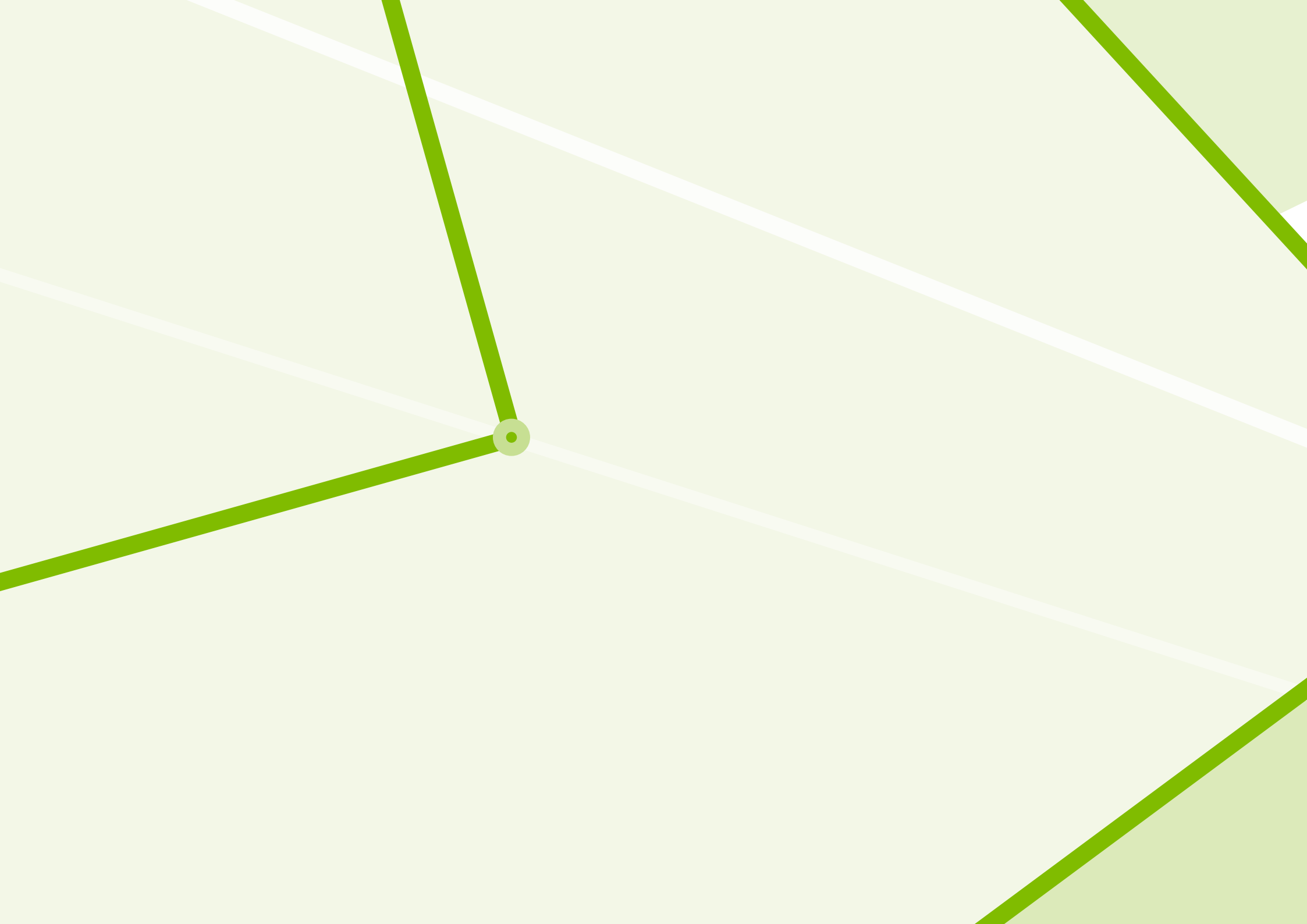
Residents experiencing long-term harm from alcohol use, smoking and illicit drugs, unintentional drug-induced deaths and ED presentations related to AOD were concerning. Aboriginal people in the Goldfields region experience some of the highest levels of socioeconomic disadvantage, non-urgent ED presentations, unemployment, poor housing suitability and adolescents who were not attending secondary school.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
The Goldfields-Esperance region had a high rate of suicide contributing to 5% of all deaths in the region. Mental health was the third leading cause of disease burden in the region.	Access to primary mental health services is limited in the Goldfields-Esperance Region with less than 1% of the population accessing a clinical psychologist through MBS services.	Increase access to mental health services and suicide prevention activities.	Mental Health	Access
The population in Goldfields-Esperance had significantly high-risk factors for chronic disease particularly high blood pressure and obesity.	Improve screening for chronic disease risk factors.	Support primary care to promote healthy weight and healthy lifestyle changes.	Population Health	Chronic conditions
The second highest cardiovascular burden in the state.	low utilization of GP chronic disease management plans (CDMPs) and PPHs hotspots for congestive heart failure.	Improve the self-management of heart disease especially chronic heart failure in Primary care.	Population Health	Chronic conditions
The Goldfields SA3 had a significantly higher rate of diabetes compared to the State.	There are PPH hotspots for diabetes complications in the Goldfields SA3.	Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	Population Health	Chronic conditions
Residents are at risk from long-term harm from alcohol use, smoking and illicit drug use.	ED presentations related to AOD were above state rates.	Improve access to screening and AOD treatment services	Alcohol and other drugs	Access
Aboriginal people living in the Goldfields-Esperance region have some of the poorest health outcomes in the state.	Aboriginal people in the Goldfields-Esperance region have high rates of PPH presentations and non-urgent ED presentations.	Improve access to coordinated culturally appropriate primary care for Aboriginal people.	Aboriginal and Torres Strait Islander Health	Appropriate care (including cultural safety)
The Goldfields-Esperance has a growing ageing population. People aged 65 years and over are more likely to have complex and/or chronic conditions.	The Goldfields-Esperance Region has limited access to aged care services particularly in home care services.	Promote healthy ageing at home and reduce early entry into residential care.	Aged Care	Early intervention and prevention.

Opportunities and options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Increase access to mental health services and suicide prevention activities.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals. MH4 Formalised partnerships with other regional service providers to support integrated regional planning and service delivery.	Non-Government Organisations Community Mental Health Services General Practice
Support primary care to promote healthy weight and healthy lifestyle changes.	P4 Support provided to general practices and other health care providers.	General Practice Allied Health Service Providers
Improve the self-management of heart disease especially chronic heart failure in Primary care.	P2 Health system improvement and innovation	General Practice Local Hospital Networks The Heart Foundation
Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P4 PHN delivers a range of support activities to general practices and other health care providers.	General Practice Allied Health Providers
Improve access to screening and AOD treatment services	AOD1 Rate of drug and alcohol commissioned providers actively delivering services.	General Practice Mental Health Commission WANADA
Improve access to coordinated culturally appropriate primary care for Aboriginal people.	IH5 ITC improves the cultural competency of mainstream primary health care services.	Aboriginal Medical Services Local Hospital Network Aboriginal Non-Government Organisations
Promote healthy ageing at home and reduce early entry into residential care.	AC2 Increase in the rate of people aged 75 years and over with a GP health assessment.	General Practice Aged Care Organizations Local Hospital Networks Local Governments



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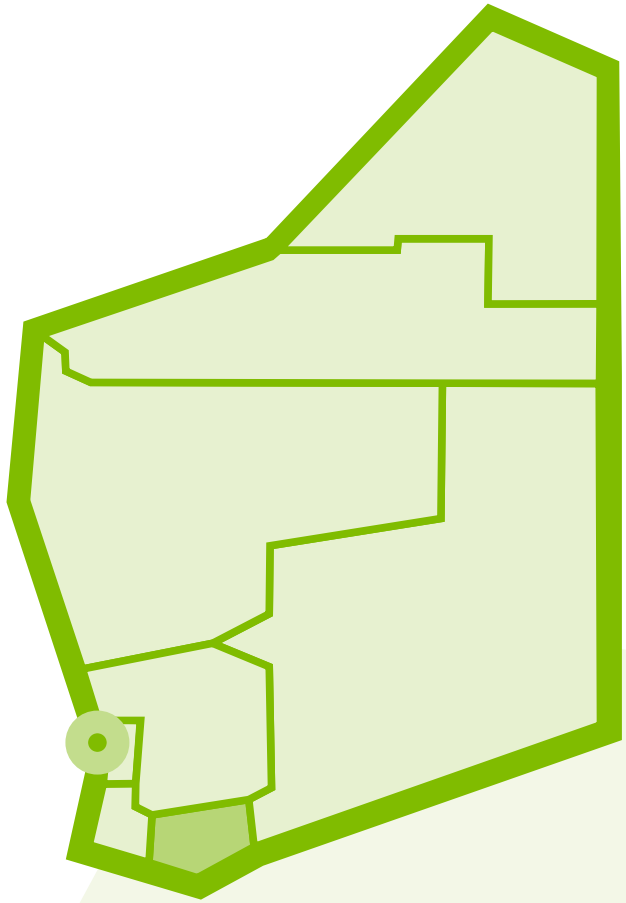
An Australian Government Initiative

Great Southern

Needs Assessment 2022-2024



Great Southern

Population Demographics

The Great Southern region is located on the south coast of Western Australia and is bounded by the South West region on the west and the Wheatbelt region to the north. The total land area of 39,007 square kilometres and represents about 1.5% of the total area of Western Australia.

In 2021, the population of Country WA PHN was 529,933 people compared to the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). There are 61,880 people living in the Great Southern region, made up of Albany SA3.

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

1ST

Mental ill-health is the leading cause of disease burden

7% of the population accessed a GP **mental health treatment plan**

Less than **1%** of the population accessed a **clinical psychologist** through Medicare

36% of adults aged 16+ years are **obese**

20% of adults aged 16+ years have **high blood pressure**

22% of adults aged 16+ years do **no leisure time physical activity**

21% of people are **aged 65 years and over**

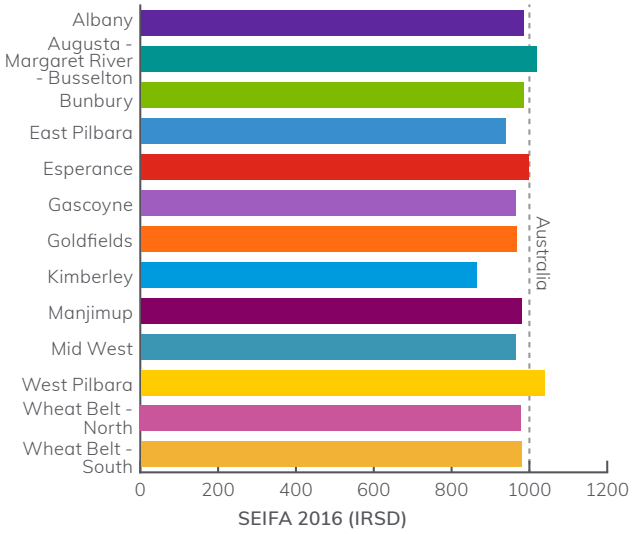
Coronary heart disease, COPD and **dementia** are among the leading causes of disease burden for people aged 65 and over

There are an estimated **2853 Aboriginal people** residing in the region

28% of Aboriginal people received an **Indigenous-specific health check** through Medicare in 2019-20

The region is relatively socioeconomically disadvantaged compared to the rest of WA, with a SEIFA score of 983, against WA's overall score of 1,016 (Public Health Information Development Unit, 2021b). About 4.0% of the population is Aboriginal (Public Health Information Development Unit, 2022).

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.8% of people in Albany SA3 were born overseas and have poor English proficiency (445 people) compared to 1.8% of people across the state (44,521 people) (Public Health Information Development Unit, 2022).
- About 5.9% of people in Albany SA3 have a profound or severe disability compared to 4.6% of people across the state (Australian Bureau of Statistics, 2021a).
- About 13% of people in Albany SA3 provide unpaid assistance to people with a disability compared to 11% of people across the state (Public Health Information Development Unit, 2022).
- About 23% of children in Albany SA3 were developmentally vulnerable on one or more domains compared to 19% of children across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 148 people in Albany SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 32% of homeless people were living in 'severely' crowded' dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b).

Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition. Feedback from local stakeholders indicated that the large elderly population in the Great Southern has resulted in an increased demand for chronic disease services and that integration between aged care, palliative care and chronic conditions was a priority in the region.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Great Southern.

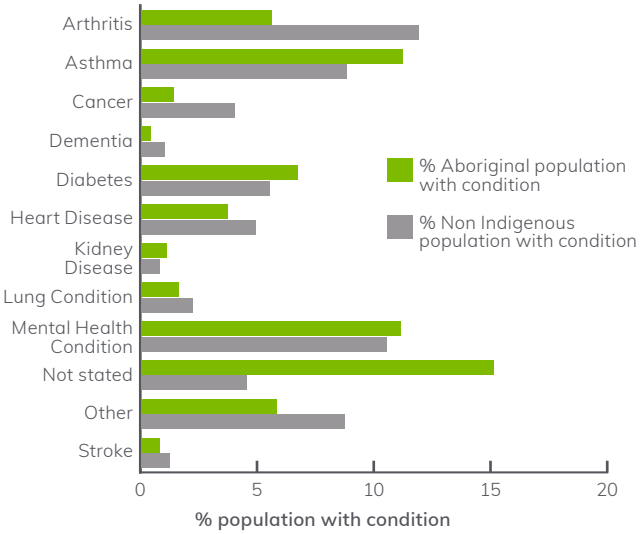
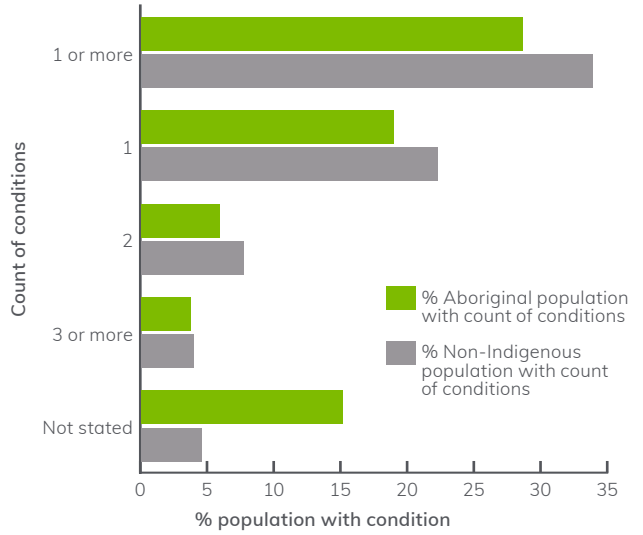


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Great Southern.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). The Great Southern region had prevalence rates of risk factors that were significantly higher than state rates. In 2017-18, children aged 2-17 years in Albany SA3 were significantly more likely to be obese (ASR=11%) compared to the state (ASR=7.9%) (Public Health Information Development Unit, 2021b). Moreover, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that estimated prevalence rates of obesity among adults aged 16 years and over were significantly higher at 36% in Albany SA3 compared to 30% across the state (Epidemiology Branch, 2021a). The region also had higher rates of high blood pressure (20%) and people who do no leisure time physical activity (22%).

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

General Practice Incentives Program Quality Improvement Incentive (PIP QI)

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with their weight classification recorded within the last 12 months, the proportion of patients with information available to calculate risk of cardiovascular disease (CVD), and the proportion of patients with diabetes that have a HbA1c measurement recorded. PIP QI data indicated the following for Albany SA3 (12 practices) compared to the state (497 practices).

- The percentage of general practice records for clients aged 15 years and over that did not have a weight classification recorded within the last 12 months was 80% in Albany SA3 compared to 76% across the state.
- The percentage of general practice records for clients aged between 45-74 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 56% in Albany SA3 compared to 43% across the state.
- The percentage of general practice records for clients with a diagnosis of diabetes that did not have a HbA1c measurement result recorded within the last 12 months was 41% in Albany SA3 compared to 28% across the state.

We note that PIP QI data include private general practices only and do not include GP services provided by non-government organisations.

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal

burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Great Southern region had a 1.3 times higher rate of fatal and non-fatal burden compared to the metropolitan regions. Chronic disease accounted for a substantial proportion of the burden of disease. Coronary heart disease and COPD were among the leading five causes of burden for both males and females and back pain/problems were the fifth leading cause for females. For people aged 45-64 years, chronic liver disease was the third leading cause of disease burden.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the Great Southern region, age-adjusted prevalence rates were 20% for one long-term condition and 9.1% for two or more conditions. Compared to the state, the Great Southern had relatively high rates of asthma (ASR=8.4% compared to 7.4%) and arthritis (ASR=9.0% compared to 7.9%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

Across the state in 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1109 and the highest rates were for COPD (232), congestive cardiac failure (220), and iron deficiency anaemia (188) (Australian Institute of Health and Welfare, 2019). Compared to the state, Albany SA3 had a similar rate for total chronic conditions (1114).

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, Katanning Population Health Area (PHA) was a hotspot for total chronic conditions as well as for asthma and hypertension.

Management of chronic disease in primary care

In 2020-21, percentage-of-population utilisation of GP chronic disease management plans (CDMPs) was 16% in Albany SA3 and was comparable to the national rate for SA3s in outer regional areas (Australian Institute of Health and Welfare, 2021d).

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years (Department of Health, 2021b). About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years.

In the Great Southern region, childhood immunisation rates in Albany SA3 were below target, especially for children at 2 years. About 94.5% of children were fully immunised at 1 year, 90.2% at 2 years, and 94.2% at 5 years. The lower rate at 2 years suggests that interventions should be targeted to increase immunisation coverage for this age group.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicated that cancer screening participation rates in Albany SA3 were at or above state rates: 51% for bowel cancer screening, 58% for breast cancer screening, and 48% for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was 81 years in Albany SA3 (50% of people who died were younger than 81 years) compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, the age-standardised death rate per 100,000 from all avoidable causes in Albany SA3 (128) was not significantly higher than the state rate (122) (Public Health Information Development Unit, 2021b). Death rates for selected causes were also not significantly different from state rates.

Utilisation of primary care services

The COVID-19 pandemic impacted the utilisation of primary care services across the state. Between

2018-19 and 2020-21, the proportion of the population visiting a GP decreased from 88% to 86% of the population in Albany SA3 (consistent with the national rate for SA3s in outer regional areas) (Australian Institute of Health and Welfare, 2021d).

The percentage utilising after-hours GP services increased from 3.4% in 2018-19 to 4.3% in 2020-21 but was still well below the national rate for outer regional areas (11%). The utilisation rate of GP health assessments (5.4%) was slightly below the national rate for outer regional areas (6.2%) (Australian Institute of Health and Welfare, 2021d). We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region.

About 37% of the population in Albany SA3 utilised Medicare-subsidised allied health services and 30% of the population utilised optometry (Australian Institute of Health and Welfare, 2021d). We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations.

Utilisation of nurses and Aboriginal health workers in Albany SA3 remained constant at 12%, above the national rate of 10% for outer regional areas (Australian Institute of Health and Welfare, 2021d).

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. Within the Great Southern region, Kojonup SA2, Plantagenet SA2 and Denmark SA2 in Albany SA3 were in the second decile (access relative to need was lower than 80% of SA2s in the state) for access to bulk-billing GPs, while Kojonup SA2 and Plantagenet SA2 were in the third decile for access to any GP.

Workforce

General practitioners (GPs)

In 2020, Albany SA3 had 62 GP full-time equivalent (FTE) or 1.0 FTE per 1000 residents compared to 1.1 FTE per 1000 across the state2. The ratio of vocationally registered (VR) to non-VR GPs (41) was the highest in Country WA PHN and was well above the state ratio (12).

Primary care nurses

In 2019, Albany SA3 had a relatively high supply of primary care nurses, with 134 full-time equivalent (FTE) or 2.2 FTE per 1000 residents compared to 1.7 FTE per 1000 across the state[2].

Feedback from local stakeholders indicated that the COVID-19 pandemic has compounded workforce supply issues across the region due to travel restrictions and a shortage of rental housing. Moreover, the COVID-19 vaccine rollout and associated administrative burdens have affected GP appointment availability and increased pressure on GPs and other practice staff. An increase in the number of intrastate visitors to the region along with demand for short term accommodation has exacerbated the shortage of rental housing and increased pressure on health services during peak holiday periods.

Aged Care

In 2021, there were 14,190 people aged 65 years and over in Albany SA3, representing 23% of the population compared to 16% across the state (Australian Bureau of Statistics, 2021a).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Great Southern health region, coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 31% of people aged 65 years and over across the Great Southern region had one long term health condition (including both physical and mental health conditions) and 26% had two or more co-morbid conditions, consistent with state rates. The most common types of conditions among older adults in the region were arthritis (29%), heart disease (15%), and diabetes (13%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Great Southern region, there were 1,169 people with dementia, with the highest number in Albany

SA2 (431) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level. Medicare items are available for in-depth assessment of a patient 75 years and over. This provides a structured way of identifying health issues and conditions that are potentially preventable or amenable to interventions to improve health and quality of life. Data for participating general practices (nine in total) indicate that the Great Southern has a similar rate of people over 75 accessing health assessments as the Country WA PHN, at 20%. However, the proportionally higher older adult population in the Great Southern highlights this as a potential area for improvement in care.

Aged care services

The aged care system in Australia offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. Across Australia, more than two-thirds of people using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021).

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

Home care services in Albany are provided by the private sector, community based and charitable organizations. As at December 2020, there were 410 people in a HCP in the Great Southern Aged Care Planning Region (ACPR) (Department of Health, 2021a). Additionally, there were 196 people waiting for a HCP with 59 people (30%) requiring the highest level of care (level 4).

There are 13 residential aged care facilities in Albany SA3. There were 70 residential aged care (RACF) beds per 1000 people aged 70 years and over compared to 63 in Country WA PHN and 72 across the state (Australian Institute of Health and Welfare, 2021b).

In 2019, Albany SA3 had 112 aged care nurse full-time equivalent (FTE) or 13 FTE per 1000 people aged 70 years and over compared to 12 FTE per 1000 across the state2.

Feedback from local stakeholders indicated that a growing ageing population, together with workforce turnover and shortages have led to increased pressure on aged care services. There is a need for additional support for aged care workers to assist with workforce training and retention.

Alcohol and Other Drugs

In Albany SA3 21.6% of residents were at long-term risk from alcohol consumption, which is 4.9% lower than the state rate (26.5%) (Epidemiology Branch, 2021b). 11.8% of the population in Albany are current smokers, which is similar to the state rate of 11.2% (Epidemiology Branch, 2021b).

The Great Southern Community Alcohol and Drug Service (GSCADS), run by the Palmerston Association, provides support to communities across the region from Walpole to Bremer Bay, and north to Kojonup, Katanning and Lake Grace. GSCADS also runs a needle and syringe program (NSP) to reduce the harms associated with injecting drug use. Alcohol and other drug services are also commissioned by the WA Primary Health Alliance.

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with a smoking status and proportion of patients with an alcohol consumption status. In Albany SA3 across 12 practices, 29% of GP patient records did not have a smoking status recorded (37% across the state) and 41% did not have an alcohol consumption status recorded (46% across the state). We note that these data include only private general practices and do not include health services provided by non-government organisations.

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018, of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. Albany SA3 had the highest rate of more than 10

deaths per 100,000 unintentional drug-induced deaths (Penington Institute, 2020).

Emergency department presentations

Country regions had higher rates of emergency department (ED) presentations related to alcohol and other drugs (AOD) compared to the state. Between 2018 and 2020, about 0.7% of ED presentations across the region were AOD-related (Department of Health Western Australia, 2021a). About two-thirds of AOD presentations (63%) were made after hours. Presentation rates per 100k population per year in Albany SA3 (468) were above the state rate (369). We note that some ED presentations may be related to alcohol and other drugs but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of AOD-related ED presentations in the region.

Mental Health

Mental Health is the leading cause of disease burden in the Great Southern accounting for 19.4% of the total disease burden (Department of Health Western Australia, 2021).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

Between 2015 and 2019, 7.0% of the population in Albany SA3 had anxiety, 7.8% had depression, and 7.6% had high or very high psychological distress, similar to WA rates (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 10% and 12% in Albany SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Between 2014 to 2018, 44 people died from suicide in the Great Southern, representing 1.8% of deaths in the region (Australian Institute of Health and Welfare, 2020c).

The prevalence of people with suicide ideation in the Great Southern was not statistically significantly higher than the state rate. According to the Health and Wellbeing Surveillance System survey between 2015 and 2019, 4.9% of the population in Albany SA3 thought seriously about ending their own lives compared to 5.5% of people across the state (Epidemiology Branch, 2021b).

Self-harm is a strong risk factor for suicide. The hospitalisation rate for self-harm in the Great Southern (249 per 100,000 residents) was above state rates at 224 per 100,000 residents. Self-harm hospitalisations were higher for females and for people aged 25 – 44 years (Australian Institute of Health and Welfare, 2020d).

Youth mental health

Depressive and anxiety disorders were the leading cause of disease burden for 15 to 24-year-olds contributing to 17% (depression) and 8% (anxiety) of the disease burden for this age group (Department of Health Western Australia, 2021). Hospital admissions for self-harm may also indicate a lack of access to mental health services. In the Great Southern, people aged between 0-24 years were hospitalised for self-harm above State rates but lower than the rate for the rest of Country WA PHN (Australian Institute of Health and Welfare, 2020c).

Services

Mental health services in the Great Southern region are provided by organisations including the WA Country Health Service (WACHS) and various not-for-profit organisations. The WACHS Great Southern Mental Health Service (GSMHS) provides mental health care for inpatient and community clients in the region. The community teams consist of triage, adult, older adult, youth, child and adolescent teams. GSMHS also employs Aboriginal mental health workers to assist in providing culturally appropriate treatment. Community Mental Health clinics are located in Albany and Katanning. Youth Focus provides the region's headspace services, located in Albany, and also runs a web counselling service.

A GP mental health treatment plan can be used to refer patients to psychiatrists, psychologists, counsellors, social workers and occupational therapists. The COVID-19 pandemic impacted utilisation of mental health services across the state. In 2020-21, 7.7% of the population in the Great Southern utilised GP mental health treatment plans, down from 8.2% in the previous year, but similar to the pre-pandemic rate of 7.5% in 2018-19 (Australian Institute of Health and Welfare, 2021d). In the Great Southern 1.8% of the population accessed a clinical psychologist through the Better Access MBS program (Australian Institute of Health and Welfare, 2021d). This is consistent with utilization across Country WA.

Aboriginal Health

Noongar people are the original inhabitants of the south-west of Western Australia and are one of the largest Aboriginal cultural nations in Australia. The Noongar nation is made up of fourteen different language groups, each of which corresponds to different geographical areas that are ecologically distinct. In the Great Southern, the Wagyl Kaip and Southern Noongar region refers to the Ganeang, Goreng and Minang dialectical groups.

In 2021, there were 2,498 Aboriginal people living in the Great Southern region (Australian Bureau of Statistics, 2021a). Data collected on Aboriginal socio-economic indicators by Aboriginal area (IARE) showed that in Albany, 32% of Aboriginal dwellings

had no internet connection and that in Kojonup – Gnowangerup, 23% of families were low income, 27% of dwellings were rented from the government housing authority and 48% of dwellings had no internet connection (Public Health Information Development Unit, 2021a).

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question "Has the person been told by a doctor or nurse that they have any of these long-term health conditions?".

In the Great Southern region, more Aboriginal people reported having the following conditions compared to non-Aboriginal people:

- 11.2% of Aboriginal people reported having Asthma compared to 8.8% of non-Aboriginal people.
- 6.7% of Aboriginal people reported having diabetes compared to 5.5% of Non-Aboriginal people.

(Australian Bureau of Statistics, 2021a).

In the Great Southern, 471 (18.9%) Aboriginal persons responded as having 1 Chronic condition, 148 (5.9%) have two Chronic conditions, while 92 (3.7%) have three or more Chronic conditions, 1407 (56.3%) have no Chronic condition, while 378 (15.1%) didn't respond to the question.

Indicators of maternal and early childhood health outcomes showed that there were high rates of smoking during pregnancy for Aboriginal mothers in Albany (39%) and Kojonup – Gnowangerup (45%). Moreover, about 42% of Aboriginal children in Albany were developmentally vulnerable on one or more domains (Public Health Information Development Unit, 2021a).

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of Narrogin-Wagin-Katanning (18%), Kojunup-Gnowangerup (18%) and Manjimup-Denmark-Plantagenet (14%) (Public Health Information Development Unit, 2021a).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. PIP QI data indicated that the proportion of general practice records for Indigenous clients aged between 35-44 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 62% in Albany SA3 (12 practices) as well as across the state (497 practices). We note that these data include only private general practices and do not include health services provided by non-government organisations. The percentage of GP patient records with Aboriginal status not recorded was 27% in Albany SA3 compared to 33% across the state.

Child immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years (Public Health Information Development Unit, 2021a). In the Great Southern region, childhood immunisation rates below target for Aboriginal children aged 2 years were 76% in Narrogin-Wagin-Katanning and 85% in Kojunup-Gnowangerup IAREs. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services. Country WA PHN had a greater rate of total non-urgent ED presentations (ASR=10,742 per 100,000 people per year) in Aboriginal and Torres Strait Islander people compared to WA (7,742). Within the Great Southern, rates of non-urgent ED presentations between 2017/18 were statistically significantly higher in the IARE of Albany for factors influencing health status (Public Health Information Development Unit, 2021a).

Avoidable deaths by selected causes

Rates of avoidable deaths (ASR per 100,000 Aboriginal persons) for Aboriginal persons aged 0 to 74 years were statistically significantly higher than state rates for:

- Circulatory system diseases: Narrogin-Wagin-Katanning (178 per 100,000)
- Other external causes: Narrogin-Wagin-Katanning (107 per 100,000).

Other external causes include transport accidents, accidental drowning, and submersion etc. (Public Health Information Development Unit, 2021a).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 rates of the following PPHs were statistically significantly elevated in the IAREs of the Great Southern region (Public Health Information Development Unit, 2020).

PPHs for chronic disease:

- Chronic angina: Albany (317 per 100,000)
- Diabetes in Kojunup-Gnowangerup (758 per 100,000)
- COPD: Albany (811 per 100,000).

PPHs for acute conditions:

- Acute dental: Albany (716 per 100,000).

Rates of vaccine-preventable PPH conditions were similar to state rates (Public Health Information Development Unit, 2020).

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal

and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease, with an age-standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Aboriginal and Torres Strait Islander people can access specific services aimed at Closing the Gap in health outcomes. It is important that General Practices ask all patients if they identify as Aboriginal and/or Torres Strait Islander. This assists with ensuring patients are provided with the option of accessing information and services specifically designed to meet their needs.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c). In 2019-20, 27.5% of Aboriginal people in Albany SA3 received an Aboriginal health check, similar to the rate for Country WA PHN (25.1%). Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.6% in Albany and the rest of WA. During 2018-19, only 34.8% of Indigenous Health Check patients in Albany SA3 received follow-up services compared to 46.8% across WA (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Services

Aboriginal people living in the Great Southern can access primary care services through general practice, mainstream primary care services and the hospital sector. Until recently, there was no access to an Aboriginal Community Controlled Health Organisation (ACCHO). The South West Aboriginal Medical Service will soon be opening a branch in Katanning to provide services to the local Aboriginal and Torres Strait Islander people.

Digital Health

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. In 2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

Prior to the COVID-19 pandemic, the MBS utilisation for telehealth services in Albany (0.44 per 100 resident population) was similar to Country WA (0.42) but higher than the national rate (0.21). COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The pertinent health concerns in the Great Southern are the increasing ageing population, chronic disease, and mental health. Mental health is a continuing priority for the Great Southern and is the leading cause of disease burden in the region. Depressive disorders and anxiety disorders contributed to much of this burden. Access to primary mental health services is limited in the Great Southern region with less than 1% of the population accessing a clinical psychologist through MBS services.

The population in the Great Southern had significantly higher prevalence rates of risk factors for chronic disease, particularly high blood pressure and obesity. Coronary heart disease and COPD are among the leading causes of disease burden.

The Great Southern has a large ageing population impacted by chronic disease. Coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over. Despite an adequate supply of aged care beds, feedback from local stakeholders indicated that a growing ageing population, together with workforce turnover and shortages have led to increased pressure on aged care services. Local intelligence also indicated that the COVID-19 pandemic has compounded workforce supply issues across the region due to travel restrictions and a shortage of rental housing.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
Mental Health is the leading cause of disease burden in the region. Depressive disorders and anxiety disorders contributed to the majority of the disease burden.	Access to primary mental health services is limited in the Great Southern region with less than 1% of the population accessing a clinical psychologist through MBS services.	Improve access to mental health services in the Great Southern.	Mental health	Access
Chronic disease accounted for a substantial proportion of the burden of disease. Coronary heart disease and COPD were among the leading cause of disease burden.	The Great Southern had high PPH rates for COPD, Congestive Heart Failure, and iron deficiency anaemia. Katanning was a hotspot for total chronic conditions as well as for asthma and hypertension.	Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	Population health	Chronic conditions
The Great Southern has a high proportion of older adults. Coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.	Despite an adequate supply of aged care beds, feedback from local stakeholders indicated that a growing ageing population, together with workforce turnover and shortages have led to increased pressure on aged care services.	Improve the management of chronic conditions for ageing populations and promote healthy ageing at home.	Aged care	Chronic conditions
Most Australians would prefer to die at home rather than in a hospital or aged care facility.	There is a lack of home care palliative care providers.	There is a need to increase access to at home palliative care services.	Aged care	Palliative care

Opportunities and options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Improve access to mental health services in the Great Southern.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals.	Non-Government Organisations Community Mental Health Services General Practice
Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P4 PHN delivers a range of support activities to general practices and other health care providers.	General Practice Allied Health Providers
Improve the management of chronic conditions for ageing populations and promote healthy ageing at home.	AC2 Increase in the rate of people aged 75 years and over with a GP health assessment.	General Practice Aged Care Organizations Local Hospital Networks Local Governments
There is a need to increase access to at home palliative care services.	P2 A health system improvement, innovation or commissioning best practice.	General Practice Aged Care Organizations Local Hospital Networks Local Governments

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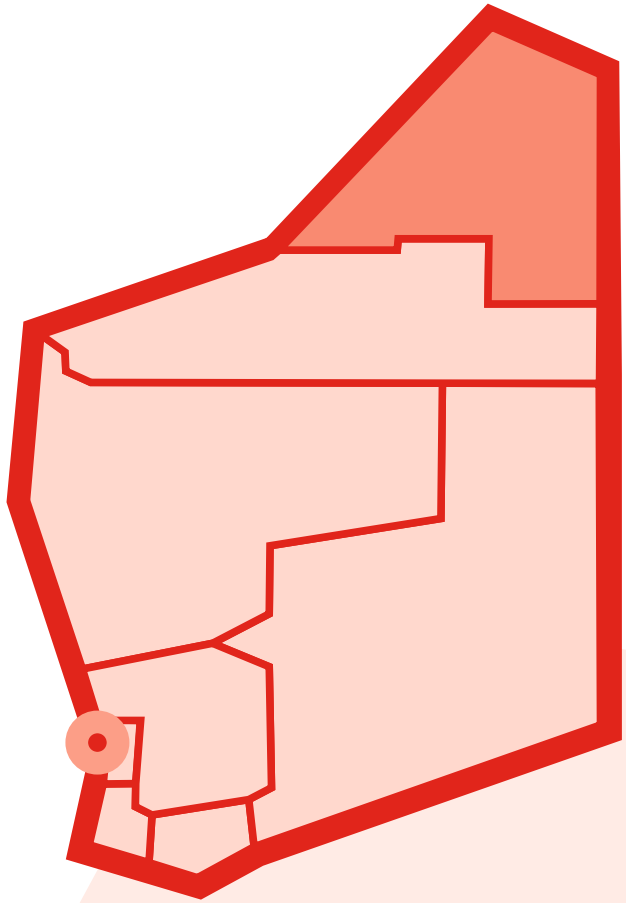
Kimberley

Needs Assessment 2022-2024



Kimberley

Population Demographics

The Kimberley region is Western Australia's northern most region and spans over 400,000 square kilometres. Kimberley is made up of six major townships and over 200 small remote Aboriginal communities. The three largest towns of the Kimberley are Broome, Derby and Kununurra.

Major industries include mining and resources, tourism, agriculture, and aquaculture. The Kimberley is a major contributor to food production in WA with over 93 pastoral stations farming cattle and extensive crop production in the Ord River Irrigation Area. The aquaculture industry is dominated by pearling and barramundi farms while the mining and resources industry includes Iron Ore, Mineral Sand and LNG. The Kimberley has a sizeable tourism industry which attracts over 400,000 domestic and international visitors per year.

In 2021, the population of the Kimberley was 35,092 compared to the Country WA PHN population of 529,933 and the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). Stakeholders have indicated that the Kimberley population is transient with locals moving frequently between various towns and communities.

Injury is the leading cause of disease burden

Highest cancer and **cardiovascular** burden in the state

21% of adults aged 16+ years smoke

44% of adults aged 16+ years are at high risk of long-term harm from **alcohol consumption**

Highest rates in the state of potentially preventable hospitalisations for **total chronic conditions, COPD, diabetes complications** and **congestive heart failure**

Mental ill-health is the **second** leading cause of disease burden

High rate of **suicide** representing **7.4% of all deaths**

7.2% of people are aged **65 years and over**

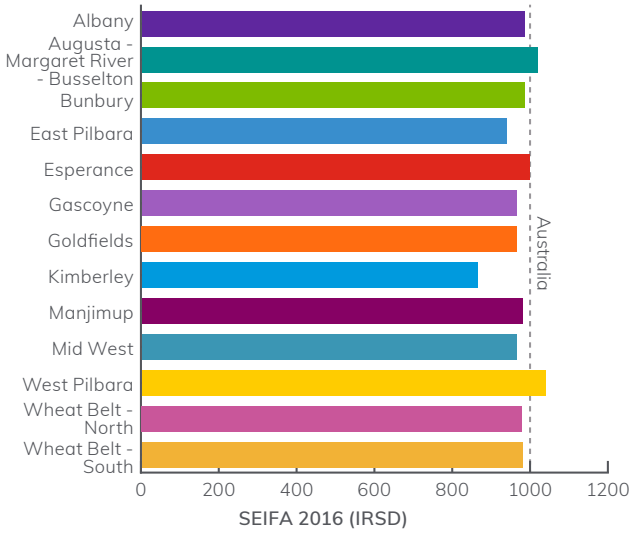
There are an estimated **18,168 Aboriginal people** residing in the region

23% of Aboriginal people received an **Indigenous-specific health check** through Medicare in 2019-20

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

Across the state, the Kimberley has the highest levels of socioeconomic disadvantage (IRSD=863, compared to 1016 in WA) (Public Health Information Development Unit, 2021b) as well as the largest Aboriginal population (14,408 people) representing 41% of the population (Public Health Information Development Unit, 2022).

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.2% of people in Kimberley SA3 were born overseas and have poor English proficiency (80 people) compared to 1.8% of people across the state (44,521 people) (Public Health Information Development Unit, 2022).
- About 2.9% of people in Kimberley SA3 have a profound or severe disability compared to 4.6% of people across the state (Australian Bureau of Statistics, 2021a).
- About 8.6% of people in Kimberley SA3 provide unpaid assistance to people with a disability compared to 11% of people across the state (Public Health Information Development Unit, 2022).
- About 42% of children in Kimberley SA3 were developmentally vulnerable on one or more domains compared to 19% of children across the state (Public Health Information Development Unit, 2021b).
- The Kimberley has the largest homeless population in WA. In 2016, it was estimated that 1205 people in Kimberley SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 61% of homeless people were living in 'severely' crowded' dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018).

There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Kimberley.

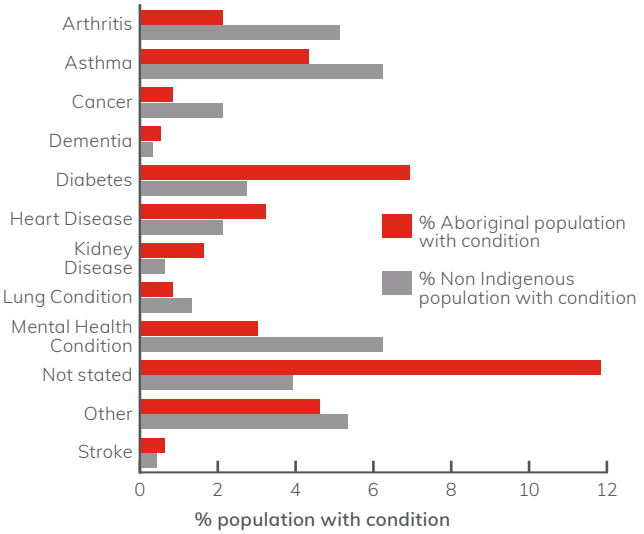
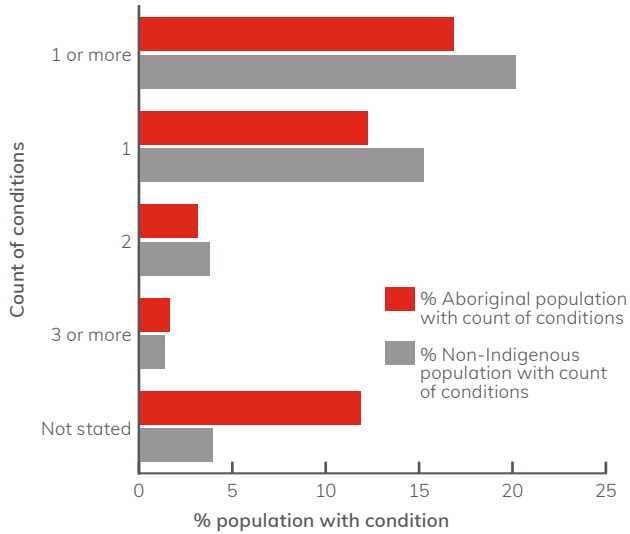


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Kimberley.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). Data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 estimated that about 21% of adults aged 16 years and over in Kimberley SA3 were current smokers compared to only 11% of adults across the state (Epidemiology Branch, 2021a). However, Kimberley SA3 had significantly higher rates of people who did 150 minutes or more of moderate physical activity (68%) compared to the state (62%).

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

Stakeholders have indicated that food security impacts communities in the Kimberley. The 2013 Food Access and Cost Survey Report found food costs significantly increased with distance from Perth. The largest differences in food cost between Perth and remote areas were for fruit (37.9% more), non-core foods (31.0% more) and dairy (30.6% more) (Pollard et al., 2015).

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Kimberley region had a 1.9 times higher rate of fatal burden and a 1.4 times higher rate of non-fatal burden compared to the metropolitan regions. Overall, injury was the leading cause of burden, representing 18% of the total burden in the region. Chronic disease also accounted for a substantial proportion of the burden of disease. The region had the highest cancer and cardiovascular burdens in the state, respectively accounting for 14% and 13% of the total burden in the region. Moreover, burden due to endocrine and kidney diseases were especially high in comparison to other regions, representing 5% each of the total burden. Coronary heart disease and chronic kidney disease were among the leading five causes of burden for both males and females, type 2 diabetes was the third leading cause for females, and COPD was the fourth leading cause for males.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the Kimberley region, age-adjusted prevalence rates were 13% for one long-term condition and 6.0% for two or more conditions. The Kimberley had a relatively high rate of diabetes (ASR=5.9%) compared to the state (ASR=4.5%). It also had the highest rates of kidney disease (ASR=1.5%) in Western Australia. For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

In 2017-18, the Kimberley SA3 had the highest rate of chronic condition PPHs in WA (2910) more than two and a half times the WA rate and very high rates for all conditions including COPD (705), diabetes complications (579), congestive cardiac failure (470) and iron deficiency anaemia (305) (Australian Institute of Health and Welfare, 2019). Moreover, the rate of PPHs for rheumatic heart disease was 118 per 100,000 compared to only 17 per 100,000 across the state.

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, there were three population health areas (PHAs) that were hotspots for chronic conditions. Of these, Halls Creek/Kununurra PHA had the highest number of hospitalisations for total chronic conditions in the region.

- Broome PHA: total chronic conditions, angina, congestive cardiac failure, iron deficiencies and rheumatic heart disease.
- Derby – West Kimberley/Roebuck PHA: total chronic conditions and all conditions except bronchiectasis and iron deficiencies.
- Halls Creek/Kununurra PHA: total chronic conditions and all conditions except iron deficiencies.

Management of chronic disease in primary care

From 2018-19 to 2020-21, percentage of population utilisation of GP chronic disease management plans (CDMPs) remained stable at 12% in Kimberley SA3 and was consistent with the national rate for SA3s in remote areas (Australian Institute of Health and Welfare, 2021d).

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in the Kimberley region, childhood immunisation rates in Kimberley SA3 were below target, except for children at 5 years. About 94.9% of children were fully immunised at 1 year, 91.5% at 2 years, and 97.5% at 5 years (Department of Health, 2021b). The lower rate at 2 years suggests that interventions should be targeted to increase immunisation coverage for this age group.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicate that cancer screening participation rates in Kimberley SA3 were below state rates, particularly for bowel cancer. Participation rates were 27% for bowel cancer screening, 46% for breast cancer screening, and 40% for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately

reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was only 61 years in Kimberley SA3 (50% of people who died were younger than 61 years) compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, the age-standardised death rate from avoidable causes in Kimberley SA3 (ASR=348 per 100,000) was the highest in the state (Public Health Information Development Unit, 2021b). Death rates for selected causes were the highest in the state for all conditions and the rate for diabetes (ASR=54 per 100,000) was almost eight times the state rate (ASR=6.7 per 100,000).

Utilisation of primary care services

The COVID-19 pandemic impacted primary care service utilisation across the state. Between 2018-19 and 2020-21, rates of people visiting a GP decreased from 79% to 72% of the population in Kimberley SA3 (compared to 73% nationally for SA3s in remote areas) (Australian Institute of Health and Welfare, 2021d).

The percentage utilising after-hours GP services decreased from 12% to 9.7%, while the utilisation rate of GP health assessments, including Aboriginal health assessments, also decreased from 15% to 12% (Australian Institute of Health and Welfare, 2021d). We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region. It is not currently possible to obtain data by type of health assessment. It is likely that staff shortages stemming from the COVID-19 pandemic contributed to a reduction in service availability and utilisation across the region.

About 18% of the population in Kimberley SA3 utilised Medicare-subsidised allied health services and 15% of the population utilised optometry (Australian Institute of Health and Welfare, 2021d). These were well below utilisation rates of 26% and 22%, respectively in remote areas nationally. We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations. Stakeholders have indicated that Boab Health provide primary care allied health services across the region aimed at chronic conditions such as diabetes.

Utilisation of nurses and Aboriginal health workers in Kimberley SA3 was 18% in 2020-21 and was substantially higher than the national rate of 8.3% for remote areas (Australian Institute of Health and Welfare, 2021d).

Visiting specialist services

The Kimberley relies on visiting specialists to provide care, often through monthly or quarterly visits (with some visits only occurring in larger town sites) and in some cases require patient trips to Perth. Feedback from local stakeholders has identified issues such as multiple referrals for clients being received and placed on the waiting list, remote clients booked in the following day for a specialist service (without awareness of the distance required to travel), and lack of financial support for families to travel if the care giver requires specialist appointments. Many clients living in remote areas require assistance from the Patient Assisted Travel Scheme (PATS) and Aboriginal clients may require top-up funds from Integrated Team Care (ITC) in order to access specialist services. Stakeholders also highlighted issues with communication from specialists back to the referring agency due to various health management systems in place. These coordination and communication issues represent barriers to accessing timely health care and may adversely impact patient experience of care.

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. ARN Index scores for many SA2s in the region were high due to a high supply of primary care services, particularly in Broome SA2. The lowest ARN Index score in the region was in Roebuck SA2, which was in the third decile (access relative to need was lower than 70% of SA2s in the state) for access to any GP and in the sixth decile for access to bulk billing GPs. We note that a high supply of services does not mean that services are being effectively utilised. Service fragmentation and maldistribution are notable issues in the Kimberley and remain an ongoing challenge for service provision in the region.

Workforce

General practitioners (GPs)

In 2020, Kimberley SA3 had 28 GP full-time equivalent (FTE) or 0.8 FTE per 1000 residents compared to 1.1 FTE per 1000 across the state2. The ratio of vocationally registered (VR) to non-VR GPs in Kimberley SA3 (13) was similar to the state (12).

Primary care nurses

The Kimberley region had the highest relative supply of primary care nurses in WA. In 2019, Kimberley SA3 had 222 primary care nurse full-time equivalent (FTE) or 6.2 FTE per 1000 residents compared to 1.7

FTE per 1000 across the state[2]. Moreover, primary care nurses in Kimberley SA3 worked relatively long hours, with an average of 36 hours per week compared to 30 hours a week across the state.

Aged Care

The Kimberley has a relatively small proportion of people aged 65 years and over compared to other Country regions. In 2021, there were 2,704 people aged 65 years and over in Kimberley SA3, representing only 7.7% of the population compared to 16% across the state (Australian Bureau of Statistics, 2021a).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Kimberley health region, COPD, chronic kidney disease and type 2 diabetes were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 26% of people aged 65 years and over across the Kimberley region had one long-term health condition (including both physical and mental health conditions) and 18% had two or more co-morbid conditions compared to 31% and 26%, respectively across the state. The most common types of conditions among older adults in the region were arthritis (16%), heart disease (10%), and diabetes (15%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Kimberley region there were 189 people with dementia, with the highest number in Broome SA2 (80) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level.

Aged care services

In Australia, the aged care system offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. More than two-thirds of people across Australia using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021). The relatively large population of Aboriginal people in the Kimberley means that access to aged care may be required at a younger age compared to other regions. Planning for aged care services takes into account the needs of Aboriginal people aged 50 years and over and non-Aboriginal people aged 65 years and over. In 2016, it was estimated that there were 2768 Aboriginal people aged 50 years and over in Kimberley SA3.

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

Home care in the Kimberley is provided by community-based organizations, the WA Country Health Service and religious organizations. As at December 2020, there were 139 people in a HCP in the Kimberley Aged Care Planning Region (ACPR) (Department of Health, 2021a). An additional 60 people were waiting for a HCP with four people requiring the highest level of care (level 4).

There were seven residential aged care facilities in the Kimberley, these include multipurpose facilities managed by the WA Country Health Service and specific Aboriginal and Torres Strait Islander aged care services (Australian Institute of Health and Welfare, 2021b). In 2020, there were 199 residential aged care (RACF) beds in Kimberley SA3 or 151 beds per 1000 population aged 70 years and over compared to 72 beds per 1000 across the state. There are an estimated 1319 people aged 70 years and over living in the Kimberley. Although the Kimberley has a relatively high ratio of beds to population, it does not take into account the large Aboriginal population, who are likely to require residential aged care services at a younger age.

In 2019, Kimberley SA3 had 43 aged care nurse full-time equivalent (FTE) or 33 FTE per 1000 people aged 70 years and over compared to 12 FTE per 1000 across the state2. The relatively high ratio reflects the low number of people aged 70 years and over in the region. However, average weekly hours of aged care nurses were 42 hours per week in Kimberley SA3 compared to 33 hours per week across the state, which indicates a high workload among aged care nurses in the region.

Alcohol and Other Drugs

In Kimberley SA3, 43.7% of residents were at a statistically significantly greater long-term risk from alcohol consumption, with the highest rate recorded in WA. This exceeds the state rate by 17.2% (Epidemiology Branch, 2021b). Kimberley SA3 also had the greatest proportion of current smokers in WA (21.1%), exceeding the state rate by 9.9% (Epidemiology Branch, 2021b).

Stakeholders in the Kimberley region have concerns about fetal alcohol spectrum disorder (FASD) in their communities. Fitzroy Crossing in the West Kimberley region of Western Australia (WA) has the highest reported prevalence of fetal alcohol spectrum disorder (FASD) in Australia with rates of FASD or partial FASD in 12 per 100 children. This is on par with the highest rates internationally (Senate Committee, 2021).

In May 2021, the WA government commenced a two-year trial of a Takeaway Alcohol Management System (TAMS) and Banned Drinkers Register (BDR) in the Kimberley to assist with managing alcohol-related issues in the region. As part of the BDR trial, customers will not be able to purchase takeaway alcohol without approved photo ID. Under the TAMS sales of takeaway alcohol will be monitored, allowing customers to purchase alcohol according to a daily volume limit for their area (Department of Local Government Sport and Cultural Industries, 2021).

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018, of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at-risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. In 2014-2018 Kimberly SA3 had the second highest rate range of 7.5 to 9.9 deaths per 100,000 for unintentional drug-induced deaths (Penington Institute, 2020).

Emergency department presentations

Country regions had higher rates of emergency department (ED) presentations related to alcohol and other drugs (AOD) compared to the state. Between 2018 and 2020, around 1.1% of ED presentations across the region were AOD-related (Department of Health Western Australia, 2021a). About 56% of AOD-related presentations were made after hours. Presentation rates per 100k population per year in Kimberley SA3 (1968) were the highest in the state and were more than five times the state rate (369). We note that some ED presentations may be related to alcohol and other drugs but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of AOD-related ED presentations in the region.

Services

Drug and Alcohol services are provided by the WA Country Health Service, not-for-profit organisations and Aboriginal organisations.

The WA Country Health Service provides the Kimberley Community Alcohol and Drug Service in Kununurra, Halls Creek, Derby, Fitzroy Crossing and Broome. This service provides assessment, counselling and referral and support for people experiencing alcohol and other drug issues.

Cyrenian House – Milliya Rumurra Aboriginal Corporation provides individuals and their families with improved access to alcohol and other drug services on an outreach basis, servicing the communities north of Broome along the Dampier Peninsula and south to Bidyadanga. This service also provides residential treatment and rehabilitation services to Aboriginal people. Alcohol and other drug services are also provided by Aboriginal organisations in Wyndham, Fitzroy Crossing, Kununurra and Derby.

A key challenge that exists in the Kimberley is the lack of specific detox facilities, particularly as AOD referrals for treatment continues to rise (Collins, 2016). As part of the 2019-2020 Budget, the WA government announced a low medical withdrawal detox facility was planned for the Kimberley, given that these services do not formally exist in the Kimberley region (WA Mental Health Commission, 2021).

Mental Health

Mental health was the second leading cause of disease burden in the Kimberley region contributing 15% to the total disease burden for the region (Department of Health Western Australia, 2021). Suicide and self–inflicted injuries were the leading cause of burden of disease for males in the Kimberley contributing to 10% of the disease burden (Department of Health Western Australia, 2021).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

In the Kimberley, 7.5% of people were diagnosed with anxiety and 8.9% with depression, while 10%

scored high or very high psychological distress using the Kessler 10 scale, all of which were similar to state rates (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 4.2% and 5.0% in Kimberley SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Suicide is a serious issue for the communities in the Kimberley. Seventy-four people died from suicide in the Kimberley between 2014 to 2018 representing 7.4% of all deaths in the region (Australian Institute of Health and Welfare, 2020c). The age standardized rate for suicide deaths in the Kimberley is 41 per 100,000 residents compared to the age standardized rate for WA (15 per 100,000) (Australian Institute of Health and Welfare, 2020c).

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. In the Kimberley, 5.8% of the population reported that they thought seriously about ending their own lives, similar to the state rate (5.5%) (Epidemiology Branch, 2021b). However, 14% reported that a friend of theirs attempted suicide and this was significantly above the state rate (7.7%).

Self-harm is a strong risk factor for suicide. The Kimberley had the highest rates of hospitalisation for self-harm in the State (611 per 100,000 residents compared to 224 per 100,000 residents in WA) (Australian Institute of Health and Welfare, 2020c). Self-harm hospitalisations were highest for females and for people aged 25 – 44 years (Australian Institute of Health and Welfare, 2020d).

The State Coroner's Inquest into the deaths of thirteen children and young persons in the Kimberley noted the impact of intergenerational trauma in Aboriginal communities and recommended increased coordination and accountability between service providers and agencies (State Coroner, 2019). The Kimberley was identified as one of twelve locations across Australia to participate in the National Suicide Prevention Trial. The trial aims to develop a model of suicide prevention that meets the unique and culturally sensitive needs of the region's Aboriginal communities.

Youth mental health

Suicide and self-inflicted injuries were the leading course of disease burden for 15 to 24-year-olds contributing to 33% of the disease burden for this age group (Department of Health Western Australia, 2021).

Hospital admissions for self-harm may also indicate a lack of access to mental health services. In the Kimberley people aged between 0-24 had the highest rates of hospitalisation for self-harm in the state (Australian Institute of Health and Welfare, 2020c).

Emergency department presentations

Country regions had higher rates of mental health-related emergency department (ED) presentations compared to the state. Between 2018 and 2020, around 1.9% of ED presentations across the region were primarily mental health-related, excluding those related to alcohol and other drugs (Department of Health Western Australia, 2021a). Almost half of mental health ED presentations (46%) were made after hours. The presentation rate per 100k population per year in Kimberley SA3 (3484) was the highest in the state and more than three times the state rate (1083). We note that some ED presentations may be related to mental health but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of mental health ED presentations in the region.

Services

Mental health services in the Kimberley are provided by the WA Country Health Service, not-for-profit organisations and Aboriginal Community Controlled Organisations. The WA Country Health Service provides adult community mental health services, child and adolescent mental health services and the Statewide Aboriginal Mental Health Service. The headspace service provides psychological services to youth in Broome. Anglicare offers counselling services in Kununurra, Halls Creek, Broome and Derby. Boab Health Services provide psychological intervention for mild to moderate mental health issues across the Kimberley region and provide a mental health service for children and youth.

Stakeholders have indicated staff retention and the cost of travelling vast distances to provide clinical services as challenges to service provision in the Kimberley. Services are located in the major townships and outreach is hampered by travel barriers and costs particularly in the wet season (State Coroner, 2019).

In 2020-21, 4.7% of the population in the Kimberley accessed a GP mental health treatment plan and 1.1% accessed a clinical psychologist through the Better Access MBS program, indicating that mental health care in the Kimberley is predominately provided by the hospital and not-for-profit sectors (Australian Institute of Health and Welfare, 2021d).

Aboriginal Health

The Kimberley region has the largest Aboriginal population in WA, with an estimated 14,408 Aboriginal people representing 41.1% of the population (Australian Bureau of Statistics, 2021a). There are over 30 different language groups in the Kimberley and over 200 remote Aboriginal communities. English is often a second or third language for Aboriginal people in the Kimberley with the most common languages being Kriol, Bardi, Walmajarra and Jaru. Thirty percent of the population in the Kimberley speak both English and another language at home (Australian Bureau of Statistics, 2016).

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question "Has the person been told by a doctor or nurse that they have any of these long-

term health conditions?".

In the Kimberley region, more Aboriginal people reported having the following conditions compared to non-Aboriginal people:

- 6.9% of Aboriginal people reported having Diabetes compared to 2.7% of non-Aboriginal people.
- 3.2% of Aboriginal people reported having Heart Disease compared to 2.1% of non-Aboriginal people.
- 1.6% of Aboriginal people reported having Kidney Disease compared to 0.6% of non-Aboriginal people.

In the Kimberley, 1754 (12.2%) Aboriginal persons responded as having 1 Chronic condition, 441 (3.1%) have two Chronic conditions, while 226 (1.6%) have three or more Chronic conditions, 10283 (71.4%) have no Chronic condition, while 1699 (11.8%) didn't respond to the question.

Aboriginal populations in the Kimberley are some of the most disadvantaged in the state; however, there is a great deal of variation geographically and economically within the region. The Indigenous Relative Socioeconomic Outcome Index (IRSEO) score indicates that Kalumburu and Argyle-Warmun had the highest levels of disadvantage for Aboriginal people living in the Kimberley, with high levels of unemployment, welfare dependence, lower levels of education and poorer housing suitability (Public Health Information Development Unit, 2021a). In Kalumburu, 38% of dwellings required extra bedrooms and 93% had no internet connection. In contrast, Aboriginal people in Broome experienced lower levels of socioeconomic disadvantage compared to those in Greater Perth and the rest of the state.

Aboriginal children in the Kimberley are also impacted by disadvantage (Public Health Information Development Unit, 2021a). About 74% of Aboriginal children in the Great Sandy Desert and over 55% of Aboriginal children living outside of Broome and the Fitzroy River region were developmentally vulnerable in one or more domains according to the Australian Early Development Census. In the Derby and Fitzroy Crossing regions 64% of Aboriginal mothers smoked during pregnancy. Eighteen percent of babies born in Halls Creek and the Great Sandy Desert had a low birthweight. The period of development between conception to early childhood impacts later development, including health and wellbeing, mental health, social functioning, and cognitive development (Public Health Information Development Unit, 2021a).

Aboriginal housing

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of Kalumburu (59%), Halls Creek (56%) and Outer Derby-West Kimberley (56%) (Public Health Information Development Unit, 2021a).

Childhood immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In the Kimberley region, childhood immunisation rates were below target for children aged 2 years in all Kimberley IAREs. These were especially low in Great Sandy Desert (74%), Halls Creek (74%) and Broome (78%). This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services. Country WA PHN had a greater rate of total non-urgent ED presentations (ASR=10,742 per 100,000 people per year) in Aboriginal and Torres Strait Islander people compared to WA (7,742) (Public Health Information Development Unit, 2021a). In Country WA, top major diagnosis chapters included factors influencing health status (3,626 ASR per 100,000) and injury and poisoning (ASR=2,763 per 100,000).

Statistically significantly higher rates of non-urgent ED presentations were recorded between 2017/18:

- Diagnosis chapters factors influencing health status and contact with health services: Broome and Great Sandy Desert
- Injury, poisoning and certain other consequences of external causes: Broome (Public Health Information Development Unit, 2021a).

Avoidable deaths by selected causes

The Aboriginal population in the Kimberley are impacted by deaths that could have been prevented through the provision of treatment through primary or hospital care at rates higher than other country regions in WA (Public Health Information Development Unit, 2021a).

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significantly higher in the following regions (ASR per 100,000 Aboriginal persons):

- Diabetes: Outer Derby-West Kimberley (89 per 100,000), Derby-Mowanjum (83), Fitzroy River (79), Fitzroy Crossing (79), Halls Creek (77), Broome (57)
- Circulatory system diseases: Wyndham (192 per 100,000), Kununurra (191), Kalumburu (189), Great Sandy Desert (176), Argyle – Warmun (172), Halls Creek (162), Broome (113)
- Selected external causes (falls, fires, burns, suicide and self-inflicted injuries): Kununurra (189 per 100,000), Halls Creek (70), Broome (48)
- External causes (transport accidents, accidental drowning and submersion): Great Sandy Desert (96 per 100,000), Halls Creek (95), Broome – Surrounds (93), Kununurra (75) (Public Health Information Development Unit, 2021a).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 the following PPHs were statistically significantly higher in the IAREs of the Kimberley region (Public Health Information Development Unit, 2020).

PPHs for chronic disease:

- Chronic angina: Halls Creek -Surrounds (518 per 100,000), Kununurra (359) and Broome (261)
- Asthma: Outer Derby – West Kimberley (733 per 100,000), Halls Creek -Surrounds (697) and Great Sandy Desert (670)
- Congestive cardiac failure: Great Sandy Desert (836 per 100,000), Halls Creek -Surrounds (775) and Halls Creek (765)
- Diabetes: North Kimberley (1,139 per 100,000), Fitzroy River (1,125) and Wyndham (1,052)
- Iron deficiency: Broome (811 per 100,000)
- COPD: Wyndham (1,488 per 100,000), Kununurra (1,354) and Kalumburu (1,211).

PPHs for acute conditions:

- Acute cellulitis: North Kimberley (2,904 per 100,000), Kununurra (2,817) and Wyndham (2,746)
- Acute convulsions and epilepsy: Broome (974 per 100,000), Kununurra (873) and Derby – Mowanjum (688)
- Acute dental: Broome (983 per 100,000), North Kimberley (924) and Outer Derby – West Kimberley (874)
- Acute ear, nose and throat infections: Fitzroy River (1,676 per 100,000), Halls Creek – Surrounds (1,635) and Great Sandy Desert (1,579)
- Acute urinary tract infections (including pyelonephritis): Fitzroy Crossing (1,666 per 100,000), Outer Derby – West Kimberley (1,453) and Fitzroy River (1,248) (Public Health Information Development Unit, 2020).

PPHs for vaccine-preventable conditions:

- Pneumonia and influenza: Kununurra (903 per 100,000), North Kimberley (887), Broome (654)
- Other: Fitzroy Crossing (1,524 per 100,000), North Kimberley (1,464) and Great Sandy Desert (1,455).

NOTE: Vaccine-preventable (other) includes diseases such as hepatitis B, measles, mumps, and chicken pox (Public Health Information Development Unit, 2020).

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Access to private general practice is limited in the Kimberley with only a few private practices operating in the region. Aboriginal people in the Kimberley are more likely to receive a health service from an Aboriginal Community Controlled Health Organisation or the hospital sector.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c).

In 2019-20, the proportion of the Aboriginal population who received an Indigenous Health Check was 23.2% in Kimberley SA3, which was less than Country WA PHN (25.1%). Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.3% in Kimberley and 0.6% across the state. In 2018-19, the Kimberley (52.7%) had a higher proportion of patients who received follow-up services compared to the State (46.8%) (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Digital Health

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. In 2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical

services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

The pre-COVID-19 MBS utilisation for telehealth services in Kimberly (0.23 per 100 resident population) was similar to the national rate (0.21), however it was lower than Country WA (0.42). COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

In 2020, telechemotheraphy services commenced in Broome and Aboriginal Medical Services have introduced the Silhouette wound surveillance system (ARANZ Medical, New Zealand), which has helped improve the quality of services delivered.

Summary

The Kimberley is a remote and sparsely populated region in northern WA. Culturally rich, a large proportion of the population is Aboriginal with over 200 small remote Aboriginal communities in the region. Many people who live in the Kimberley are transient, which creates challenges for service providers regarding continued care for patients. The Kimberley has the highest levels of socioeconomic disadvantage compared to the rest of WA, and the social determinants of health have been recognised as a fundamental issue in the region.

The dominant health concerns in the Kimberley are chronic disease, mental health and alcohol and other drug use. The population in the Kimberley has significantly high prevalence rates of risk factors for chronic disease, with the region recording the highest cancer and cardiovascular burdens in WA. The Kimberley also has the highest rates of PPHs in WA for total chronic conditions as well as for COPD, diabetes complications, and congestive cardiac failure. This is connected to the Kimberley having the highest rate of deaths from avoidable causes in the state.

Mental health is a continuing priority for the Kimberley and is the second leading cause of disease burden in the region. Depression, self-harm, and suicide impact communities in the Kimberley particularly in men and young people, with the region recording the highest rates of self-harm in WA. Alcohol consumption and smoking is another key concern in the Kimberley, with the region recording the highest rate of residents at greater long-term risk from alcohol consumption in the state. The Kimberley also had the greatest proportion of current smokers in WA, which was more than double the state rate. Furthermore, this is associated with the concerning rates of smoking during pregnancy among Aboriginal mothers in this region.

How particular health needs are already being addressed by current services:

As relevant, a short summary of how a particular health need is being addressed by current services, highlighting where:

- *PHNs currently fund services that address the identified health need*
- *While specific health needs might have been identified within the PHN region, it will not translate into a priority as it is already adequately addressed by other existing non-PHN funded services.*

An analysis of health and service needs in the Kimberley identified a couple of issues outside the scope of the PHN program. The analysis found there were high levels of socio-economic disadvantage with the social determinates of health representing a major challenge in the region. Housing, education, and employment is outside the remit of the PHN program and is the responsibility of the state government and other not for profits.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
The Kimberley has the highest cancer burden in WA.	Cancer screening rates are low in the Kimberley.	Improve the rates of cancer screening and reduce avoidable deaths from cancer.	Population Health	Safety and quality of care
Across the Kimberley the following chronic conditions PPH are consistently high: diabetes, chronic obstructive pulmonary disease, and congestive cardiac failure.	There are PPH hotspots for diabetes, chronic obstructive pulmonary disease and congestive cardiac failure in the Kimberley	Ensure primary care services are available for people with chronic conditions that provide a holistic approach to management including improving self-management.	Population Health	Chronic conditions
Mental Health is the second leading cause of disease burden in the region. Depression, self-harm, and suicide impact communities in the Kimberley particularly in men and young people, with the region recording the highest rates of self-harm in WA.	Mental health presentations to the ED were the highest in the state and less than 1% of the population access psychological services through MBS.	Ensure integrated and stepped care services are available for people who experience mental health across the spectrum.	Mental Health	System integration
Alcohol consumption and smoking is another key concern in the Kimberley.	AOD related ED presentations were the highest in the State.	Improve access to screening and AOD treatment services	Alcohol and other drugs	Access
Aboriginal people living in the Kimberley have some of the poorest health outcomes in the state.	Aboriginal people in the Kimberley have high rates of PPH presentations and non-urgent ED presentations.	Improve access to coordinated culturally appropriate primary care for Aboriginal people.	Aboriginal and Torres Strait Islander Health	Appropriate Care (including cultural safety)

Opportunities and options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Improve the rates of cancer screening and reduce avoidable deaths from cancer.	PH2 Increase in specified population participation rates of cancer screening. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing participation rate.	Cancer Council WA BreastScreen Cancer screening organisations
Ensure primary care services are available for people with chronic conditions that provide a holistic approach to management including improving self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P12 Decrease in PPH rates. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing rate of PPH.	WA Country Health Service Aboriginal Community Controlled Health Services Diabetes WA WA Asthma Foundation Silver Chain
Ensure integrated and stepped care services are available for people who experience mental health across the spectrum.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals. MH4 Formalised partnerships with other regional service providers to support integrated regional planning and service delivery.	Non-Government Organisations Community Mental Health Services General Practice
Improve access to screening and AOD treatment services	AOD1 Rate of drug and alcohol commissioned providers actively delivering services.	General Practice Mental Health Commission WANADA
Improve access to coordinated culturally appropriate primary care for Aboriginal people.	IH5 ITC improves the cultural competency of mainstream primary health care services.	Aboriginal Medical Services Local Hospital Network Aboriginal Non-Government Organisations

WA Primary Health Alliance
Better health, together

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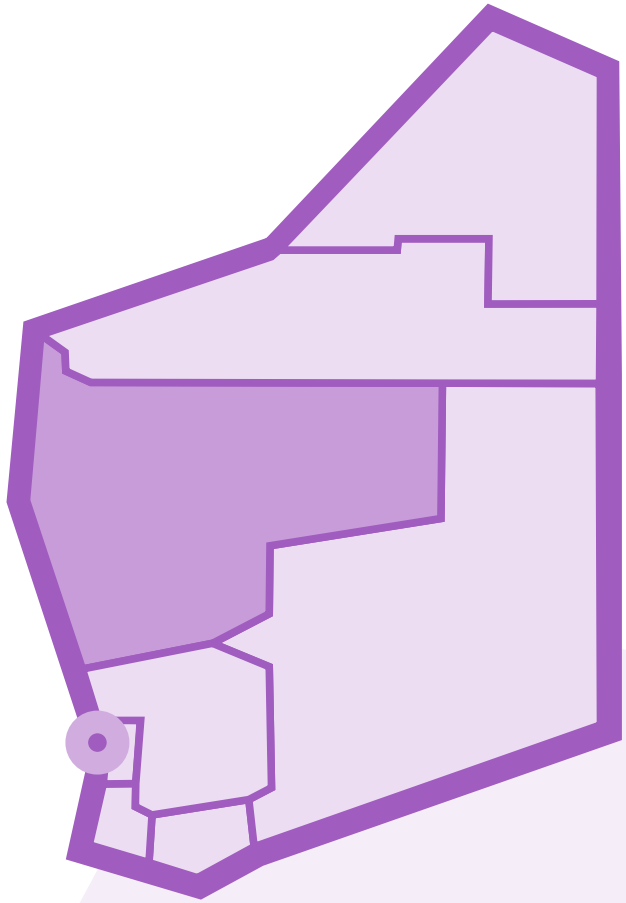
PERTH NORTH, PERTH SOUTH, COUNTRY WA
An Australian Government Initiative

Midwest

Needs Assessment 2022-2024



Midwest

Population Demographics

The Midwest health region of Western Australia covers more than 605,000 square kilometres, approximately one quarter of the total land mass of WA and services a population of around 64,000. The region is located in the northern central area of Western Australia and incorporates the health districts of Gascoyne, Geraldton, Midwest and Murchison.

In 2021, the population of Country WA PHN was 529,933 people compared to the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). In the Midwest region, there are 54,981 people living in Mid West SA3 and 9,537 people in Gascoyne SA3.

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

Coronary heart disease, COPD and **lung cancer** are among the leading causes of disease burden

37% of adults aged 16+ years are **obese**

34% of adults aged 16+ years are at high risk of long-term harm from **alcohol consumption**

2ND **Mental ill-health** is the **second** leading cause of disease burden

6% of the population in **Mid West SA3** and **2%** in **Gascoyne SA3 accessed a GP mental health treatment plan**

Less than 1% of the population accessed a **clinical psychologist** through Medicare

17% of people in Mid West SA3 and **15%** in Gascoyne SA3 are aged **65 years and over**

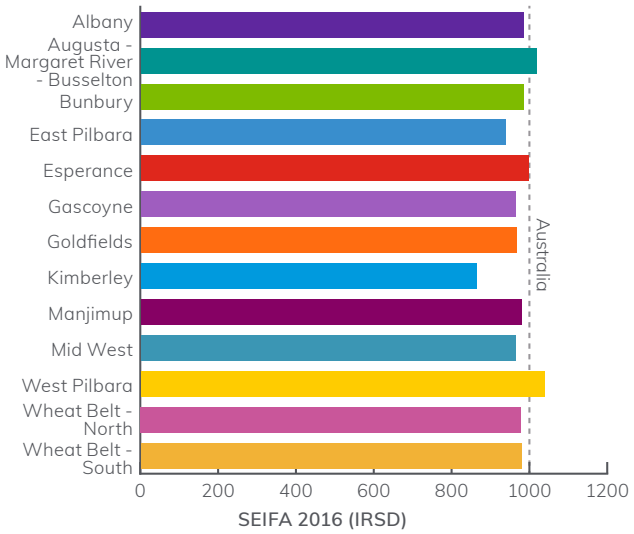
Gascoyne SA3 has the **lowest ratio** of **residential aged care beds** to population in the state

There are an estimated **8,865 Aboriginal people** residing in the region

37% of Aboriginal people in Mid West SA3 and **25%** in Gascoyne SA3 received an **Indigenous-specific health check** through Medicare in 2019-20

The Midwest region has higher levels of socioeconomic disadvantage (IRSD=963) compared to the state (IRSD=1016) (Public Health Information Development Unit, 2021b). About 12% of people in Gascoyne SA3 and 9.5% in Mid West SA3 are Aboriginal (Public Health Information Development Unit, 2022).

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- About 1.6% of people in Gascoyne SA3 (141 people) and 0.4% of people in Mid West SA3 (190 people) were born overseas and have poor English proficiency compared to 1.8% of people across the state (44,521 people) (Public Health Information Development Unit, 2022).
- About 3.3% of people in Gascoyne SA3 and 5.1% of people in Mid West SA3 have a profound or severe disability compared to 4.6% across the state (Australian Bureau of Statistics, 2021a).
- About 8.1% of people in Gascoyne SA3 and 10% of people in Mid West SA3 provide unpaid assistance to people with a disability compared to 11% across the state (Public Health Information Development Unit, 2022).
- About 24% of children in Gascoyne SA3 and 27% of children in Mid West SA3 were developmentally vulnerable on one or more domains compared to 19% across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 331 people in Mid West SA3 and 122 people in Gascoyne SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 35% of homeless people in Mid West SA3 and 16% in Gascoyne SA3 were living in 'severely' crowded' dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020)A. LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic

obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Midwest.

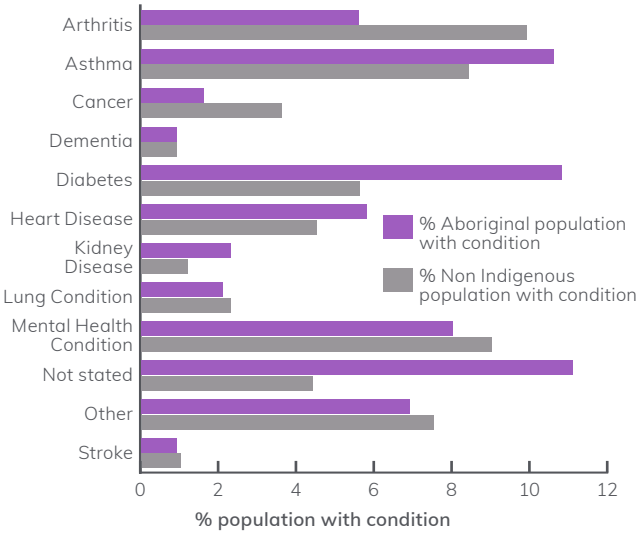
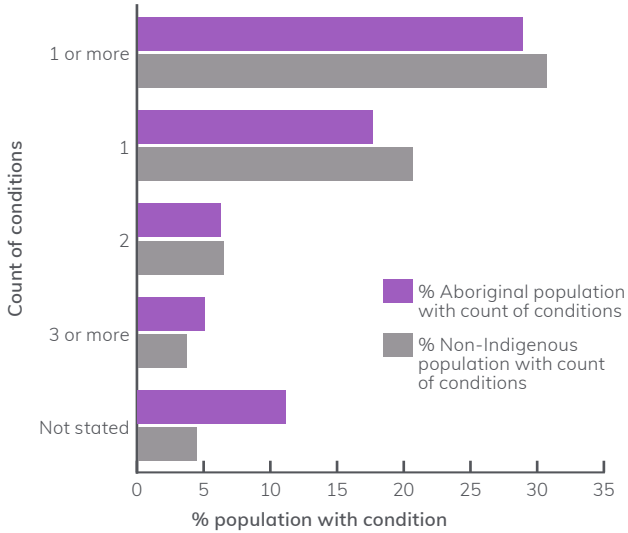


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Midwest.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). The Midwest region had prevalence rates of risk factors that were significantly higher than state rates. In 2017-18, children aged 2-17 years in Mid West SA3 were significantly more likely to be obese (ASR=11%) compared to the state (ASR=7.9%) (data were unavailable for Gascoyne SA3 and its constituent population health areas Exmouth PHA and Carnarvon PHA) (Public Health Information Development Unit, 2021b). Moreover, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that estimated prevalence rates of obesity among adults aged 16 years and over were significantly higher at 37% in Mid West SA3 compared to 30% across the state (Epidemiology Branch, 2021a). Mid West SA3 also had significantly higher rates of high blood pressure (24%) and people who did no leisure time physical activity (21%) (prevalence rates were not statistically significant in Gascoyne SA3).

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

General Practice Incentives Program Quality Improvement Incentive (PIP QI)

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with their weight classification recorded within the last 12 months, the proportion of patients with information available to calculate risk of cardiovascular disease (CVD), and the proportion of patients with diabetes that have a HbA1c measurement recorded. PIP QI data indicated the following for the Midwest region (18 practices) compared to the state (497 practices).

- The percentage of general practice records for clients aged 15 years and over that did not have a weight classification recorded within the last 12 months was 66% across the region compared to 76% across the state.
- The percentage of general practice records for clients aged between 45-74 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 26% across the region compared to 43% across the state.
- The percentage of general practice records for clients with a diagnosis of diabetes that did not have a HbA1c measurement result recorded within the last 12 months was 25% across the region compared to 28% across the state.

We note that PIP QI data include private general practices only and do not include GP services provided by non-government organisations.

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Midwest region had a 1.3 times higher rate of fatal burden, but the same rate of non-fatal burden compared to the metropolitan regions. Chronic disease accounted for a substantial proportion of the burden of disease. Coronary heart disease, COPD and lung cancer were among the leading five causes of burden for males and females, while back pain/problems were the second leading cause for females.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the Midwest region, age-adjusted prevalence rates in Gascoyne and Mid West SA3s respectively were 15% and 18% for one long-term condition and 6.7% and 8.9% for two or more conditions. Compared to the state, Mid West SA3 had relatively higher rates of diabetes (ASR=5.2% compared to 4.5%) and kidney disease (ASR=1.2% compared to 0.8%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

Across the state in 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1109 and the highest rates were for COPD (232), congestive cardiac failure (220), and iron deficiency anaemia (188) (Australian Institute of Health and Welfare, 2019). Compared to the state, PPHs for total chronic conditions were higher in Mid West SA3 (1438) and Gascoyne SA3 (1511) and the top three conditions in both areas were COPD, congestive cardiac failure, and diabetes complications, which were above state rates.

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, there were three population health areas (PHAs) in the region that were hotspots for chronic conditions, as follows.

- Carnarvon PHA: diabetes complications
- Geraldton/Geraldton – East PHA: angina, congestive cardiac failure, COPD, diabetes complications, and rheumatic heart diseases
- Meekatharra PHA: total chronic conditions, angina, COPD, diabetes complications, and rheumatic heart diseases.

Management of chronic disease in primary care

Between 2018-19 and 2020-21, percentage-of-population utilisation of GP chronic disease management plans (CDMPs) decreased from 19% to 15% in Mid West SA3 and increased from 7.5% to 9.4% in Gascoyne SA3 (Australian Institute of Health and Welfare, 2021d). However, utilisation in Gascoyne SA3 was still considerably below the national rate for SA3s in remote areas, which remained stable at 12% over the same period.

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years. About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years (Department of Health, 2021b).

In the Midwest region, childhood immunisation rates in Mid West SA3 were below target, except for children at 5 years (Department of Health, 2021b).

About 94.5% of children were fully immunised at 1 year, 91.1% at 2 years, and 96.2% at 5 years. In Gascoyne SA3, corresponding rates were 95.4% at 1 year, 93.5% at 2 years, and 95.5% at 5 years. The lower rate at 2 years in both SA3s suggests that interventions should be targeted to increase immunisation coverage for this age group.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicate that compared to the state, cancer screening participation rates were low in Gascoyne SA3. Participation rates were 45% in Mid West SA3 and 38% in Gascoyne SA3 for bowel cancer screening, 55% in Mid West SA3 and 42% in Gascoyne SA3 for breast cancer screening, and 44% in Mid West SA3 and 38% in Gascoyne SA3 for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was only 68 years in Gascoyne SA3 (50% of people who died were younger than 68 years) and 76 years in Mid West SA3 compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, age-standardised death rates per 100,000 from avoidable causes in Gascoyne SA3 (179) and Mid West SA3 (172) were significantly higher than the state rate (122) (Public Health Information Development Unit, 2021b). Mid West SA3 had significantly higher rates for the following selected causes (ASR per 100,000): respiratory system diseases (14), COPD (14), circulatory system diseases (48) and ischaemic heart disease (32). Data were unavailable or not statistically significant for Gascoyne SA3 and its constituent population health areas Exmouth PHA and Carnarvon PHA due to small sample sizes and high levels of variability around estimates.

Utilisation of primary care services

The COVID-19 pandemic impacted the utilisation of primary care services across the state. Between 2018-19 and 2020-21, visits to GPs decreased from 77% to 74% of the population in Gascoyne SA3 and from 88% to 86% in Mid West SA3, above the national rate for SA3s in remote areas (73%) (Australian Institute of Health and Welfare, 2021d).

The percentage utilising after-hours GP services in Gascoyne SA3 also decreased from 17% to 15%; however, Mid West SA3 had a very low rate, increasing from only 4.3% to 5.6% over the same period, well below the national rate for remote areas (8.2%). In 2020-21, utilisation of GP health assessments was 6.8% in Gascoyne SA3 and 8.2% in Mid West SA3 compared to 10% nationally for remote areas. We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region.

In 2020-21, percentage of population utilisation of Medicare-subsidised allied health services was relatively low in Gascoyne SA3 (21%) and high in Mid West SA3 (34%) compared to the national rate for SA3s in remote areas (26%) (Australian Institute of Health and Welfare, 2021d). About 18% of the population in Gascoyne SA3 and 28% of the population in Mid West SA3 utilised optometry (2% nationally in remote areas). We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations.

Gascoyne SA3 had a relatively low percentage of population utilisation of nurses and Aboriginal Health Workers at 9.4% compared to 13% in Mid West SA3 and 14% nationally in remote areas (Australian Institute of Health and Welfare, 2021d). Data on utilisation of nurse practitioners in the region was unavailable in 2018-19.

Interviews with local stakeholders indicated that access to bulk billing GPs was limited and that this may be contributing to high rates of emergency department presentations in the region.

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. Irwin SA2 and Northampton – Mullewa – Greenough SA2 in Mid West SA3 were in the first decile (access relative to need was lower than 90% of SA2s in the state) for access to any GP as well as bulk billing GPs, while Morawa SA2 in Mid West SA3 was in the first decile for access to any GP. Geraldton – South SA2, Geraldton – North SA2, and Geraldton – East SA2 were in the fourth decile in terms of access to bulk billing GPs. Although Exmouth SA2 in Gascoyne SA3

had a relatively high access to any GP, it was in the first decile for access to bulk billing GPs, indicating that access may be limited by the ability to make a co-payment.

Workforce

General practitioners (GPs)

In 2020, Mid West SA3 had 50 GP full-time equivalent (FTE) or 0.9 FTE per 1000 residents and Gascoyne SA3 had 8.9 GP FTE or 1.0 FTE per 1000 residents compared to 1.1 FTE per 1000 across the state[2]. The ratio of vocationally registered (VR) to non-VR GPs was very high in Mid West SA3 (40) compared to the state (12), in contrast to Gascoyne SA3 (3.8), which had one of the lowest ratios in the state.

Primary care nurses

The Midwest region had a higher relative supply of primary care nurses compared to the state. In 2019, Gascoyne SA3 had 23 primary care nurse full-time equivalent (FTE) or 2.4 FTE per 1000 residents and Mid West SA3 had 123 FTE or 2.3 FTE per 1000 residents compared to 1.7 FTE per 1000 across the state[2].

Aged Care

In 2019, there were 1424 people aged 65 years and over in Gascoyne SA3 and 8962 in Mid West SA3 representing 15% and 17% of the population, respectively. This is projected to increase to 19% of the population in Gascoyne SA3 and 23% in Mid West SA3 by 2030 compared to 18% across the state and 20% across Country WA PHN (Public Health Information Development Unit, 2021b).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Midwest health region, coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 28% of people aged 65 years and over across the Midwest region had one long-term health condition (including both physical and mental health conditions) and 26% had two or more co-morbid conditions compared to 31% and 26%, respectively across the state. The most common types of conditions among older adults in the region were arthritis (26%), heart disease (14%), and diabetes (15%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Midwest region, there were 855 people with dementia, with the highest number in Geraldton SA2 (243) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level. Medicare items are available for in-depth assessment of a patient 75 years and over. This provides a structured way of identifying health issues and conditions that are potentially preventable or amenable to interventions to improve health and quality of life. Data for participating general practices (18 in total) indicate that Mid West SA3 has a similar rate of people over 75 accessing health assessments as the Country WA PHN, at 19%.

Aged care services

The aged care system in Australia offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. Across Australia, more than two-thirds of people using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021).

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

In Mid West SA3, home care services are provided by religious and charitable organizations. There were no organizations providing home care in the Gascoyne SA3. As at December 2020, there were 194 people in a HCP in the Midwest Aged Care Planning Region (ACPR) (Department of Health, 2021a). An additional 133 people were waiting for a HCP with 26 people (20%) requiring the highest level of care (level 4).

Gascoyne SA3 had a very low residential (RACF) beds-to-population ratio. The number of residential beds to 1000 people aged 70 years and over was only 23 in Gascoyne SA3 and 68 in Mid West SA3 compared to 63 in Country WA PHN and 72 across the state (Australian Institute of Health and Welfare, 2021b). There were only two residential aged care facilities in the Gascoyne but eight in the Mid West SA3.

In 2019, Mid West SA3 had 86 aged care nurse full-time equivalent (FTE) or 14 FTE per 1000 people aged 70 years and over and Gascoyne SA3 had 9.3 FTE or 11 FTE per 1000 compared to 12 FTE per 1000 across the state[2].

Alcohol and Other Drugs

In Country WA, residents in Gascoyne (39.3%) and Mid West (33.1%) SA3s were at a statistically significantly greater long-term risk from alcohol consumption, with the second and fifth highest rates recorded in WA respectively (Epidemiology Branch, 2021b). Current smoking rates in Gascoyne and Mid West SA3s were 11.5% and 13.7% respectively, compared to 11.2% in WA (Epidemiology Branch, 2021b).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with a smoking status and proportion of patients with an alcohol consumption status. Across the region (18 practices), 29% of GP patient records did not have a smoking status recorded (37% across the state) and 45% did not have an alcohol consumption status recorded (46% across the state). We note that these data include only private general practices and do not include health services provided by non-government organisations.

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018 of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. In 2014-2018 Mid West and Gascoyne SA3s recorded a rate of more than 10.0 deaths per 100,000 unintentional drug-induced deaths. (Penington Institute, 2020).

Services

Drug and Alcohol services are provided by the WA Country Health Service and the not-for-profit organisations. The WA Country Health Service manages the Midwest Community Alcohol and Drug Service which is based in Geraldton. The service provides a fortnightly outreach service to Kalbarri, Dongara, Northampton, Mullewa, Morawa, Three Springs and Eneabba. Once a month the team travels to Yalgoo, Cue, Mt Magnet, Meekatharra and Wiluna.

The not-for-profit service provider Hope Community Services provides residential drug and alcohol services and transitional housing in Geraldton. Aboriginal Community Controlled Health Services provide alcohol and other drug counselling services in Geraldton and Wiluna.

Mental Health

Mental health was the second leading cause of disease burden in the Midwest region contributing 13% to the total disease burden for the region (Department of Health Western Australia, 2021).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

In WA, 8.5% of people have been diagnosed with depression, 9.3% with anxiety and 8.8% experienced high psychological distress. The Mid West and Gascoyne SA3s have similar rates, at 8.2% for depression, 7.7% for anxiety and 9.0% for psychological distress in Mid West and 5.0% for anxiety and 5.7% for psychological distress in Gascoyne. Prevalence of depression was suppressed for the Gascoyne region due to a small sample size (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 5.1% and 6.1% in Gascoyne SA3 and 8.5% and 10% in Mid West SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Suicide impacts the community in the Midwest, with farmers, fishers, men and the Aboriginal population identified as at-risk populations (Midwest Suicide Prevention Trial). Sixty-eight people died from suicide in the Midwest between 2014 to 2018 representing 3.4% of all deaths in the region. In the Gascoyne

SA3, 11 people died from suicide in the Gascoyne between 2014 to 2018 representing 4.5% of all deaths. Deaths from suicide were above state rates (15 per 100,000) in the Midwest (24 per 100,000) (Australian Institute of Health and Welfare, 2020c).

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. In the Midwest 6% of the population reported that they thought seriously about ending their own lives. In the Gascoyne this was 4%. Across WA, 5% of people experienced suicidal ideation (Epidemiology Branch, 2021b).

Self-harm is a strong risk factor for suicide. Self-harm hospitalisations in the Midwest were above state rates. Self-harm hospitalisations were higher for females and for people aged 0-24 years (Australian Institute of Health and Welfare, 2020c).

The Midwest was identified as one of twelve locations across Australia to participate in the National Suicide Prevention Trial. The Midwest Suicide Prevention Trial is focusing on the Aboriginal community and men aged 25 to 54, specifically farmers, fishers and fly in, fly out (FIFO) workers.

Youth mental health

Suicide and self-inflicted injuries were the second leading cause of disease burden for 15 to 24-year-olds, contributing to 14% of the disease burden for this age group (Department of Health Western Australia, 2021).

Stakeholders have indicated that access to early intervention mental health services is an issue in the Midwest particularly for youth.

The 'missing middle' is a term used to describe clients who are too unwell to be effectively treated in the primary mental health system but are not unwell enough to be treated in the state-based mental health system (headspace, 2019). Stakeholders in the Mid-west have identified the 'missing middle' as a particular issue for youth mental health services in the Mid-west.

Hospital admissions for self-harm may indicate a lack of access to mental health services. In the Midwest people aged between 0-24 were hospitalized for self-harm at rates above the State rate (Australian Institute of Health and Welfare, 2020c).

Services

The Midwest has a low supply of mental health professionals. In 2020-21, less than 1% of the population in the Midwest accessed a clinical psychologist through the Better Access MBS Program; however, 6.7% of people in Mid West SA3 and 3.4% of people in Gascoyne SA3 (up from 2.3% in 2018-19) had a GP Mental Health Treatment Plan (Australian Institute of Health and Welfare, 2021d). These figures indicate insufficient access to rebated psychological services and a reliance on services provided by the State and not-for-profit sector.

Mental health services in the Midwest are provided by the WA Country Health Service and not-for-profit organisations. The WA Country Health Service provides adult community mental health services and child and adolescent mental health services in Geraldton, Carnarvon and Meekatharra with the option of outreach visits by appointment.

In Geraldton, not-for-profit services include Helping Minds, 360 Health & Community providing psychological services and suicide prevention programs, Ruah Community Services providing mental health support and recovery services, headspace providing services for youth and Fusion Australia providing residential rehabilitation services. Centacare provides counselling services and emergency relief. Private psychology services are available in Geraldton; however, access is limited in other areas.

Stakeholders have indicated that demand for mental health services in Geraldton is high with private providers and the not-for-profit sector reporting large client waitlists.

Aboriginal Health

In 2016, it was estimated that there were 8,865 Aboriginal people residing in the Midwest region (ERP 2016). Yamatji is the name used to identify Aboriginal people living in the Midwest region of Western Australia. Approximately 10% of the total population are Yamatji people who live mostly in Geraldton and Carnarvon (Australian Bureau of Statistics, 2016). Many Yamatji people also live in the smaller towns of Mt Magnet, Shark Bay, Mullewa, Cue and Gascoyne Junction, as well as in remote communities such as Meekatharra, Burringurrah, Yulga Jinna, Barrell Well, Wandanooka, Mungullah, Buttah Windee and Pia Wadjarri (Telethon Kids Institute, 2021).

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question "Has the person been told by a doctor or nurse that they have any of these long-term health conditions?".

In the Midwest region, more Aboriginal people reported having the following conditions compared to non-Aboriginal people:

- 10.6% of Aboriginal people reported having Asthma compared to 8.4% of non-Aboriginal people.
- 5.8% of Aboriginal people reported having Heart Disease compared to 4.5% of non-Aboriginal people.
- 10.8% of Aboriginal people reported having Diabetes compared to 5.6% of non-Aboriginal people.
- 2.3% of Aboriginal people reported having Kidney disease compared to 1.2% of non-Aboriginal people.

Still in the Midwest, 1,118 (17.6%) Aboriginal persons responded as having 1 Chronic condition, 396 (6.2%) have two Chronic conditions, while 319 (5%) have three or more Chronic conditions, 3809 (60.1%) have no Chronic condition, while 705 (11.1%) didn't respond to the question (Australian Bureau of Statistics, 2021a).

The Yamatji people experience high levels of disadvantage in the Midwest with high levels of unemployment, welfare dependence, lower levels of education and poorer housing suitability. The Indigenous Relative Socioeconomic Outcome Index score (IRSEO) in the region ranges from 65 in Irwin – Morawa (the least disadvantaged area) to 84 in Carnegie South – Mount Magnet and Meekatharra – Karalundi (the most disadvantaged areas). In Meekatharra – Karalundi, 48% of dwellings were rented from the government housing authority, 19% required extra bedrooms and 65% had no internet connection (Public Health Information Development Unit, 2021a).

Yamatji children in the Midwest are also impacted by disadvantage. Sixty one percent of Yamatji children in Carnarvon - Mungullah and 54% of Yamatji children living in Geraldton were developmentally vulnerable on one or more domains according to the Australian Early Development Census (Public Health Information Development Unit, 2021a). Fifty three percent of Aboriginal mothers smoked during pregnancy in Carnarvon and 49% in Geraldton. Fourteen percent of babies born to Aboriginal mothers residing in Geraldton were born with a low birth weight. This was 12% for babies born to Aboriginal mothers in Carnarvon (Public Health Information Development Unit, 2021a).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. PIP QI data indicated that the proportion of general practice records for Indigenous clients aged between 35-44 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 45% across the region (18 practices) compared to 62% across the state (497 practices). We note that these data include only private general practices and do not include health services provided by non-government organisations. The percentage of GP patient records with Aboriginal status not recorded was 28% across the region compared to 33% across the state.

Housing

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of Meekatharra-Karalundi (38%), Shark Bay-Coral Bay-Upper Gascoyne (32%) and Carnarvon-Mungullah (28%) (Public Health Information Development Unit, 2021a).

Child immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In the Midwest region, childhood immunisation rates below target for children aged 2 years were 74% in Carnarvon-Mungullah, 76% in Exmouth-Ashburton, 81% in Geraldton and 83% in Carnegie South – Mount Magnet IAREs. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services (Public Health Information Development Unit, 2021a).

Aboriginal people in Country WA PHN had a higher rate of non-urgent ED presentations (10,742 ASR per 100,000 people per year) compared to WA rates (7,742). In Country WA, top major diagnosis chapters included factors influencing health status (3,626 ASR per 100,000) and injury and poisoning (2,763 ASR per 100,000) (Public Health Information Development Unit, 2021a).

Non-urgent ED presentations for Aboriginal people in Geraldton in 2017/18 were statistically significantly higher for the diagnostic category of factors influencing health status and contact with health services. This usually indicates that these presentations were attributed to psychosocial and economic factors.

Avoidable deaths by selected causes

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significantly higher in the following regions (ASR per 100,000 Aboriginal persons) (Public Health Information Development Unit, 2021a):

- Selected external causes (falls, fires, burns, suicide and self-inflicted injuries): Geraldton (61 per 100,000).
- External causes (transport accidents, accidental drowning and submersion): Exmouth - Ashburton (87 per 100,000).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 the following PPHs were statistically significantly higher in the IAREs of the Midwest region (Public Health Information Development Unit, 2020).

PPHs for chronic disease:

- Chronic angina: Carnegie South – Mount Magnet (513 per 100,000) and Geraldton (283)
- Asthma: Carnarvon - Mungullah (634 per 100,000) and Meekatharra – Karalundi (566)
- Congestive cardiac failure in Carnegie South – Mount Magnet (809 per 100,000), Meekatharra – Karalundi (794) and Exmouth – Ashburton (785)
- Diabetes: Carnegie South – Mount Magnet (1,564 per 100,000), Meekatharra – Karalundi (1,168) and Central West Coast (965)
- COPD: Geraldton (731 per 100,000).

PPHs for acute conditions:

- Acute cellulitis: Carnegie South – Mount Magnet (2,086 per 100,000), Carnarvon - Mungullah

(1,869) and Meekatharra – Karalundi (1,316)

- Acute dental: Carnarvon - Mungullah (696 per 100,000) and Geraldton (596)
- Acute ear, nose and throat infections: Meekatharra – Karalundi (1,384 per 100,000) and Carnegie South – Mount Magnet (1,019)
- Acute urinary tract infections (including pyelonephritis): Carnegie South – Mount Magnet (989 per 100,000), Carnarvon - Mungullah (631) and Geraldton (600) (Public Health Information Development Unit, 2020).

There were no vaccine-preventable conditions with statistically significantly elevated rates in the Midwest region.

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Aboriginal and Torres Strait Islander people can access specific services aimed at Closing the Gap in health outcomes. It is important that General Practices ask all patients if they identify as Aboriginal and/or Torres Strait Islander. This assists with ensuring patients are provided with the option of accessing information and services specifically designed to meet their needs.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c). In 2019-20, the proportion of the Aboriginal population who received an Indigenous Health Check was 24.5% in Gascoyne and 37.4% in Mid West SA3s compared to 25.1% in Country WA PHN. Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.2% in Mid West, 0.5% in Gascoyne, and 0.6% across the state. During 2018-19, the proportion of patients who received follow-up services was lower in Mid West (34.5%) and Gascoyne (43.9%) compared to the state (46.8%) (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Services

Aboriginal people living in the Midwest region can access primary care services through general practice, Aboriginal Community Controlled Health Services, mainstream primary care services and the hospital sector. There are three Aboriginal Medical Services in the Midwest.

Digital Health

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. In 2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

Pre-COVID (2018-19) rates of MBS utilisation of telehealth were very low across Australia, at 0.21 per 100 people. However, the Midwest appears to

have been an early adopter of telehealth services with the second highest pre-COVID-19 MBS utilisation rate for telehealth services (1.07 per 100 resident population). COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The Midwest is located in the western middle section of WA and makes up one quarter of the state's total land mass. Over half of the population resides in Geraldton with other population hubs dispersed throughout the region. The Midwest has high levels of socioeconomic disadvantage compared to the rest of WA, indicating the region is at greater risk of having poor health outcomes.

The dominant health concerns in the Midwest are mental health, chronic disease and alcohol consumption. Mental ill-health is the second leading cause of disease burden in the Midwest and is a continuing priority for the region. Stakeholders have indicated that access to early intervention mental health services is a key issue in the Midwest, particularly for youth. Stakeholders have also indicated a lack of services for clients who are too unwell to be effectively treated in the primary mental health system but are not unwell enough to be treated in the state-based mental health system the "missing middle".

The population in the Midwest has high prevalence rates of risk factors for chronic disease, particularly obesity and high blood pressure where both rates were significantly greater compared to the state. Chronic disease accounted for a substantial proportion of the burden of disease in the Midwest with PPH rates that were above state rates for COPD, congestive cardiac failure and diabetes complications.

Alcohol consumption is another key concern, with the Gascoyne and Midwest recording the second and fifth highest rates of residents at greater long-term risk from alcohol consumption in the state. This is reflected in the region's higher rates of ED presentations related to AOD when compared to the state.

Workforce and access to services is a continuing issue for all rural communities and the Midwest is similarly impacted. Many towns have limited access to General Practitioners and allied health despite high needs in the community. The flow on effect has resulted in significant wait times to see a GP, which is a deterrent for people requiring regular or timely access to a GP. More specifically, in Geraldton there are currently no bulk billing GPs and only one after-hours service, which could be a contributing factor to the high number of lower urgency ED presentations in the region.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
Mental Health is the second leading cause of disease burden in the Midwest.	Access to mental health services is impacted by workforce shortages and service models that are not adaptable to regional and rural areas.	Improve access to mental health services in the Midwest.	Mental Health	Workforce
Mental Health is the second leading cause of disease burden in the Midwest.	Access to mental health services is impacted by the "missing middle" (people whose mental health needs are not being met in either primary care or the state funded mental health system). A lack of moderate to severe services.	Ensure integrated and stepped care services are available for people experiencing mental health issues across the spectrum.	Mental Health	System integration
Chronic disease accounted for a substantial proportion of the burden of disease.	PPH rates that were above state rates for COPD, congestive cardiac failure and diabetes complications.	Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	Population Health	Chronic conditions
Regions in the Midwest have a high need but low access to GPs and bulk billing GPs (Access Relative to Need)	The Mid west has high rates of non-urgent ED presentations.	Investigate successful alternatives to the provision of primary care in Emergency Departments in country regions.	Population Health	Appropriate care (including cultural safety)
People living in the Midwest are at risk of long-term harm from alcohol consumption.	There are high rates of ED presentations related to AOD consumption.	Improve access to screening and AOD treatment services	Alcohol and other drugs	Access

Opportunities and Options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Improve access to mental health services in the Midwest.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals.	Non-Government Organisations Community Mental Health Services General Practice
Ensure integrated and stepped care services are available for people experience mental health across the spectrum.	MH4 Formalised partnerships with other regional service providers to support integrated regional planning and service delivery.	Non-Government Organisations Community Mental Health Services General Practice Local Hospital Networks
Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P12 Decrease in PPH rates. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing rate of PPH.	General Practice Allied Health Providers
Investigate successful alternatives to the provision of primary care in Emergency Departments in country regions.	P8 Decrease in GP not available or waiting time too long as reasons for why patient attended ED.	General Practice Local Hospital Networks
Improve access to screening and AOD treatment services	AOD1 Rate of drug and alcohol commissioned providers actively delivering services.	General Practice Mental Health Commission WANADA

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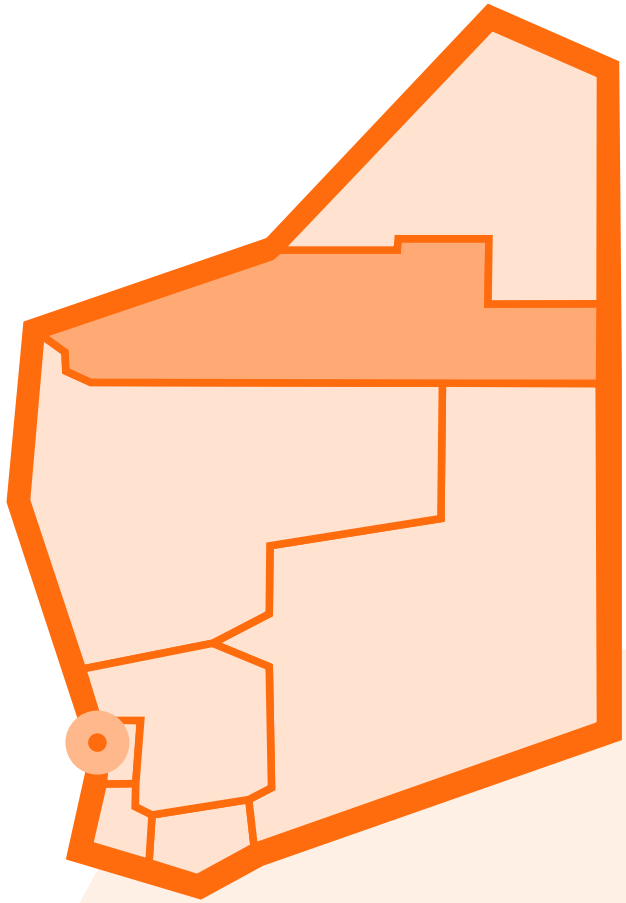
Pilbara

Needs Assessment 2022-2024



Pilbara

Population Demographics

The Pilbara covers around 506,000 square kilometres and is Western Australia's second most northern region. It is bordered by the Indian Ocean to the west and extending across the Great Sandy Desert to the Northern Territory border in the east. The main population centres of the Pilbara are Port and South Hedland, Karratha, and Newman.

The Pilbara region is divided into two main statistical areas:

- West Pilbara includes the towns of Karratha, Dampier, Wickham, Onslow, Roebourne, Tom Price, and Paraburdoo.
- East Pilbara includes the towns of Port Hedland, Newman, Jigalong, Nullagine, and Marble Bar.

In 2021, the population of Country WA PHN was 529,933 people compared to the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). The total population of the Pilbara is 55,037 with 25,443 people living in East Pilbara SA3 and 29,594 in West Pilbara SA3.

Injury is the leading cause of disease burden

42% of adults aged 16+ years in East Pilbara SA3 ar **obese**

19% of adults aged 16+ years in West Pilbara SA3 **smoke**

2ND

Mental ill-health is the **second** leading cause of disease burden

One of the **lowest rates** of Medicare mental health - related services

39% of adults aged 16+ years are at high risk of long-term harm from **alcohol consumption**

4% of people in East Pilbara SA3 and 3.5% in West Pilbara SA3 are **aged 65 years and over**

Severe tooth loss is among the leading causes of disease burden among people aged 65 years and over

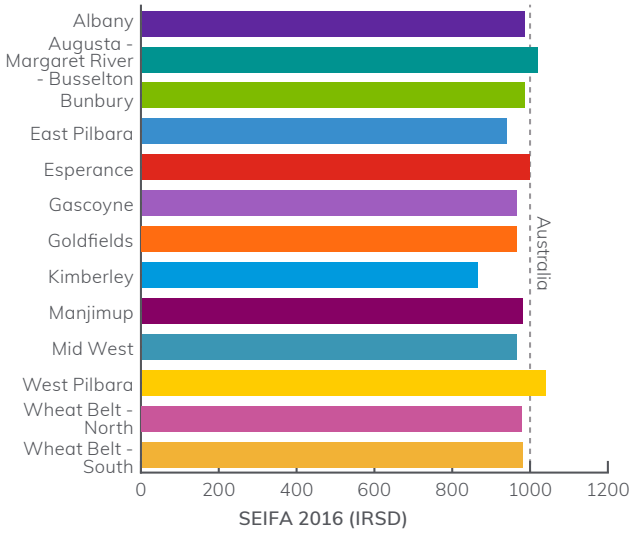
There are an estimated **11,731 Aboriginal people** residing in the region

20% of Aboriginal people in East Pilbara SA3 and 26% in West Pilbara SA3 received an **Indigenous-specific health check** through Medicare in 2019-20

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

The Pilbara includes areas of socioeconomic disadvantage, with a SEIFA score of 937 for the East Pilbara and a 1038 for the West Pilbara compared to the Australian mean of 1000 and WA's score of 1016 (Public Health Information Development Unit, 2021b). About 18% of people in East Pilbara SA3 and 11% of people in West Pilbara SA3 are Aboriginal (Public Health Information Development Unit, 2022).

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.5% of people in the Pilbara were born overseas and have poor English proficiency (244 people) compared to 1.8% of people across the state (44,521 people) (Public Health Information Development Unit, 2022).
- About 1.8% of people in East Pilbara SA3 and 1.4% of people in West Pilbara SA3 have a profound or severe disability compared to 4.6% across the state (Australian Bureau of Statistics, 2021a).
- About 5.9% of people in East Pilbara SA3 and 5.7% of people in West Pilbara SA3 provide unpaid assistance to people with a disability compared to 11% across the state (Public Health Information Development Unit, 2022).
- About 28% of children in East Pilbara SA3 and 20% of children in West Pilbara SA3 were developmentally vulnerable on one or more domains compared to 19% across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 465 people in East Pilbara SA3 and 199 people in West Pilbara SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 69% of homeless people in East Pilbara SA3 and 52% in West Pilbara SA3 were living in 'severely' crowded' dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates

compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Pilbara.

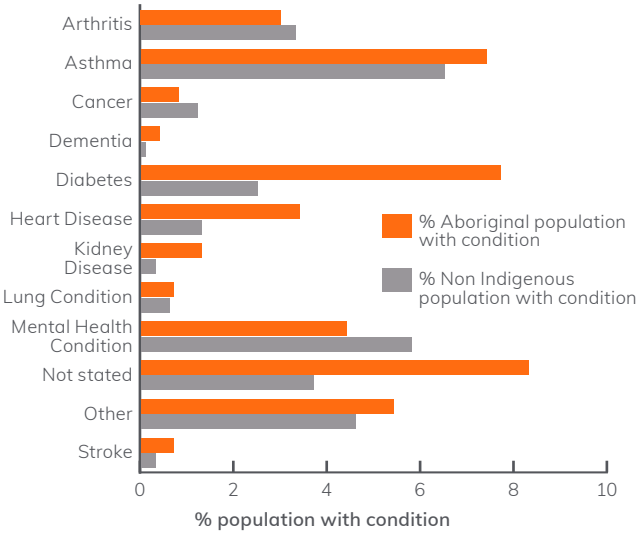
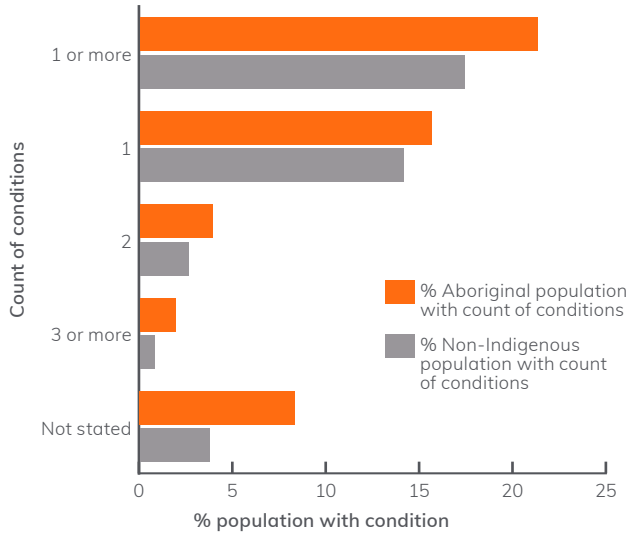


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Pilbara.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). Some parts of the Pilbara have low rates of obesity among children. In 2017-18, children aged 2-17 years in Port Hedland and South Hedland population health areas (PHAs) were significantly less likely to be obese (ASR=5.1% and 5.3% respectively) compared to the state (ASR=7.9%) (Public Health Information Development Unit, 2021b). However, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that, compared to the state, the estimated prevalence rate of obesity among adults aged 16 years and over was significantly higher in East Pilbara SA3 (42% versus 30%), while West Pilbara SA3 had a significantly higher rate of smoking (19% versus 11%) (Epidemiology Branch, 2021a).

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

Stakeholders have indicated that food security impacts communities in the Pilbara. The 2013 Food Access and Cost Survey Report found food costs significantly increased with distance from Perth. The largest differences in food cost between Perth and remote areas were for fruit (37.9% more), non-core foods (31.0% more) and dairy (30.6% more) (Pollard et al., 2015).

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Pilbara region had the same rate of fatal burden, but a 1.4 times higher rate of non-fatal burden compared to the metropolitan regions. Overall, injury was the leading cause of burden, representing 17% of the total burden in the region. Chronic disease also accounted for a substantial proportion of the burden of disease. The Pilbara had the highest burden from gastrointestinal diseases in the state, accounting for 4.7% of the total burden in the region. Coronary heart disease and back pain/problems were among the leading five causes of burden for males and females, while asthma was the fifth leading cause for females. For people aged 65 years and over in the Pilbara, severe tooth loss was the third leading cause of burden, accounting for 5.4% of total burden for this age group in the region.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the Pilbara region, age-adjusted prevalence rates were 14% for one long-term condition and 5.3% for two or more conditions. Compared to the state, East Pilbara SA3 had relatively high rates of diabetes (ASR=5.2% compared to 4.5%) and kidney disease (ASR=1.0% compared to 0.8%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

Across the state in 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1109 and the highest rates were for COPD (232), congestive cardiac failure (220), and iron deficiency anaemia (188) (Australian Institute of Health and Welfare, 2019). In East Pilbara SA3, the rate of PPHs for total chronic conditions (2964) was 2.7 times the state rate, while the rate for COPD (1410) was more than six times the state rate. In contrast, West Pilbara SA3 had a lower rate for total chronic conditions (1034) as well as for COPD (167) compared to the state. However, rates were higher for diabetes complications (259) and angina (203).

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years. In the five years from 2012-13 to 2016-17, there were five population health areas (PHAs) in the Pilbara that were hotspots for chronic conditions (Public Health Information Development Unit, 2020). South Hedland PHA had the highest number of preventable hospitalisations for chronic conditions in the region and was a hotspot for total chronic conditions as well as for asthma, congestive cardiac failure, COPD, diabetes complications, and rheumatic heart disease. Ashburton PHA and Newman PHA were hotspots for COPD, while Port Hedland PHA and Roebourne PHA were hotspots for bronchiectasis.

Management of chronic disease in primary care

From 2018-19 to 2020-21, percentage of population utilisation of GP chronic disease management plans (CDMPs) in the region did not change substantially, from 5.0% to 4.7% in East Pilbara SA3 and from 4.5% to 5.2% in West Pilbara SA3 (Australian Institute of Health and Welfare, 2021d). Utilisation was still considerably below the national rate for SA3s in remote areas (12%). Feedback from local stakeholders suggests that this may be an indication of a lack of allied health services in the region.

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years (Department of Health, 2021b). About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years.

In the Pilbara region, childhood immunisation rates were below target for all three age groups. About 94.0% of children were fully immunised at 1 year, 88.7% at 2 years, and 94.4% at 5 years. The lower rate at 2 years suggests that interventions should be targeted to increase immunisation coverage for this age group. Feedback from local stakeholders suggests that this may reflect capacity shortages among child health nurses in the Pilbara.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicate that compared to the state, cancer screening participation rates were low across the Pilbara region (based on the patient's place of usual residence). Participation rates were 23% in East Pilbara SA3 and 30% in West Pilbara SA3 for bowel cancer screening, 30% in East Pilbara SA3 and 35% in West Pilbara SA3 for breast cancer screening, and 31% in East Pilbara SA3 and 37% in West Pilbara SA3 for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Feedback from local stakeholders suggested that low rates of cancer screening may be an indication of difficulties accessing services due to long distances and remote geographical locations.

Avoidable mortality

In 2013-17, the median age of death was only 55 years in West Pilbara SA3 (50% of people who died were younger than 55 years) and 59 years in East Pilbara SA3 compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, the age-standardised death rate per 100,000 from avoidable causes in East Pilbara SA3 (176) was significantly higher than the state rate (122) (Public Health Information Development Unit, 2021b). East Pilbara SA3 also had significantly high rates (ASR per 100,000) for diabetes (22), COPD (21), circulatory system diseases (77) and ischaemic heart disease (52), while West Pilbara SA3 had significantly high rates for circulatory system diseases (53) and ischaemic heart disease (38).

Local stakeholders flagged that this may be related to a lack of services providing chronic disease management and follow-up as well as difficulty accessing culturally appropriate services.

Utilisation of primary care services

Interviews with local stakeholders identified issues with access to primary care in the region including workforce shortages, lack of access to bulk billing, appointment wait times and lack of psychosocial support for frequent presenters to ED. Currently, the Town of Port Hedland is experiencing a shortage of GPs, with half the usual number and extensive wait lists, resulting in increased utilisation of the ED for non-urgent care. Data from the Call a Doc service indicates high utilisation between September 2020 to March 2021, which coincides with a critical shortage of doctors in the Hedland area.

The COVID-19 pandemic impacted the utilisation of primary care services across the state. In the Pilbara, percentage-of-population utilisation of Medicare-subsidised primary care services was relatively low, especially in West Pilbara SA3. Between 2018-19 and 2020-21, visits to GPs decreased from 61% to 55% of the population in East Pilbara SA3 and from 56% to 53% in West Pilbara SA3, well below the national rate of 73% for SA3s in remote areas (Australian Institute of Health and Welfare, 2021d).

The percentage utilising after-hours GP services in East Pilbara SA3 decreased substantially from 8.0% to 3.5%; however, West Pilbara SA3 had a very low rate, which remained steady at 4.3% over the same period, well below the national rate for remote areas (8.2%). Similarly, utilisation of GP health assessments was very low at only 3.9% in both sub-regions (10% nationally for remote areas). We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region. Local stakeholders have noted that most general practices in the region are private billing (except health care card holders and children under 16 years) and this may affect uptake of GP services.

In 2020-21, a relatively low percentage of the population utilised Medicare-subsidised allied health services in both East Pilbara SA3 (17%) and West Pilbara SA3 (20%) compared to SA3s in remote areas nationally (26%) (Australian Institute of Health and Welfare, 2021d). About 16% of the population in East Pilbara SA3 and 18% of the population in West Pilbara SA3 utilised optometry (22% nationally in remote areas). We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations.

The region had a very low percentage of population utilisation of nurses and Aboriginal Health Workers at 6.9% in East Pilbara SA3 and 3.9% in West Pilbara SA3 compared to 14% for SA3s in remote areas nationally (Australian Institute of Health and Welfare, 2021d).

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. East Pilbara SA2 in East Pilbara SA3 was in the first decile (access relative to need was lower than 90% of SA2s in the state) for access to any GP as well as bulk billing GPs and Ashburton (WA) SA2 in West Pilbara SA3 was in the first decile for access to bulk billing GPs.

Workforce

General practitioners (GPs)

In 2020, the Pilbara region had the lowest supply of GPs in the state, with only 12 GP full-time equivalent (FTE) in East Pilbara SA3 and 14 FTE in West Pilbara SA3[2]. This represents only 0.5 FTE per 1000 residents in East Pilbara SA3 and 0.4 FTE per 1000 in West Pilbara SA3 compared to 1.1 FTE per 1000 across the state. The ratio of vocationally registered (VR) to non-VR GPs was also very low at only 4.6 in East Pilbara SA3 and 4.0 in West Pilbara SA3 compared to 12 across the state.

Primary care nurses

In 2019, East Pilbara SA3 had 52 primary care nurse full-time equivalent (FTE) or 2.0 FTE per 1000 residents and West Pilbara SA3 had 65 FTE or 1.8 FTE per 1000 residents compared to 1.7 FTE per 1000 across the state[2]. Primary care nurses in East Pilbara SA3 tended to work longer hours, with an average of 37 hours per week compared to 30 hours per week across the state.

Housing issues

Feedback from local stakeholders identified housing-related issues that impact health service provision in the Pilbara. There is currently a housing crisis in the region, with very high rents and difficulty obtaining short-term leases. Moreover, government funding towards subsidised housing has resulted in reduced services, programs, and capacities for critical services in the region. There is a need for stakeholders to work in partnership to ensure that vacant housing is filled and that measures are undertaken to increase investment in housing supply in the medium and long term.

Stakeholders have indicated that environmental health issues related to remote housing are a significant concern in the Pilbara. In particular, the Kunawarritji Community is experiencing ongoing issues related to sewerage and sanitation that affect the health of residents, particularly Aboriginal people.

Aged Care

The Pilbara has a very low proportion of people aged 65 years and over compared to other Country regions. In 2019, there were 1033 people aged 65 years and over in East Pilbara SA3 and 1277 in West Pilbara SA3 representing only 4.0% and 3.5% of the population, respectively compared to 16% in Country WA PHN. This is projected to increase to 6.5% of the population in East Pilbara SA3 and 5.3% in West Pilbara SA3 by 2030 compared to 18% across the state and 20% across Country WA PHN (Public Health Information Development Unit, 2021b).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Pilbara health region, coronary heart disease, dementia and severe tooth loss were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 26% of people aged 65 years and over across the Pilbara region had one long-term health condition (including both physical and mental health conditions) and 19% had two or more co-morbid conditions compared to 31% and 26%, respectively across the state. The most common types of conditions among older adults in the region were arthritis (17%), heart disease (10%), and diabetes (17%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Pilbara region, there were 192 people with dementia, with the highest number in Karratha SA2 (47) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level. Local stakeholders have flagged a lack of GPs providing services in aged care facilities as well as a lack of allied health services as a major concern for aged care in the Pilbara.

Aged care services

In Australia, the aged care system offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care.

More than two-thirds of people across Australia using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021). The relatively large population of Aboriginal people in the Pilbara means that access to aged care may be required at a younger age compared to other regions. Planning for aged care services takes into account the needs of Aboriginal people aged 50 years and over and non-Aboriginal people aged 65 years and over. In 2016, it was estimated that there were 986 Aboriginal people aged 50 years and over in East Pilbara SA3 and 690 in West Pilbara SA3.

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

There were three home care providers in the Pilbara that were charitable and community-based organisations. As at December 2020, there were only 46 people in a HCP in the Pilbara Aged Care Planning Region (ACPR) and an additional 18 people were waiting for a HCP at their approved level (Department of Health, 2021a).

The Pilbara region has a low supply of residential aged care (RACF) beds with only two aged care facilities located in the region (Australian Institute of Health and Welfare, 2021b). In 2020, there were only 56 beds in East Pilbara SA3 and 20 beds in West Pilbara SA3 (the lowest in the state, along with Gascoyne SA3). Stakeholders have noted that aged care facilities have placed caps on beds and are not operating at full capacity due to a lack of GPs visiting aged care facilities.

In 2019, East Pilbara SA3 had 20 aged care nurse full-time equivalent (FTE) or 40 FTE per 1000 residents aged 70 years and over and West Pilbara SA3 had 8.8 FTE or 16 FTE per 1000 compared to 12 FTE per 1000 across the state[2]. The very high ratio in East Pilbara SA3 reflects the small population aged 70 years and over. However, average weekly hours of aged care nurses were 46 hours per week in East Pilbara SA3 compared to 33 hours per week across the state, which indicates a high workload among aged care nurses in the area.

Alcohol and Other Drugs

In Country WA, 38.7% of residents in West Pilbara were at long at long-term risk from alcohol consumption, which was statistically significantly higher than the state rate (26.5%) while the rate for East Pilbara was 28.9% (Epidemiology Branch, 2021b). In the East Pilbara SA3 16.5% of the population are current smokers compared with West Pilbara SA3 with the second greatest proportion of current smokers in Country WA PHN (18.6%) (Epidemiology Branch, 2021b).

In 2019, the Pilbara 'No Wrong Door' Report identified alcohol as the primary drug of concern in the Pilbara region, others include methamphetamines, cannabis and misuse of prescribed medications (WA Primary Health Alliance, 2019).

Stakeholders have identified that alcohol consumption and resulting Family Domestic Violence rates in the Pilbara has increased. Additionally, the AOD use of young people/parental neglect with resulting anti-social behaviours has been noted as concern across the region, with Newman being a hotspot and the focus of a Newman Youth Action Plan led by the District Leadership Group.

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018 of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at-risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. In 2014-2018 the East Pilbara and West Pilbara SA3s had the second highest rate range of 7.5 to 9.9 deaths per 100,000 for unintentional drug-induced deaths (Penington Institute, 2020).

Emergency department presentations

Country regions had higher rates of emergency department (ED) presentations related to alcohol and other drugs (AOD) compared to the state. Between 2018 and 2020, around 0.8% of ED presentations across the region were AOD-related (Department of Health Western Australia, 2021). About 62% of AOD-related presentations were made after hours. Presentation rates per 100k population per year in East Pilbara SA3 (1135) were the second highest in the state and were more than three times the state rate (369). In contrast, the rate in West Pilbara SA3 (366) was similar to the state. We note that some ED presentations may be related to alcohol and other drugs but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of AOD-related ED presentations in the region.

Services

Drug and Alcohol services are provided by Bloodwood Tree Association, Yaandina Community Services includes a residential Rehabilitation facility Turner River, a low medical detox service and Mission Australian. These services are available in the

main population centres of Port Hedland, Karratha, Newman, Onslow, Tom Price and Roebourne. There are limited drug and alcohol services provided in Aboriginal communities across the Pilbara region and stakeholders have identified a need for culturally safe and appropriate Alcohol and Drug services to the communities of Jigalong, Punmu, Kunawarritji and Parrngurr.

Stakeholders have identified an emerging trend in drug use in children under 14 years and as young as 5 years old particularly in Roebourne, South Hedland, Nullagine, Marble Bar, Tom Price, Onslow, Newman and Western Desert Communities. Stakeholders identified a lack of youth-specific services in the Pilbara region for alcohol and other drug use among children, as well as for mothers and babies. Additionally, feedback from stakeholders cited concerns about Fetal Alcohol Syndrome Disorder (FASD) in their communities, a lack of evidence about rates of FASD, and the health needs of children and young people suffering from FASD.

The Pilbara No Wrong Door Report identified major gaps in the provision of timely and consistent drug and alcohol services to smaller geographically isolated towns and the remote Western Desert communities. These gaps constrain access to care for clients. In addition to the service delivery gaps the report also highlighted the need for funding guidelines to allow employment of peer and family peer workers within services (WA Primary Health Alliance, 2019).

Bloodwood Tree Association and Mission Australia are funded by the Mental Health Commission to implement a place based interagency alcohol and other drug management plans. These plans have been developed and are implemented in Port and South Hedland, Newman and West Pilbara. These plans aim to reduce the harms associated with alcohol and drug use through harm reduction and supply and demand reduction strategies.

Mental Health

Mental health was the second leading cause of disease burden in the Pilbara region contributing 16% to the total disease burden for the region (Department of Health Western Australia, 2021). Depressive disorders were the leading cause of mental health burden for women in the Pilbara while suicide and self-inflicted injuries were the second leading cause of mental health burden in males (Department of Health Western Australia, 2021).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

About 7.6% of people living in the East Pilbara have been diagnosed with anxiety and 4.8% with depression while 5.3% scored high or very high psychological distress using the Kessler 10 scale. In the West Pilbara SA3, 6.8% of the population have been diagnosed with anxiety, 7.6% with depression and 6.1% scored high or very high psychological distress. These statistics were similar to state rates, with 8.5% of people have been diagnosed with depression, 9.3% with anxiety and 8.8% experienced high psychological distress (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 4.3% and 5.1% in East Pilbara SA3 and 4.9% and 5.7% in West Pilbara SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Suicide impacts the community in the Pilbara. Between 2014 to 2018, eighteen people died from suicide in the West Pilbara and eighteen people died in the East Pilbara. This represented representing 6% and 5% of all deaths respectively in the region, compared to a statewide rate of 2% (Australian Institute of Health and Welfare, 2020c).

These figures are likely an underestimate of the impact of suicide in the Pilbara. Access to current suicide statistics is delayed by two to three years pending coronial inquest and submission of state suicide statistics to national data repositories. Issues with accessing current suicide statistics has been a barrier to planning and implementing mental health services in the region.

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. Survey participants are asked if they thought seriously about ending their own lives. In the Pilbara 3% of the population thought seriously about ending their own lives. In WA 5% of people experienced suicidal ideation (Epidemiology Branch, 2021b).

Self-harm is a strong risk factor for suicide. Self-harm hospitalisations in the Pilbara were above state rates. Self-harm hospitalisations were higher for females in the Pilbara (Australian Institute of Health and Welfare, 2020c).

Stakeholders have identified service gaps in the provision of care to individuals at risk of suicide and self-harm and their communities and families. These service gaps have been identified as appropriate care coordination services for at risk individuals and post-vention support services for families and communities when a suicide has occurred.

Youth mental health

Suicide and self-inflicted injuries were the leading cause of disease burden for 15 to 24-year-olds contributing to 13% of the disease burden for this

age group in the Pilbara and the West Pilbara had the 3rd highest rates of hospitalisation for self-harm for those aged 0-24 years in the state (Australian Institute of Health and Welfare, 2020c).

Stakeholder feedback has highlighted a shortage of mental health and suicide prevention services targeted to children and youth in the Pilbara region, particularly children less than twelve years of age who are not eligible for headspace outreach services. Stakeholders have also noted a need to embed trauma informed care in the management and treatment of mental health issues for the youth cohort.

Anecdotal evidence has identified an escalation of youth related issues particularly in Newman but also present in South Hedland and the Western Dessert communities. Key issues include a lack of supervision and safety, food security, substance abuse and youth offending. The Department of Communities in consultation with service providers and Police are developing a Newman Youth Action Plan to address issues impacting youth.

Headspace provides an outreach service for youth in the Pilbara and works to engage Aboriginal youth. Two headspace centers are planned for Karratha and South Hedland and will open in late 2021, early 2022.

Services

Mental health services in the Pilbara are provided by the WA Country Health Service, the not-for-profit sector and via a small number of private providers. There is a shortage of mental health professionals in the Pilbara, particularly psychiatrists. High turnover and lack of a permanent, locally trained medical workforce are common issues across Country WA PHN. This is accompanied by lower than national average rate of mental health MBS service utilisation (Australian Institute of Health and Welfare, 2021d).

The Pilbara had one of the lowest rates of MBS mental health-related services (Australian Institute of Health and Welfare, 2021d). This may be indicative of the low numbers of private mental health practitioners and a reliance on publicly funded primary mental health services in providing services for mild to moderate mental health conditions. Additionally, stakeholders have noted limited psychosocial supports in the Pilbara for people with a mental health condition and issues accessing NDIS services.

The 2019 'No Wrong Door' Pilbara regional mental health and alcohol and other drug workshop identified several factors impacting the provision of mental health care in the Pilbara. These included:

- integration between tertiary and primary care services;
- service provision gaps for patients diagnosed with moderate to severe mental health conditions;
- the use of multiple assessment tools across services; and
- locations that are underserviced (WA Primary Health Alliance, 2019).

Stakeholders have also highlighted a lack of culturally secure primary mental health services for Aboriginal people and noted that online and telephone-based services are not always the most culturally accessible modalities.

Aboriginal Health

The Pilbara region has the second largest Aboriginal population in WA. In 2016, it was estimated that there were 11,731 Aboriginal people residing in the Pilbara (ERP 2016). Across the region, there are 23 remote Aboriginal communities and the two largest communities are Jigalong and Punmu. Six communities are not used as permanent living areas, while the remaining 14 have between 30 and 100 permanent residents. There are more than 31 Aboriginal cultural groups and 31 Aboriginal languages, many of these languages have between two and five dialects.

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question "Has the person been told by a doctor or nurse that they have any of these long-term health conditions?".

In the Pilbara region, more Aboriginal people reported having the following conditions compared to non-Aboriginal people:

- 7.7% of Aboriginal people reported having Diabetes compared to 2.5% of non-Aboriginal people.
- 3.4% of Aboriginal people reported having Heart Disease compared to 1.3% of non-Aboriginal people.
- 7.4% of Aboriginal people reported having Asthma compared to 6.5% of non-Aboriginal people.
- 1.3% of Aboriginal people reported having Kidney Disease compared to 0.3% of non-Aboriginal people.

Still in the Pilbara, 1248 (15.6%) Aboriginal persons responded as having 1 Chronic condition, 315 (3.9%) have two Chronic conditions, while 151 (1.9%) have three or more Chronic conditions, 5650 (70.4%) have no Chronic condition, while 666 (8.3%) didn't respond to the question (Australian Bureau of Statistics, 2021a). Remoteness in Australia is measured by the Modified Monash Model. The Model is used to distribute the health workforce in rural and remote areas. There are seven classifications in the Model from 1MM being a metropolitan area to MM7 very remote and includes off-shore Islands. All remote Aboriginal communities in the Pilbara are classified MM7 (Department of Health).

The gap in health outcomes between Aboriginal and non-Aboriginal Australians is well documented, particularly around life expectancy, chronic disease, mental health, trauma, alcohol and other drug and potentially preventable hospitalisations. Data related to Aboriginal people is commonly presented in different Indigenous Areas, which differ in geography

from the standard SA3s used elsewhere in this report. In the Pilbara the Aboriginal Areas are the catchments of East Pilbara, Port Hedland, Exmouth-Ashburton, Karratha, and Roebourne–Wickham.

The Pilbara has a large and to some extent transient Aboriginal population. Aboriginal people in the Pilbara experience poor health outcomes and have limited access to culturally secure and appropriate primary care services. Travel distances from these communities to access services can be between 140 kilometres to over 500 kilometres.

Roebourne–Wickham and East Pilbara have the highest indigenous relative socio-economic outcome index in the Pilbara. The Indigenous Relative Socio-economic Outcome Index (IRSEO) represents the Indigenous Areas of social and economic disadvantage among Aboriginal people (Public Health Information Development Unit, 2021a). Indicators reflecting disadvantage include low income, low educational attainment, high unemployment, and reliance on welfare for income and housing support. Both Roebourne-Wickham and East Pilbara had high unemployment, low education attainment and a high percentage of government housing (Public Health Information Development Unit, 2021a).

Aboriginal children in the Pilbara are also impacted by disadvantage. According to the Australian Early Development Census, the proportion of Aboriginal children that are developmentally vulnerable in one or more domains in East Pilbara is 70%, 48% in Port Hedland and 42% in Karratha (Public Health Information Development Unit, 2021a) In Exmouth-Ashburton, 45% of Aboriginal mothers smoked during pregnancy and 26% of babies born had a low birthweight.

Housing

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of East Pilbara (49%), Roebourne-Wickham (34%) and Karratha (19%) (Public Health Information Development Unit, 2021a).

Childhood immunization

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In the Pilbara region, childhood immunisation rates below target for children aged 2 years were 76% in Exmouth-Ashburton, 79% in Port Hedland and 81% in Karratha IAREs. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower Urgency Emergency Department Presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services. Country WA PHN had a greater rate of total non-urgent ED presentations (10,742 ASR per 100,000 people per year) in Aboriginal and Torres Strait Islander people compared to WA (7,742). In Country WA, top major diagnosis chapters included factors influencing health status (3,626 ASR per 100,000) and injury and poisoning (2,763 ASR per 100,000) (Public Health Information Development Unit, 2021a).

Statistically significantly higher rates of non-urgent ED presentations were recorded between 2017/18:

- Diagnosis chapters factors: influencing health status and contact with health services: Karratha, Port Hedland
- Injury, poisoning and certain other consequences of external causes: Karratha, Port Hedland, Roebourne-Wickham (Public Health Information Development Unit, 2021a).

Avoidable deaths by selected causes

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significantly higher in the following regions (ASR per 100,000 Aboriginal persons):

- Diabetes: Port Hedland (151 per 100,000), Roebourne-Wickham (76)
- Circulatory system diseases: Port Hedland (131 per 100,000), Roebourne-Wickham (125)
- External causes (transport accidents, accidental drowning and submersion): Exmouth - Ashburton (87 per 100,000)
- Selected external causes (falls, fires, burns, suicide and self-inflicted injuries): Port Hedland (63 per 100,000), Karratha (43) (Public Health Information Development Unit, 2021a).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 the following PPHs were statistically significantly higher in the IAREs of the Pilbara region.

PPHs for chronic disease:

- Chronic angina: Port Hedland (426 per 100,000) and Karratha (309)
- Diabetes: Port Hedland (736 per 100,00) and Exmouth – Ashburton (475)
- Congestive cardiac failure (CCF): Port Hedland (830 per 100,00), Exmouth – Ashburton (785) and Karratha (621)
- Diabetes: Karratha (879 per 100,000) and Port Hedland (654)
- COPD: Port Hedland (4,651 per 100,000), East Pilbara (2,609) and Karratha (2,589) (Public Health Information Development Unit, 2020).

PPHs for acute conditions:

- Acute cellulitis: Karratha (1,942 per 100,000), Roebourne – Wickham (1,584) and Port Hedland (1,548)
- Acute convulsions and epilepsy: Roebourne – Wickham (812 per 100,000) and Port Hedland (617)
- Acute ear, nose and throat infections: Port Hedland (832 per 100,000) and Karratha (776)

- Acute urinary tract infections (including pyelonephritis): Port Hedland (982 per 100,000), Karratha (732) and East Pilbara (593) (Public Health Information Development Unit, 2020).

PPHs for vaccine-preventable conditions:

- Pneumonia and influenza: Port Hedland (397 per 100,000), Karratha (340) and Roebourne – Wickham (267)
- Other: Port Hedland (667 per 100,000).

NOTE: Vaccine-preventable (other) includes diseases such as hepatitis B, measles, mumps, and chicken pox (Public Health Information Development Unit, 2020).

GP data-Aboriginal Health Assessments

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Aboriginal and Torres Strait Islander people can access specific services aimed at Closing the Gap in health outcomes. It is important that General Practices ask all patients if they identify as Aboriginal and/or Torres Strait Islander. This assists with ensuring patients are provided with the option of accessing information and services specifically designed to meet their needs.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c). In 2019-20, the proportion of the Aboriginal population that received an Indigenous Health Check was 19.8% in East Pilbara and 25.6% in West Pilbara SA3s compared to 25.1% in Country WA PHN. Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.5% in East Pilbara and 0.6% across the state; however, West Pilbara had the highest uptake in Country WA PHN (2.9%). West Pilbara (36.5%) and East Pilbara (36.7%) had a lower proportion of patients who received follow-up services compared to the state (46.8%) (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Services

In the Pilbara, primary care services are provided by General Practice, the WA Country Health Service, non-government organisations, Puntukurnu, Mawarnkarra and Wirraka Maya Aboriginal Community Controlled Health Organisations. The Royal Flying Doctor service provides a weekly visiting general practitioner to Nullagine, and Marble Bar and fortnightly visits to the communities of Punmu and Parnngurr. In addition to these services a Female GP Program is provided in Cotton Creek, Jigalong, Onslow and Punmu. A local Nursing Post operated by the WA Country Health Service is available in Marble Bar and the Royal Flying Doctors Services provide a GP clinic from the community school in Yandeyarra.

Digital Health

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. In 2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also

revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

The pre-COVID-19 MBS utilisation for telehealth services in West Pilbara was equal to the national rate (0.21 per 100 resident population) but lower than Country WA (0.42). The MBS utilisation data was not published for East Pilbara.

COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The Pilbara is a remote region with a relatively young population and a high proportion of Aboriginal people and fly-in-fly-out (FIFO) workforce. The leading cause of disease burden in the region is injury, followed by mental health conditions, especially depressive disorders, suicide, and self-inflicted injuries. There are also significantly high prevalence rates of risk factors for chronic disease, with high rates of obesity, smoking and alcohol consumption compared to the state. The region has low rates of cancer screening and childhood immunisations, particularly for Aboriginal people.

A number of socioeconomic factors affect health in the Pilbara, particularly housing and food security. Remote communities are impacted by lack of food security and high prices for fresh food. A shortage of housing and high prices for rental accommodation affects workforce supply and issues such as overcrowding also impact health, particularly for Aboriginal people in the region.

The Pilbara has a relatively low elderly population and a low supply of aged care services, including residential aged care beds. Aged care workforce shortages are exacerbated by the housing shortage across the region.

A key issue is lack of access to primary care due to long travel distances, workforce shortages, lack of bulk billing, appointment wait times, and lack of access to culturally secure services. Addressing youth issues such as substance abuse and antisocial behaviour is a priority for stakeholders in the region.

How particular health needs are already being addressed by current services:

As relevant, a short summary of how a particular health need is being addressed by current services, highlighting where:

- *PHNs currently fund services that address the identified health need*
- *While specific health needs might have been identified within the PHN region, it will not translate into a priority as it is already adequately addressed by other existing non-PHN funded services.*

Analysis of health and service needs in the Pilbara identified a few needs that are being addressed by other non-PHN funded services. For instance, stakeholders have identified a need for suicide postvention services in the Pilbara. The commonwealth government has now funded a Postvention Coordinator for the region via another organization. Additionally, stakeholders had identified gaps in the provision of timely and consistent drug and alcohol services to smaller isolated communities. The commonwealth government has responded to this need by providing additional funding to these communities for a further 18 months.

Feedback from stakeholders cited concerns about Fetal Alcohol Syndrome Disorder (FASD) in their communities, a lack of evidence about rates of FASD, and the health needs of children and young people suffering from FASD. FASD has been identified as a priority in the Pilbara as disability support services are out of scope for PHNs.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
Mental health was the second leading cause of disease burden in the Pilbara.	Lack of mental health services for 0-12 years old.	Develop and commission mental health services for young people especially in the age group 0-12 yrs. old where no service exists.	Mental Health	Early intervention and prevention
Suicide and self-inflicted injuries were the leading cause of disease burden for 15- to 24-year-old.	There were high rates of hospitalisations for self-harm for those aged 0-24.	Improve access to early intervention suicide prevention services.	Mental Health	Early intervention and prevention
There are significantly higher rates of obesity in the Pilbara.	Access to General Practice is limited and screening for BMI is limited in the Pilbara.	Support Primary Health Care providers to implement effective health interventions for those living with overweight and obesity.	Population Health	Practice support
Chronic disease also accounted for a substantial proportion of the burden of disease.	PPH hotspots have been identified for asthma, congestive cardiac failure, COPD, diabetes complications, rheumatic heart disease, bronchiectasis.	Attract workforce who can provide Allied health services such as Podiatrist to manage chronic diseases.	Population Health	Workforce
Residents are at risk from long-term harm from alcohol use, smoking and illicit drug use.	ED presentations related to AOD were the second highest in the state.	Increase access to early intervention and AOD management services including family supports.	Alcohol and other drugs	Access
Immunisation rates are below national targets for some Aboriginal children in the Pilbara.	Some regions have low childhood immunisation coverage.	Increase Aboriginal childhood immunisation rates for regions not meeting national immunisation targets.	Aboriginal and Torres Strait Islander Health	Immunisation
Vaccine preventable conditions continue to impact Aboriginal populations in the Pilbara.	Vaccine preventable conditions PPH have been identified for Aboriginal populations in the Pilbara.	Ensure Aboriginal people are accessing immunisations (i.e., Influenza)	Aboriginal and Torres Strait Islander Health	Immunisation

Opportunities and Options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Develop and commission mental health services for young people especially in the age group 0-12 yrs where no service exists.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals. MH3 Rate of regional population receiving PHN commissioned clinical care coordination services for people with severe and complex mental health conditions.	General Practice Non-Government Organisations Community Mental Health Services
Improve access to early intervention suicide prevention services.	MH5 Proportion of people referred to PHN commissioned services due to a recent suicide attempt or because they were at risk of suicide followed up within 7 days of referral.	Non-Government Organisations Community Mental Health Services General Practice Local Hospital Networks
Support Primary Health Care providers to implement effective health interventions for those living with overweight and obesity.	P4 Support provided to general practices and other health care providers.	General Practice Allied Health Service Providers
Attract workforce who can provide Allied health services such as Podiatrist to manage chronic diseases.	P13 A range of primary health care professionals available within the PHN region.	Rural Health West Allied Health Service Providers
Increase access to early intervention and AOD management services including family supports.	AOD1 Rate of drug and alcohol commissioned providers actively delivering services.	General Practice Mental Health Commission WANADA
Increase Aboriginal childhood immunisation rates for regions not meeting national immunisation targets.	PH1 95% national immunisation target or increase in immunisation rate for region.	Aboriginal Community Controlled Health Services General Practice Local Hospital Networks
Ensure Aboriginal people are accessing immunisations (i.e., Influenza)	P12 Decrease in PPH rates. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing rate of PPHs.	Aboriginal Community Controlled Health Services General Practice Local Hospital Networks

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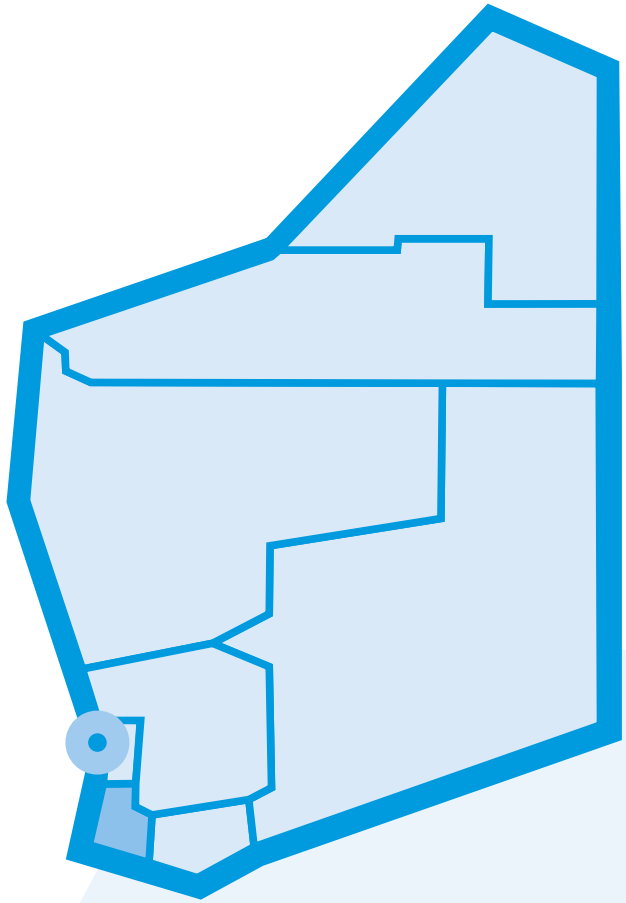
South West

Needs Assessment 2022-2024



South West

Population Demographics

The South West region covers nearly 24,000 square kilometres and is the most populous country region in Western Australia.

In 2021, the population of Country WA PHN was 529,933 people compared to the state's population of 2,660,026 people (Public Health Information Development Unit, 2022). Within the South West, there were 57,332 people living in Augusta – Margaret River – Busselton SA3, 107,549 in Bunbury SA3 and 23,863 in Manjimup SA3, giving a total of over 188,000 residents in the region. This represents about 7% of the total population of Western Australia.

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

Highest musculoskeletal burden in the state

38% of adults aged 16+ years in Bunbury SA3 are **obese**

21% of adults aged 16+ years in Manjimup SA3 have **high blood pressure**

Mental ill-health was the **fourth** leading cause of disease burden

7% of the population accessed a GP **mental health treatment plan**

19% of people in Augusta – Margaret River – Busselton SA3, **17%** in Bunbury SA3, and 23% in Manjimup SA3 are **aged 65 years and over**

Coronary heart disease, COPD and dementia are among the leading causes of disease burden for people aged 65 and over

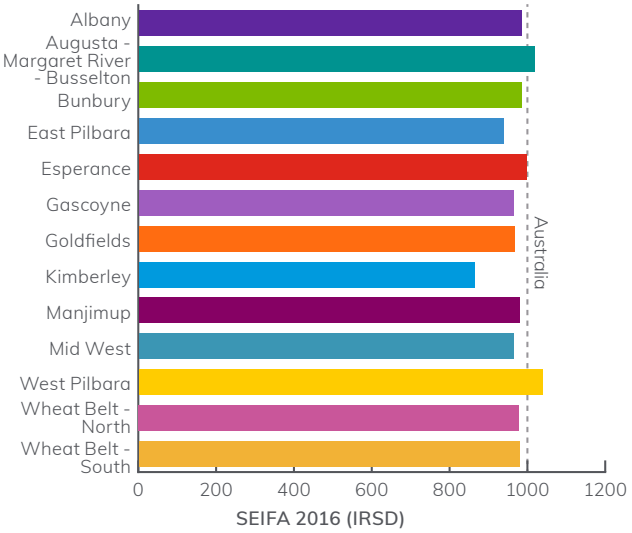
There is a **growing ageing population** and a relatively **low ratio of residential aged care beds** to population compared to the state

There are an estimated **5,464 Aboriginal people** residing in the region

38% of Aboriginal people in Bunbury SA3 received an **Indigenous-specific health check** through Medicare in 2019-20 compared to 15% in Manjimup SA3 and 11% in Augusta – Margaret River – Busselton SA3

Of the three sub-regions, Manjimup SA3 had the highest level of socioeconomic disadvantage (IRSD=977) (Public Health Information Development Unit, 2021b) and Bunbury SA3 had the highest proportion of Aboriginal people (3.4%) (Public Health Information Development Unit, 2022). Feedback from local stakeholders indicated that across the region, inland areas such as Manjimup and Collie were considerably more disadvantaged, with limited public transport and restricted access to services compared to coastal areas.

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.4% of people in Augusta – Margaret River – Busselton SA3 (227 people) and Manjimup SA3 (95 people) and 0.5% of people in Bunbury SA3 (535 people) were born overseas and have poor English proficiency compared to 1.8% across the state (44,521 people) (Public Health Information Development Unit, 2022).
- Around 4.6% of people in Augusta – Margaret River – Busselton SA3, 5.4% of people in Bunbury SA3, and 5.8% of people in Manjimup SA3 have a profound or severe disability compared to 4.6% across the state (Australian Bureau of Statistics, 2021a).
- About 11% of people in Augusta – Margaret River – Busselton SA3 and 12% of people in Bunbury SA3 and Manjimup SA3 provide unpaid assistance to people with a disability compared to 11% across the state (Public Health Information Development Unit, 2022).
- About 16% of children in Augusta – Margaret River – Busselton SA3, 22% in Bunbury SA3, and 18% in Manjimup SA3 were developmentally vulnerable on one or more domains compared to 19% across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 160 people in Augusta – Margaret River - Busselton SA3, 230 people in Bunbury SA3, and 58 people in Manjimup SA3 experienced homelessness (Australian Bureau of Statistics, 2018). The percentage of homeless people living in severely crowded dwellings (requiring at least four extra bedrooms to accommodate the people usually living there) was 23% in Augusta – Margaret River - Busselton SA3, 26% in Bunbury SA3, and 31% in Manjimup SA3.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as

a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the South West.

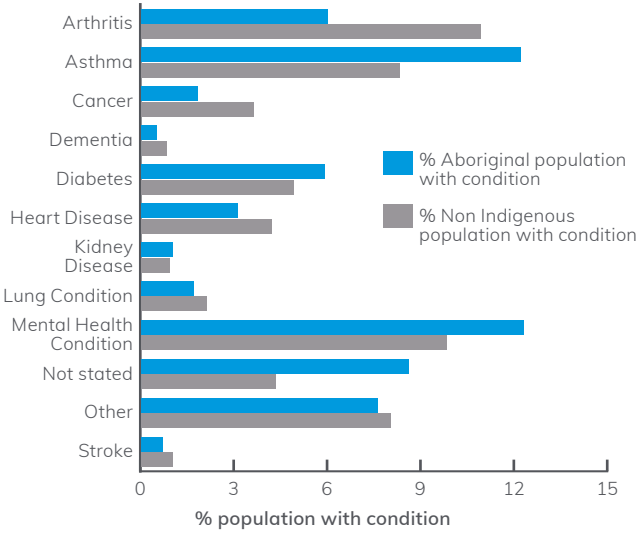


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the South West.

Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). The South West region had prevalence rates of risk factors that were significantly higher than state rates, especially in Bunbury and Manjimup SA3s. In 2017-18, children aged 2-17 years in Bunbury SA3 and Manjimup SA3 were significantly more likely to be obese (ASR=11%) compared to the state (ASR=7.9%) (Public Health Information Development Unit, 2021b). Moreover, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that the estimated prevalence rate of obesity among adults aged 16 years and over was significantly higher at 38% in Bunbury SA3 compared to 30% across the state and that Manjimup SA3 had significantly higher rates of high blood pressure (21% compared to 17%) (Epidemiology Branch, 2021a). Augusta – Margaret River – Busselton SA3 had a significantly high prevalence of former smokers (35%); however, 69% of adults did 150 mins or more of moderate physical activity – the highest rate in Country WA PHN.

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management 'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

General Practice Incentives Program Quality Improvement Incentive (PIP QI)

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with their weight classification recorded within the last 12 months, the proportion of patients with information available to calculate risk of cardiovascular disease (CVD), and the proportion of patients with diabetes that have a HbA1c measurement recorded. PIP QI data indicated the following for Augusta – Margaret River – Busselton SA3 (13 practices), Bunbury SA3 (20 practices), and Manjimup SA3 (10 practices) compared to the state (497 practices).

- The percentage of general practice records for clients aged 15 years and over that did not have a weight classification recorded within the last 12 months was 80% in Augusta – Margaret River – Busselton, 76% in Bunbury, and 75% in Manjimup compared to 76% across the state.
- The percentage of general practice records for clients aged between 45-74 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 47% in Augusta – Margaret River – Busselton, 42% in Bunbury, and 41% in Manjimup compared to 43% across the state.
- The percentage of general practice records for clients with a diagnosis of diabetes that did not have a HbA1c measurement result recorded within the last 12 months was 24% in Augusta – Margaret River – Busselton, 25% in Bunbury, and 23% in Manjimup compared to 28% across the state.

We note that PIP QI data include private general practices only and do not include GP services provided by non-government organisations.

Burden of disease and modelled estimates

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the South West region had a 1.1 times higher rate of fatal burden and a 1.2 times higher rate of non-fatal burden compared to the metropolitan regions. Chronic disease accounted for a substantial proportion of the burden of disease. The region had the highest musculoskeletal burden in the state, accounting for 17% of total burden. Back pain/problems, COPD and coronary heart disease were among the leading five causes of burden for both males and females, osteoarthritis was the leading cause for females, while lung cancer was the fifth leading cause for males.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the South West region, age-adjusted prevalence rates in Augusta – Margaret River – Busselton, Bunbury, and Manjimup SA3s respectively were 18%, 20%, and 19% for one long-term condition and 7.6%, 9.6%, and 8.4% for two or more conditions. Compared to the state, Bunbury SA3 had relatively high rates of asthma (ASR=8.6% compared to 7.4%) and arthritis (ASR=9.6% compared to 7.9%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

Across the state in 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1109 and the highest rates were for COPD (232), congestive cardiac failure (220), and iron deficiency anaemia (188) (Australian Institute of Health and Welfare, 2019). Compared to the state, Bunbury SA3 had a higher rate for total chronic conditions (1269) as well as for the above three conditions. On the other hand, PPHs for total chronic conditions were lower than the state rate in Manjimup SA3 (1012) and Augusta – Margaret River – Busselton SA3 (799).

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, there were three population health areas (PHAs) in the region that were hotspots for chronic conditions. Bunbury/Koombana PHA was a hotspot for angina, bronchiectasis, and congestive cardiac failure. Collie PHA was a hotspot for angina and hypertension, while Harvey/Waroona PHA was a hotspot for COPD.

Management of chronic disease in primary care

From 2018-19 to 2020-21, percentage of population utilisation of GP chronic disease management plans (CDMPs) in the region rose slightly, from 16% to 17% in Augusta – Margaret River – Busselton SA3, from 13% to 15% in Manjimup SA3, and from 15% to 16% in Bunbury SA3 (Australian Institute of Health and Welfare, 2021d).

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years (Department of Health, 2021b). About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years.

In the South West region, childhood immunisation rates were below target for all SA3s and all three age groups, with the lowest rates for children aged 2 years. Manjimup SA3 had the lowest rates in the region, with about 90.4% of children were fully immunised at 1 year, 84.3% at 2 years, and 88.1% at 5 years. The lower rate at 2 years suggests that interventions should be targeted to increase immunisation coverage for this age group.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicate that cancer screening participation rates were generally at or above state rates except for cervical cancer screening in Bunbury and Manjimup SA3s. Augusta – Margaret River – Busselton SA3 had the highest screening rates at 54% for bowel cancer, 59% for breast cancer and 51% for cervical cancer. Participation rates respectively were 48%, 55% and 44% in Bunbury SA3 and 53%, 57% and 43% in Manjimup SA3. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was 79 years in Bunbury and Manjimup SA3s (50% of people who died were younger than 79 years) and 83 years in Augusta – Margaret River – Busselton SA3 compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, the age-standardised death rate per 100,000 from avoidable causes in Bunbury SA3 (137) was significantly higher than the state rate (122), while Augusta – Margaret River – Busselton SA3 had a significantly lower rate (98) especially for diabetes (2.6), circulatory system diseases (20) and ischaemic heart disease (15) (Public Health Information Development Unit, 2021b).

Utilisation of primary care services

In 2020-21, Bunbury SA3 had the highest utilisation of Medicare-subsidised primary care services in the South West region (93% compared to 94% in 2018-19). Utilisation of GPs remained stable at 87% in Augusta – Margaret River – Busselton SA3 and 88% in Manjimup SA3 (compared to 87% in 2018-19) (Australian Institute of Health and Welfare, 2021d). In comparison, the national rate of utilisation of GPs was 88% in inner regional areas and 86% in outer regional areas.

Between 2018-19 and 2020-21, the percentage utilising after-hours GP services decreased from 17% to 14% in Bunbury SA3 (Australian Institute of Health and Welfare, 2021d). Although after-hours utilisation increased in Augusta – Margaret River – Busselton SA3 (from 7.5% to 8.1%) and in Manjimup SA3 (from 4.8% to 5.5%), rates were still well below national rates for inner (9.3%) and outer (11%) regional areas.

Utilisation of GP health assessments was relatively low at 3.8% in Augusta – Margaret River – Busselton SA3, 5.1% in Bunbury SA3 (5.4% nationally in inner regional areas) and 4.8% in Manjimup SA3 (6.2% nationally in outer regional areas). We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region.

In 2020-21, a similar percentage of the population utilised Medicare-subsidised allied health services in Augusta – Margaret River – Busselton SA3 (40%) and Bunbury SA3 (40%) compared to inner regional areas nationally (41%), and Manjimup SA3 (38%) also had a similar rate to outer regional areas nationally (37%) (Australian Institute of Health and Welfare, 2021d). The percentage of the population that utilised optometry was 31% in Augusta – Margaret River – Busselton SA3, 33% in Bunbury SA3 (34% nationally in inner regional areas), and 31% in Manjimup SA3 (the same rate as outer regional areas nationally). We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations. Feedback from local stakeholders indicated that, historically, there has been limited access to private allied health clinicians such as diabetes educators, dieticians, and podiatrists in inland towns such as Manjimup and Collie and this has affected the provision of holistic care.

Manjimup SA3 had a similar utilisation rate of nurses and Aboriginal Health Workers (11%) compared to outer regional areas nationally (10%) (Australian Institute of Health and Welfare, 2021d). Augusta – Margaret River – Busselton SA3 and Bunbury SA3 had utilisation rates of 9.2% and 9.8% respectively compared to 11% nationally in inner regional areas.

Feedback from local stakeholders indicated that GPs provide medical services at Warren (Manjimup), Bridgetown, Boyup Brook, Margaret River, and Collie Hospitals. The Council of Australian Governments (COAG) Section 19(2) Exemptions allow exempted eligible sites to claim against Medicare for non-admitted, non-referred professional services provided in emergency departments and outpatient clinic settings. In the South West region, these services are provided at Warren Health Service and Bridgetown Hospital.

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014.

The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. Waroona SA2 in Bunbury SA3 was in the first decile (access relative to need was lower than 90% of SA2s in the state) for access to any GP and in the second decile for access to bulk billing GPs. Pemberton SA2 (Manjimup SA3) and Collie SA2 (Bunbury SA3) were in the second decile for access to any GP as well as bulk billing GPs.

Workforce

General practitioners (GPs)

In 2020, Manjimup SA3 had the lowest supply of GPs in the South West region. GP full-time equivalent (FTE) per 1000 residents was 1.1 in Augusta – Margaret River – Busselton SA3 (63 FTE), 1.3 in Bunbury SA3 (137 FTE), and 0.9 in Manjimup SA3 (20 FTE) compared to 1.1 across the state[2]. The ratio of vocationally registered (VR) to non-VR GPs was highest in Augusta – Margaret River – Busselton SA3 (20) and relatively low in Bunbury SA3 (4.7) and Manjimup SA3 (4.3) compared to 12 across the state.

Primary care nurses

Manjimup SA3 had a relatively low supply of nurses working in primary care compared to the state. In 2019, primary care nurse full-time equivalent (FTE) per 1000 residents was 1.6 in Augusta – Margaret River – Busselton SA3 (87 FTE), 1.6 in Bunbury SA3 (170 FTE), and 1.0 in Manjimup SA3 (22 FTE) compared to 1.7 across the state[2]. Primary care nurses in Manjimup SA3 had the shortest average weekly working hours in WA, averaging 24 hours per week compared to 30 hours per week across the state.

Feedback from local stakeholders indicated that, historically, access to private allied health clinicians has been limited in inland towns such as Manjimup and Collie and this has affected the provision of holistic care. The COVID-19 pandemic has compounded workforce supply issues across the region due to travel restrictions and a shortage of rental housing. At the same time, the number of intrastate visitors to the South West has increased along with the demand for short term accommodation (an increase of 26% in visitor nights for the year ending March 2021 compared to the previous year (Tourism WA, 2021). This has exacerbated the shortage of rental housing and led to increased pressure on health services during peak holiday periods.

Aged Care

The South West region has a high proportion of people aged 65 years and over, especially in Manjimup SA3. In 2021, about 22% of people in Augusta – Margaret River – Busselton SA3 (12,454 people), 19% of people in Bunbury SA3 (20,220 people) and 25% of people in Manjimup SA3 (6,035 people) were aged 65 years and over compared to 16% across the state (Australian Bureau of Statistics, 2021a).

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the South West health region, coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 31% of people aged 65 years and over across the South West region had one long-term health condition (including both physical and mental health conditions) and 26% had two or more co-morbid conditions, consistent with state rates. The most common types of conditions among older adults in the region were arthritis (29%), heart disease (14%), and diabetes (13%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the South West region, there were 2,954 people with dementia, with the highest number in Busselton SA2 (553) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level.

Medicare items are available for in-depth

assessment of a patient 75 years and over. This provides a structured way of identifying health issues and conditions that are potentially preventable or amenable to interventions to improve health and quality of life. Data for participating general practices indicate uniform levels of people over 75 access health assessments at 22% for August – Margaret River- Busselton, and Bunbury and 20% for Manjimup, compared to 21% for Country WA PHN. However, the proportionally higher older adult population in the Southwest highlights this as a potential area for improvement in care.

Aged care services

The aged care system in Australia offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. Across Australia, more than two-thirds of people using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021).

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

In the South West home care is provided through charitable, community based and religious organisations. According to the Gen Aged Care Data 28 home care providers were available in the region. As at December 2020, there were 890 people in a HCP in the South West Aged Care Planning Region (ACPR) (Department of Health, 2021a). An additional 349 people were waiting for a HCP with 98 people (28%) requiring the highest level of care (level 4).

There were five residential aged care facilities in the Augusta - Margaret River - Busselton SA3, nine in Bunbury and seven in the Manjimup SA3. The number of residential aged care (RACF) beds to 1000 people aged 70 years and over was 62 in Augusta – Margaret River – Busselton SA3, 58 in Bunbury SA3, and only 43 in Manjimup SA3 compared to 63 in Country WA PHN and 72 across the state (Australian Institute of Health and Welfare, 2021b).

In 2019, aged care nurse full-time equivalent (FTE) per 1000 residents aged 70 years and over was 12 in Augusta – Margaret River – Busselton SA3 (87 FTE), 11 in Bunbury SA3 (132 FTE), and 9.6 in Manjimup SA3 (34 FTE) compared to 12 across the state[2].

Feedback from local stakeholders indicated that the region was experiencing difficulty recruiting staff across the sector. This has led to some Health Care Plan providers not taking any new clients due to a shortage of staff. Lack of availability of RACF beds has led to increasing numbers of people in hospital beds while waiting for placement.

Alcohol and Other Drugs

Residents in August – Margaret River - Busselton (29.2%), Bunbury (29.5%), and Manjimup (27.0%) SA3s were at long-term risk from alcohol consumption (Epidemiology Branch, 2021b). Although these rates exceeded the state rate (26.5%), they were not statistically significantly higher than WA rate (Epidemiology Branch, 2021b). The population being current smokers in Augusta - Margaret River - Busselton, Bunbury and Manjimup SA3s were 12.3%, 12.6% and 10.7% respectively (Epidemiology Branch, 2021b).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with a smoking status and proportion of patients with an alcohol consumption status. In the South West region, the percentage of GP patient records that did not have a smoking status recorded was highest in Augusta-Margaret River-Busselton SA3 (40% across 13 practices), followed by Bunbury SA3 (35% across 20 practices) and Manjimup SA3 (28% across 10 practices) compared to 37% across the state. Bunbury SA3 (45%) had the greatest percentage of GP patient records without an alcohol consumption status recorded, followed by Manjimup SA3 (44%) and Augusta-Margaret River-Busselton SA3 (39%) compared to 46% across the state. We note that these data include only private general practices and do not include health services provided by non-government organisations.

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in Australia in 2018 of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at-risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000. In 2014-2018 Bunbury, Manjimup and Augusta - Margaret River - Busselton SA3s had the second highest rate range of 7.5 to 9.9 deaths per 100,000 for unintentional drug-induced deaths In WA (Penington Institute, 2020).

Emergency department presentations

Between 2018 and 2020, around 0.7% of emergency department (ED) presentations across the region were AOD-related (Department of Health Western Australia, 2021a). About 60% of AOD presentations were made after hours. Presentation rates per 100k population per year in Augusta – Margaret River – Busselton SA3 (339), Bunbury SA3 (382) and Manjimup SA3 (325) were similar to the state rate (369). We note that some ED presentations may be related to alcohol and other drugs but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of AOD-related ED presentations in the region.

Services

Within the South West region, local governments have developed Alcohol and Other Drug Management Plans (AODMPs) in Bunbury, Manjimup and Collie. The consultation process in Bunbury identified a lack of awareness in the community regarding: (1) the availability of AOD services and how to access them; (2) the impact and harms caused by alcohol within the Bunbury community; and (3) the harms caused by methamphetamines, cannabis and other drug use within the Bunbury community. In Manjimup and Collie, key priorities were underage drinking and secondary supply, alcohol in sport and licensed settings, and use of illicit drugs (with a focus on cannabis and methamphetamines in Manjimup).

There are a range of not-for-profit organisations providing alcohol and other drug services in the South West. The South West Community Alcohol and Drug Service in Bunbury (St John of God Healthcare) provides outreach services to Manjimup, Bridgetown, Collie, Busselton and Margaret River. The South West Substance Service delivers services to marginalised young people in Bunbury. Peer Based Harm Reduction WA, based in Bunbury, provides the Needle and Syringe Exchange Program (NSEP) and operates a mobile exchange van in Margaret River, Busselton, and Manjimup. Doors Wide Open, also based in Bunbury, provides access to resources and services to help people recover from addiction. Cyrenian House operates the Nannup Therapeutic Community, a residential program with an emphasis on social learning and mutual self-help to address addiction issues in a holistic way.

In 2021, all service providers noted an increase in demand for alcohol and other drug services and increasing waitlists across the region. The reason for the growing demand is still unknown, workforce issues exacerbated by the COVID-19 pandemic could be a contributing factor.

Mental Health

Mental health was the fourth leading cause of disease burden in the South West region contributing 11% to the total disease burden for the region (Department of Health Western Australia, 2021).

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

Prevalence rates in the South West were similar to state rates (anxiety 9.3%, depression 8.5%, psychological distress 8.8%). About 10% of Bunbury residents were diagnosed with anxiety along with 7.9% in Manjimup and 8.8% in Augusta - Margaret River - Busselton. Similarly, depression was diagnosed in 9.1% of Bunbury residents, 8.4% of Manjimup, and 7.6% of residents in Augusta - Margaret River - Busselton. Populations had similarly uniform rates of psychological distress, with 8.0% in Manjimup and Augusta - Margaret River - Busselton and 7.1% in Bunbury (Epidemiology Branch, 2021b) (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 8.7% and 10% in Augusta – Margaret River – Busselton SA3, 10% and 12% in Bunbury SA3, and 9.7% and 11% in Manjimup SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Between 2014 and 2018, ninety-one people died from suicide in Bunbury, 50 in Augusta - Margaret River - Busselton and 20 in Manjimup. Deaths from suicide were higher than state rates (15 per 100,000) in Bunbury and Augusta - Margaret River - Busselton (18 per 100,000) (Australian Institute of Health and Welfare, 2020c).

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. Survey participants are asked if they thought seriously about ending their own lives. Manjimup (7%) had the highest proportion of people experiencing suicidal thoughts in the South West. The proportion of people experiencing suicidal ideation in Bunbury (4%) and Augusta - Margaret River - Busselton (4%). Across the State 5% of people experience suicidal ideation (Epidemiology Branch, 2021b).

Self-harm is a strong risk factor for suicide. Both Bunbury (249 per 100,000) and Manjimup (259 per 100,000) had self-harm hospitalisation rates above state rates (224 per 100,000). Self-harm hospitalisations were higher for females in the South West compared to males (Australian Institute of Health and Welfare, 2020c).

Youth mental health

Anxiety disorders were the leading cause of disease burden for 15 to 24-year-olds in the South West contributing to 8% of the disease burden for this age group (Department of Health Western Australia,

2021).

Between 2018–19, Manjimup (263 per 100,000) had the highest rate of self-harm hospitalisations in the state (126 per 100,000) for people aged 0-24 years. People aged 0-24 years in Augusta - Margaret River - Busselton were hospitalized for self-harm at rates above that of the State (Australian Institute of Health and Welfare, 2020c).

Emergency department presentations

Country regions had higher rates of mental health-related emergency department (ED) presentations compared to the state. Between 2018 and 2020, around 2.7% of ED presentations across the region were primarily mental health-related, excluding those related to alcohol and other drugs (Department of Health Western Australia, 2021a). Almost half of mental health ED presentations (45%) were made after hours. Presentation rates per 100k population per year were similar for Augusta – Margaret River – Busselton SA3 (1371), Bunbury SA3 (1383) and Manjimup SA3 (1357) and were above the state rate (1083). We note that some ED presentations may be related to mental health but primarily diagnosed as an injury (or other condition), so the data are likely to underestimate the rate of mental health ED presentations in the region.

Services

Mental health services in the South West region are provided by organisations including the WA Country Health Service (WACHS) and various not-for-profit organisations. WACHS operates the Child and Adolescent Mental Health Service (CAMHS), Adult Community Mental Health Services, Older Adult Mental Health Service, and Aboriginal Mental Health Services based in Bunbury, Busselton, Bridgetown, and Margaret River. The South West Aboriginal Medical Service also provides mental health programs for Aboriginal patients. There is currently a headspace centre located in Bunbury and a satellite service in Busselton and Margaret River.

Medicare data indicated that the South West region had the highest utilisation of MBS-rebated mental health services in Country WA PHN. In 2020-21, Augusta – Margaret River – Busselton had the highest utilisation of GP Mental Health Treatment Plans (10%), clinical psychologists (3.1%), and other types of psychologists (2.8%), while Bunbury had the highest utilisation of psychiatrists (1.4%) in Country WA PHN (Australian Institute of Health and Welfare, 2021d).

In 2021, all service providers noted an increase in demand for mental health services and increasing waitlists across the region. Service providers also noted that clients were presenting to mental health services with greater complexity. The reason for the growing demand is still unknown, but workforce issues exacerbated by the COVID-19 pandemic could be a contributing factor.

Aboriginal Health

Noongar people are the original inhabitants of the south-west of Western Australia and are one of the largest Aboriginal cultural blocks in Australia. Noongar are made up of fourteen different language groups, each of which correspond to different geographical areas that are ecologically distinct.

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question “Has the person been told by a doctor or nurse that they have any of these long-term health conditions?”.

In the South-West region, more Aboriginal people reporting having the following conditions than non-Aboriginal people:

- 12.2% of Aboriginal people reported having Asthma compared to 8.3% non-Aboriginal people.
- 5.9% of Aboriginal people reported having Diabetes compared to 4.9% of non-Aboriginal people.

Still in the South-West, 1054 (19.8%) Aboriginal persons responded as having 1 Chronic condition, 309 (5.8%) have two Chronic conditions, while 190 (3.6%) have three or more Chronic conditions, 3313 (62.2%) have no Chronic condition, while 460 (8.6%) didn’t respond to the question (Australian Bureau of Statistics, 2021a).

In 2021, it was estimated that there were 5,330 Aboriginal people residing in the South West region (Australian Bureau of Statistics, 2021a). Data collected on Aboriginal socio-economic indicators by Indigenous area (IARE) showed that Harvey and Surrounds IARE had a high percentage of Aboriginal unemployment (25%) and that Bunbury IARE had a high percentage of Aboriginal jobless families with children aged under 15 years (51%). Moreover, about 30% of Aboriginal dwellings in Bunbury IARE had no internet connection (Public Health Information Development Unit, 2021a).

Indicators of maternal and early childhood health outcomes showed that in Harvey and Surrounds IARE, about 48% of Aboriginal mothers smoked during pregnancy and 21% of Aboriginal babies had a low birth weight. About half of Aboriginal children in Bunbury IARE were developmentally vulnerable on one or more domains (Public Health Information Development Unit, 2021a).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. PIP QI data indicated that the proportion of general practice records for Indigenous clients aged between 35-44 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 70% in Augusta – Margaret River – Busselton SA3 (13 practices), 62% in Bunbury SA3 (20 practices) and 67% in Manjimup SA3 (10 practices) compared to 62% across the state (497 practices). We note that these data include only private general practices and do not include health services provided by non-government organisations.

The percentage of GP patient records with Aboriginal status not recorded was 45% in Augusta – Margaret River – Busselton, 22% in Bunbury, and 20% in Manjimup compared to 33% across the state.

Housing

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of Manjimup-Denmark-Plantagenet (14%), Bunbury (13%) and Harvey and Surrounds (13%) (Public Health Information Development Unit, 2021a).

Child immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In the South West region, childhood immunisation rates below target for children aged 2 years were 69% in Bunbury, 83% in South-West and 86% in Busselton IAREs. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services. Country WA PHN had a greater rate of total non-urgent ED presentations (10,742 ASR per 100,000 people per year) in Aboriginal and Torres Strait Islander people compared to WA (7,742). In Country WA, top major diagnosis chapters included factors influencing health status (3,626 ASR per 100,000) and injury and poisoning (2,763 ASR per 100,000) (Public Health Information Development Unit, 2021a).

Busselton had a statistically significantly higher rate of non-urgent ED presentations in 2017/18 for injury, poisoning and certain other consequences of external causes.

Avoidable deaths by selected causes

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significantly higher in Bunbury for respiratory system disease (64 per 100,000) (Public Health Information Development Unit, 2021a).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 the following PPHs were statistically significantly higher in the IAREs of the Southwest region (Public Health Information Development Unit, 2020).

PPHs for chronic conditions:

- Chronic congestive cardiac failure (CCF): Harvey and Surrounds (493 per 100,000) and Bunbury (440)
- Diabetes: Harvey and Surrounds (955 per 100,000)

There were no IAREs with the South West region who experienced a statistically significant PPHs for acute or vaccine-preventable conditions.

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people (Australian Institute of Health and Welfare, 2017). In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition (Australian Institute of Health and Welfare, 2017).

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions. In 2019-20, the proportion of the Aboriginal population that received an Indigenous Health Check was 14.9% in Manjimup SA3, 10.9% in Augusta - Margaret River - Busselton SA3 (the lowest in Country WA PHN), and 38% in Bunbury SA3, which was higher than Country WA PHN (25.1%). Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.7% in Bunbury and 0.6% across the state. These rates are not publishable for Manjimup and Augusta - Margaret River - Busselton SA3s because of small numbers, confidentiality, or other concerns about the quality of the data. Augusta - Margaret River - Busselton (32.5%) and Manjimup (34.9%) had a lower proportion of patients that received follow-up services compared to the state (46.8%), while Bunbury SA3 (56.8%) had a higher proportion (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Services

Aboriginal people living in the South West region can access primary care services through general practice, Aboriginal Community Controlled Health Services, mainstream primary care services and the hospital sector. The South West Aboriginal Medical Service (SWAMS) is an Aboriginal Community Controlled Health Organisation that provides community health services to Aboriginal people across the South West region. GP Down South delivers the Down South Aboriginal Health (DSAH) service, which provides Integrated Team Care (ITC) services in Manjimup and Collie.

Digital Health

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. In

2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

The pre-COVID-19 MBS utilisation for telehealth services in Manjimup (0.76 per 100 people) was the third highest rate in WA. Bunbury recorded 0.36 and Augusta - Margaret River - Busselton recorded 0.26. All three SA3 areas exceeded Perth North PHN (0.01), Perth South PHN (0.03) and the national rate (0.21), however only Manjimup was higher than Country WA (0.42).

COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The South West is the most populous region outside of the metropolitan area. The dominant health concerns in the region are chronic disease, an increasing ageing population, mental health, and access to services.

The populations of Bunbury and Manjimup SA3s had significantly high prevalence rates of risk factors for chronic disease including obesity and high blood pressure. Chronic disease accounted for a substantial proportion of the burden of disease and the region had the highest musculoskeletal burden in the state. Bunbury had significantly high rates of PPH due to chronic conditions and PPH hot spots were identified in Collie, Harvey, and Waroona.

Despite having a larger population compared to other Country WA regions, the South West also experiences service access issues. The region had lower utilisation of allied health services and limited access to bulk billing GPs. This particularly impacts the inland towns, with residents often needing to travel to coastal towns to access services.

A growing ageing population in the South West will impact primary care services into the future. The region had a relatively low ratio of residential aged care beds to population compared to the state.

Mental health impacts youth in the South West, with anxiety the leading cause of burden of disease for youth in the region. Manjimup SA3 had the highest rate of self-harm hospitalisations in the state for people aged under 25 years. In 2021, service providers, particularly headspace, noted an increase in demand for mental health services and increasing waitlists across the region.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
Chronic disease accounted for a substantial proportion of the burden of disease. The region had the highest musculoskeletal burden in the state.	Bunbury had significantly high rates of PPH due to chronic conditions and PPH hot spots were identified in Collie, Harvey, and Waroona.	Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	Population health	Chronic conditions
The population in South West had significantly high-risk factors for chronic disease particularly high blood pressure and obesity.	Screening rates for risk factors are low. Supply of General Practice to population need was in the lower deciles. (Access Relative to Need.)	Support primary care to promote healthy weight and healthy lifestyle changes.	Population health	Practice support
Mental health impacts youth in the South West with anxiety the leading cause of burden of disease for youth in South West.	Manjimup had the highest self-harm hospitalisations in the state for people aged 0- 24 years.	Improve access to mental health services for youth.	Mental health	Early intervention and prevention
A growing ageing population in the South West will impact primary care services into the future.	The region had relatively low ratio of residential aged care beds to population compared the State.	Improve the management of chronic conditions for ageing populations and promote healthy ageing at home.	Aged care	Chronic conditions
Aboriginal people in the South West have poor health outcomes.	Uptake of Aboriginal health assessments are low in some regions in the South West.	Improve access to culturally appropriate services for Aboriginal people in the South West.	Aboriginal and Torres Strait Islander	Appropriate Care (including cultural safety)

Opportunities and Options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P4 PHN delivers a range of support activities to general practices and other health care providers.	General Practice Allied Health Providers
Support primary care to promote healthy weight and healthy lifestyle changes.	P4 Support provided to general practices and other health care providers.	General Practice Allied Health Service Providers
Improve access to mental health services for youth.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals. MH3 Rate of regional population receiving PHN commissioned clinical care coordination services for people with severe and complex mental health conditions.	General Practice Non-Government Organisations Community Mental Health Services
Improve the management of chronic conditions for ageing populations and promote healthy ageing at home.	AC2 Increase in the rate of people aged 75 years and over with a GP health assessment. P12 Decrease in PPH rates. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing rate of PPH.	General Practice Aged Care Organizations Local Hospital Networks Local Governments
Improve access to culturally appropriate services for Aboriginal people in the South West.	IH8 Increase in rate of population receiving specific health assessment / Where the rate has been stable for at least 3 years, the performance criteria is to maintain the existing rate of receiving specific health assessments. IH5 ITC improves the cultural competency of mainstream primary health care services.	General Practice Aboriginal Community Controlled Health Services

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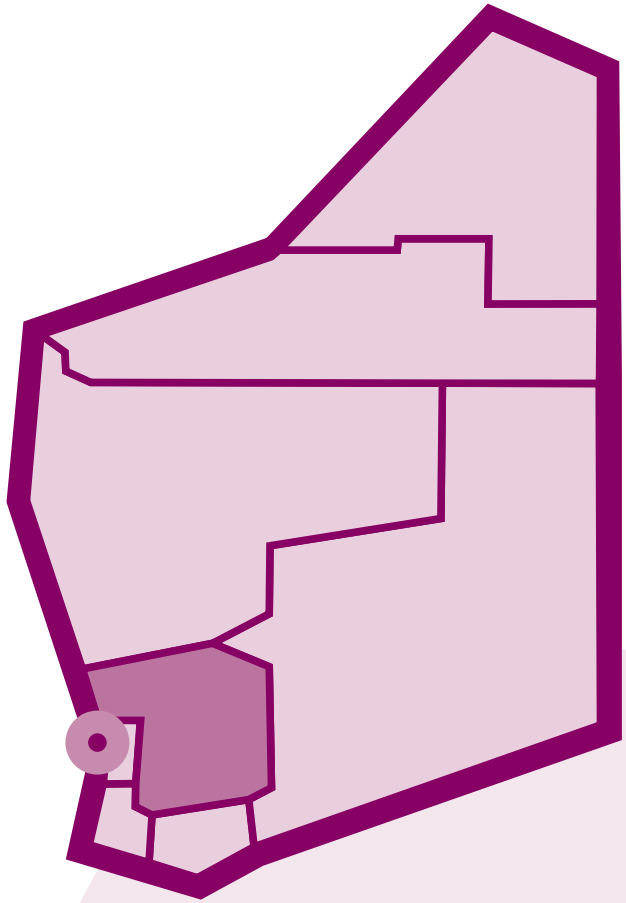
An Australian Government Initiative

Wheatbelt

Needs Assessment 2022-2024



Wheatbelt

Population Demographics

The Wheatbelt region covers 158,000 square kilometres in the south-west of Western Australia. It partially surrounds the Perth metropolitan area, extending north from Perth to the Midwest region, and east to the Goldfields region. It is bordered to the south by the South West and Great Southern regions, and to the west by the Indian Ocean, Perth metropolitan area and the Peel region. In contrast to other Country regions, the population in the Wheatbelt is distributed across the region with no larger central town.

The Wheatbelt region is divided into two main statistical areas (Public Health Information Development Unit, 2022):

- Wheat Belt – North SA3 (pop 55,937) includes the towns of Chittering, Cunderdin, Dowerin, Gingin, Dandaragan, Merredin, Moora, Mukinbudin, Northam, Toodyay, York, and Beverley.
- Wheat Belt - South SA3 (pop 19,357) includes Brookton, Kulin, Murray, Narrogin, and Wagin.

Coronary heart disease and **COPD** were among the **leading causes** of disease burden

39% of adults aged 16+ years are **obese**

22% of adults aged 16+ years have **high blood pressure**

22% of adults aged 16+ years do no **leisure time physical activity**

2ND

Mental ill-health was the **second leading** cause of disease burden

6% of the population in Wheat Belt – North SA3 and **5%** in Wheat Belt – South SA3 accessed a **GP mental health treatment plan**

1% of the population accessed a **clinical psychologist** through Medicare

21% of people are aged **65 years and over**

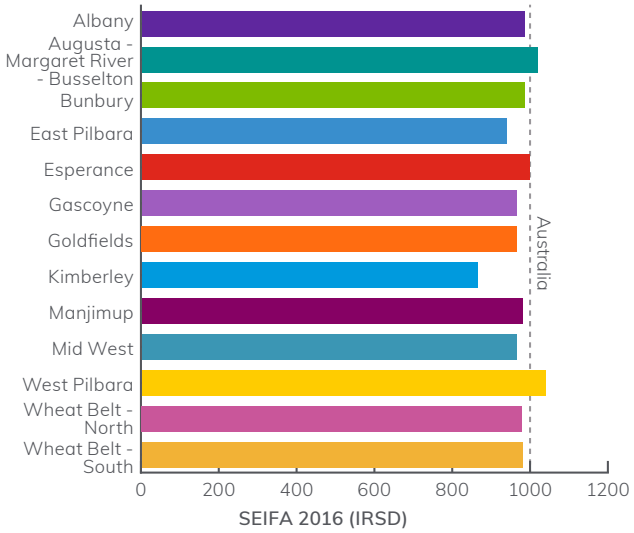
There are an estimated **4,512 Aboriginal people** residing in the region

22% of Aboriginal people in Wheat Belt – North SA3 and **29%** in Wheat Belt – South SA3 received an **Indigenous-specific health check** through Medicare in 2019-20

Figure 1 - Population (URP 2021) in Country WA PHN by SA3

There are similar levels of socioeconomic disadvantage in Wheat Belt – North SA3 (IRSD=977) and Wheat Belt – South SA3 (IRSD=978) and both sub-regions were more disadvantaged compared to the state (IRSD=1016) (Public Health Information Development Unit, 2021b). About4.6% of people in Wheat Belt – North SA3 and 4.3% of people in Wheat Belt – South SA3 are Aboriginal (Public Health Information Development Unit, 2022)..

Figure 2 - SEIFA 2016 Index of Relative Socioeconomic Disadvantage (IRSD) score in Country WA PHN by SA3 (Public Health Information Development Unit, 2021)



Vulnerable Population Groups

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 people who are: culturally and linguistically diverse (CALD); lesbian, gay, bisexual, transgender, intersex, or queer (LGBTIQ+); homeless; living with a severe disability or caring for someone with a disability; developmentally vulnerable; and victims of family, domestic or sexual violence.

- Only 0.4% of people in Wheat Belt – North SA3 (191 people) and 0.3% in Wheat Belt – South SA3 (46 people) were born overseas and have poor English proficiency compared to 1.8% across the state (44,521 people) (Public Health Information Development Unit, 2022).
- Around 5.3% of people in Wheat Belt – North SA3 and 5.2% in Wheat Belt – South SA3 have a profound or severe disability compared to 4.6% across the state (Australian Bureau of Statistics, 2021a).
- About 11% of people in Wheat Belt – North SA3 and Wheat Belt – South SA3 provide unpaid assistance to people with a disability, consistent with the state rate (Public Health Information Development Unit, 2022).
- About 21% of children in Wheat Belt - North SA3 and 16% in Wheat Belt – South SA3 were developmentally vulnerable on one or more domains compared to 19% across the state (Public Health Information Development Unit, 2021b).
- In 2016, it was estimated that 224 people in Wheat Belt - North SA3 and 49 people in Wheat Belt - South SA3 experienced homelessness (Australian Bureau of Statistics, 2018). About 28% of homeless people in Wheat Belt – North SA3 and 61% in Wheat Belt - South SA3 were living in ‘severely’ crowded’ dwellings, requiring at least four extra bedrooms to accommodate the people usually living there.

LGBTIQ+ populations

LGBTIQ+ is an acronym commonly used to describe lesbian, gay, bisexual, trans/transgender, intersex, queer and other sexuality, gender, and bodily diverse people and communities. Many LGBTIQ+ people face discrimination and disparities connected to their gender identification and/or sexuality that impact their physical and mental health and access to healthcare and other services (Equality Australia, 2020). LGBTIQ+ people are known to have a higher risk of certain chronic diseases such as cancers, asthma, obesity, and cardiovascular disease (Conron et al., 2010; McKay, 2011; Simoni et al., 2017). Moreover, some members of LGBTIQ+ communities, particularly lesbian and bisexual women, have higher rates of smoking compared to the general population (Praeger et al., 2019), which increases their risk of developing a chronic disease.

Family violence is a significant concern and is compounded by isolation and reduced access to services (Rainbow Health Victoria, 2020). Studies indicate that the LGBTIQ+ people experience intimate partner violence at similar or higher rates compared to heterosexual people (Rollè et al., 2018). There is evidence that LGBTIQ+ people are more likely to experience homelessness (McNair et al., 2017) and that discrimination can lead to adverse outcomes in terms of employment and income, particularly for trans and gender diverse people (Mizock & Mueser, 2014).

Chronic Disease

Chronic diseases are long-term, non-communicable conditions and play a significant part in mental and physical ill health, disability, and premature death. Moreover, people with chronic disease often have two or more conditions (multi-morbidity) such as a mental health condition as well as a physical condition, creating complex health needs and presenting challenges for treatment. In Australia, national surveillance focuses on 10 types of chronic conditions: arthritis, asthma, back problems, cancer, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions, and osteoporosis (Australian Institute of Health and Welfare, 2020b). In 2017-18, almost half of all Australians (47%) were estimated to have at least one of the above conditions and 20% were estimated to have at least two conditions (Australian Bureau of Statistics, 2018b). Age is an important determinant of health and people aged 65 years and over are more likely to be diagnosed with a chronic condition.

This section focuses on chronic conditions other than mental and behavioral conditions, which are discussed in the Mental Health section.

Figure 3 - The proportion of Aboriginal population versus non-Indigenous population with listed type of chronic conditions for the Wheatbelt.

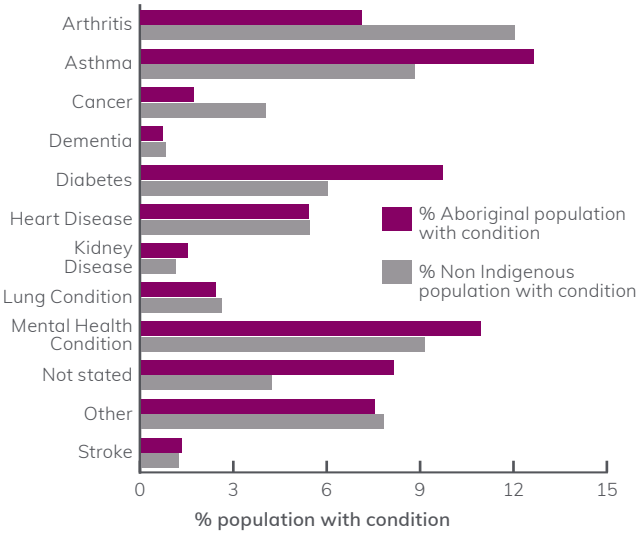
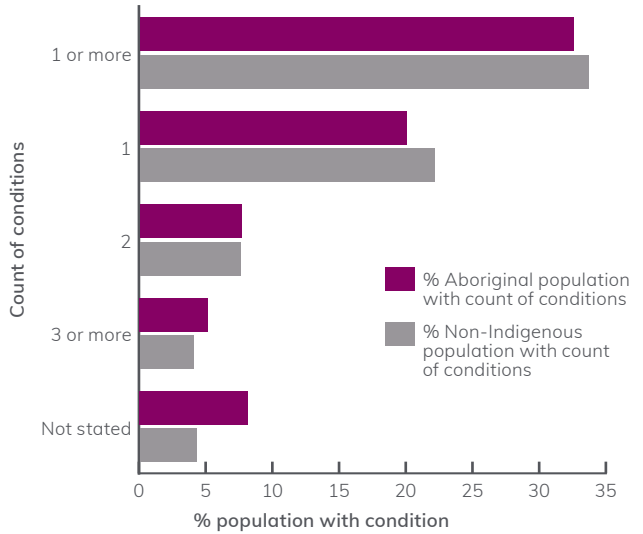


Figure 4 - The proportion of Aboriginal population versus non-Indigenous population with listed number of chronic conditions for the Wheatbelt.



Risk factors

Established risk factors for chronic disease include having high blood pressure, being overweight or obese, smoking, doing little or no exercise and having high levels of stress. Psychosocial factors such as social isolation and loneliness also contribute to chronic ill health (Royal Australian College of General Practitioners, 2020). Risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (Australian Institute of Health and Welfare, 2020b). The Wheatbelt region had prevalence rates of risk factors that were significantly higher than state rates, with similar rates for Wheat Belt – North and Wheat Belt – South SA3s. In 2017-18, children aged 2-17 years in the region were significantly more likely to be obese (ASR=11%) compared to the state (ASR=7.9%) (Public Health Information Development Unit, 2021b). Moreover, data from the Health and Wellbeing Surveillance System (HWSS) survey 2015-19 indicated that estimated prevalence rates of obesity among adults aged 16 years and over were significantly higher in the region (39%) compared to the state (30%) (Epidemiology Branch, 2021a). The region also had higher rates of high blood pressure (22% in Wheat Belt – North SA3 and 21% in Wheat Belt - South SA3) and Wheat Belt – North SA3 had a significantly high rate of people who did no leisure time physical activity (24%). Interviews with local stakeholders indicated that a high proportion of people aged 65 years and over together with a lack of food security were significant risk factors for the development of chronic disease in the region.

WAPHA is a steward of the WA Healthy Weight Action Plan 2019-24, which focuses on early intervention of people identified as at-risk of becoming overweight and management of people who currently live with obesity. This involves multi-component, multi-levelled strategies delivered as part of an integrated shared care model. Through the Healthy Weight GP project, WAPHA has committed to supporting GPs to provide options for patients who want to improve their health. Key deliverables include the development of a weight management

'hub' (website) with links to Health Pathways and local services for weight management, training for general practice staff, and tools to assist general practices in implementing weight management services as a quality improvement activity. The website is due for launch in the third quarter of 2021.

General Practice Incentives Program Quality Improvement Incentive (PIP QI)

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with their weight classification recorded within the last 12 months, the proportion of patients with information available to calculate risk of cardiovascular disease (CVD), and the proportion of patients with diabetes that have a HbA1c measurement recorded. PIP QI data indicated the following for Wheat Belt – North SA3 (24 practices) and Wheat Belt – South SA3 (nine practices) compared to the state (497 practices).

- The percentage of general practice records for clients aged 15 years and over that did not have a weight classification recorded within the last 12 months was 70% in Wheat Belt – North and 75% in Wheat Belt – South compared to 76% across the state.
- The percentage of general practice records for clients aged between 45-74 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 32% in Wheat Belt – North and 35% in Wheat Belt – South compared to 43% across the state.
- The percentage of general practice records for clients with a diagnosis of diabetes that did not have a HbA1c measurement result recorded within the last 12 months was 29% in Wheat Belt – North and 28% in Wheat Belt – South compared to 28% across the state.

We note that PIP QI data include private general practices only and do not include GP services provided by non-government organisations.

Burden and prevalence of disease

Burden of disease measures the impact of different diseases or injuries on a population, including both physical and mental ill health and substance use disorders. It combines the years of healthy life lost due to living with ill-health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden) to give a total burden reported using the disability-adjusted life years (DALYs) measure. The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that the Wheatbelt region had a 1.3 times higher rate of fatal burden and a 1.1 times higher rate of non-fatal burden compared to the metropolitan regions. Chronic disease accounted for a substantial proportion of the burden of disease. Coronary heart disease and COPD were among the leading five causes of burden for both males and females, while lung cancer was the third leading cause for males.

The 2021 Census indicated that after adjusting for age, 18% of people across the state had one long-term health condition (including both physical and mental health conditions) and 8.2% had two or more co-morbid conditions (Public Health Information Development Unit, 2022). In the Wheatbelt region, age-adjusted prevalence rates in Wheat Belt – North SA3 and Wheat Belt – South SA3 respectively were 18% and 19% for one long-term condition and 8.7% and 8.4% for two or more conditions. Compared to the state, Wheat Belt - South SA3 had relatively high rates of arthritis (ASR=9.0% compared to 7.9%) and kidney disease (ASR=1.3% compared to 0.8%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Potentially preventable hospitalisations (PPHs) for chronic conditions

Potentially preventable hospitalisations (PPHs) are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 10 chronic conditions that are classified as potentially preventable through behaviour modification, lifestyle change and timely care: angina, asthma, bronchiectasis, COPD, congestive cardiac failure, diabetes complications, hypertension, iron deficiency anaemia, nutritional deficiencies, and rheumatic heart diseases.

In 2017-18, the age-standardised rate of PPHs per 100,000 for total chronic conditions was 1187 in Wheat Belt – North SA3 and 1283 in Wheat Belt – South SA3 compared to 1109 across the state (Australian Institute of Health and Welfare, 2019).

In this report, we regard a PPH 'hotspot' as an area with a hospitalisation rate that is more than 50% above the Australian rate for at least four out of five consecutive years (Public Health Information Development Unit, 2020). In the five years from 2012-13 to 2016-17, there were three population health areas (PHAs) in the region that were hotspots for chronic conditions. Cunderdin/Merredin/Mukinbudin PHA and Narrogin PHA were hotspots for COPD, while Dowerin/Moora/Toodyay PHA was a hotspot for diabetes complications.

Management of chronic disease in primary care

From 2018-19 to 2020-21, percentage of population utilisation of GP chronic disease management plans (CDMPs) increased from 15% to 17% in Wheat Belt – North SA3 and was consistent with the rate for SA3s in inner regional areas. Wheat Belt – South SA3 had a relatively high utilisation of CDMPs, increasing from 19% to 20% compared to 15% for SA3s in outer regional areas (Australian Institute of Health and Welfare, 2021d).

Childhood immunisation rates

The National Immunisation Program (NIP) aims to increase national immunisation coverage to reduce the number of vaccine-preventable diseases in Australia. A key priority of the program is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. Data from the Australia Immunisation Register from 1st April 2020 to 31st March 2021 indicated that in Country WA PHN, immunisation coverage was relatively low for children aged 2 years (Department of Health, 2021b). About 94.1% of children were fully immunised at 1 year and 94.5% at 5 years compared to only 90.3% at 2 years.

In the Wheatbelt region, childhood immunisation rates were below target for children aged 2 years, at 93.0% in Wheat Belt – North SA3 and 91.9% in Wheat Belt - South SA3. This suggests that interventions should be targeted to increase immunisation coverage for this age group.

Cancer screening

There are three national cancer screening programs in Australia: BreastScreen Australia, National Cervical Cancer Screening Program (NCSP), and National Bowel Cancer Screening Program (NBCSP). In 2018-19, cancer screening participation rates across WA were 46% for bowel cancer (people aged 50-74 years), 55% for breast cancer (women aged 25-74 years) and 48% for cervical cancer (women aged 25-74 years) (Australian Institute of Health and Welfare, 2021a). The data indicate that compared to the state, cancer screening participation rates were lower in the Wheatbelt region for breast and cervical cancers. Participation rates were 46% in Wheat Belt - North SA3 and 48% in Wheat Belt - South SA3 for bowel cancer screening, 51% in Wheat Belt – North SA3 and 52% in Wheat Belt - South SA3 for breast cancer screening, and 39% in Wheat Belt - North SA3 and 42% in Wheat Belt – South SA3 for cervical cancer screening. We note that participation in the new five-year program for cervical cancer screening cannot be accurately reported until there are 5 years of data available (2018-22).

Avoidable mortality

In 2013-17, the median age of death was 77 years in Wheat Belt – North SA3 (50% of people who died were younger than 77 years) and 79 years in Wheat Belt – South SA3 compared to 80 years across the state (Public Health Information Development Unit, 2021b).

Avoidable mortality refers to deaths of people under 75 years that are potentially avoidable under the current health care system (primary or hospital care). In 2013-17, the age-standardised death rate per 100,000 from avoidable causes in Wheat Belt – North SA3 (149) was significantly higher than the state rate (122) (Public Health Information Development Unit, 2021b). Wheat Belt – South SA3 avoidable death rates were similar to state rates.

Utilisation of primary care services

In 2020-21, the percentage of the population who visited a GP in the last year was similar in both SA3s and did not change substantially from 2018-19. About 85% of people in Wheat Belt – North SA3 and 86% in Wheat Belt – South SA3 visited a GP (Australian Institute of Health and Welfare, 2021d).

Between 2018-19 and 2020-21, the percentage utilising after-hours GP services was low in both areas and decreased from 8.9% to 7.8% in Wheat Belt – North SA3 (9.3% in inner regional areas nationally) and from 5.8% to 4.7% in Wheat Belt – South SA3 (11% in outer regional areas nationally). However, both areas had utilisation rates of GP health assessments that were above the corresponding national rate for their socioeconomic group SA3s, at 6.3% in Wheat Belt – North SA3 (5.4% in inner regional areas nationally) and 7.0% in Wheat Belt – South SA3 (6.2% in outer regional areas nationally). We note that these data include Medicare-subsidised services only and may represent an under-estimate because ACCHOs and WACHS provide primary care services in this region.

Utilisation of Medicare-subsidised allied health services in both SA3s was below corresponding national rates for their socioeconomic group. In 2020-21, about 35% of the population in Wheat Belt - North SA3 (41% nationally in inner regional areas) and 32% in Wheat Belt – South SA3 (37% nationally in outer regional areas) utilised allied health services (Australian Institute of Health and Welfare, 2021d). The percentage of the population that utilised optometry was 29% in Wheat Belt – North SA3 and 26% in Wheat Belt – South SA3. We note that optometry services are more likely to be subsidised by Medicare compared to other types of allied health services. These figures do not include allied health care provided by Aboriginal health services and other non-government organisations.

Between 2018-19 and 2020-21, utilisation of nurses and Aboriginal health workers increased from 8.7% to 10% in Wheat Belt – North SA3 (11% nationally in inner regional areas) and from 8.1% to 10% in Wheat Belt – South SA3 (the same as the national rate for outer regional areas) (Australian Institute of Health and Welfare, 2021d).

Access Relative to Need (ARN) Index

The Access Relative to Need (ARN) Index measures access to primary health care relative to predicted need and is based on methodology developed by the Australian Institute of Health and Welfare in 2014. The ARN index is based on the following information:

- The location of health services and the populations they serve
- The number of GP (FTE) working at each location (estimated using data at SA2 level – demand weighted distribution)
- The demographic and socioeconomic characteristics of the population.

In early 2021, WAPHA updated the ARN Index for SA2s in Western Australia to identify areas with a low access to GPs relative to need. Within the Wheatbelt region, Gingin – Dandaragan SA2, Toodyay SA2, and Chittering SA2 in Wheat Belt – North SA3 and Murray SA2 in Wheat Belt – South SA3 were in the first decile (access relative to need

was lower than 90% of SA2s in the state) for access to any GPs as well as access to bulk billing GPs. Moreover, York - Beverley SA2 (Wheat Belt – North SA3) and Brookton SA2 (Wheat Belt – South SA3) were in the first decile for access to any GPs, while Mukinbudin SA2 and Moora SA2 (Wheat Belt – North SA3) were in the first decile for access to bulk billing GPs.

Workforce

General practitioners (GPs)

In 2020, Wheat Belt – North SA3 had 44 GP full-time equivalent (FTE) and Wheat Belt – South SA3 had 17 GP FTE, representing 0.8 FTE per 1000 residents in each sub-region compared to 1.1 FTE per 1000 across the state[2]. The ratio of vocationally registered (VR) to non-VR GPs was very low in Wheat Belt – South SA3 (4.3) compared to the state (12) and Wheat Belt – North SA3 had the second lowest ratio in WA (2.0).

Primary care nurses

In 2019, Wheat Belt – North SA3 had 80 primary care nurse full-time equivalent (FTE) or 1.4 FTE per 1000 residents and Wheat Belt – South SA3 had 36 FTE or 1.8 FTE per 1000 residents compared to 1.7 FTE per 1000 across the state[2].

Interviews with local stakeholders indicated that workforce issues such as high staff turnover and staff shortages affected the quality of primary care provided in the region.

Aged Care

The Wheatbelt region has a high proportion of older adults. In 2021, about 24% of people in Wheat Belt - North SA3 and 23% in Wheat Belt - South SA3 were aged 65 years and over compared to 16% across the state (Australian Bureau of Statistics, 2021a). Wheat Belt - North SA3 had the largest population in this age group with 13,215 people compared to 4,383 people in Wheat Belt - South SA3.

Age is an important determinant of health and people aged 65 years and over are more likely to have complex and/or chronic conditions as well as comorbidities. Moreover, geriatric syndromes later in life (usually after the age of 85 years) including pressure ulcers, incontinence, falls, and delirium have substantial implications for quality of life as well as health care utilisation (Brown-O'Hara, 2013). The Western Australian Burden of Disease Study 2015 (Department of Health Western Australia, 2021) indicated that in the Wheatbelt region, coronary heart disease, COPD and dementia were among the leading causes of disease burden for people aged 65 and over.

Data from the 2021 Census (Australian Bureau of Statistics, 2021a) indicated that 30% of people aged 65 years and over across the Wheatbelt region had one long-term health condition (including both physical and mental health conditions) and 25% had two or more co-morbid conditions compared to 31% and 26%, respectively across the state. The most common types of conditions among older adults in the region were arthritis (27%), heart disease (15%), and diabetes (13%). For a discussion on the methodologies of estimating the prevalence of long-term health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

The Dementia in Australia 2022 report from the Australian Institute of Health and Welfare contains up-to-date information on the prevalence of dementia (Australian Institute of Health and Welfare, 2022). In 2021, it was estimated that there were 33,364 people in Western Australia living with dementia, with 6,569 in Country WA PHN. Around 60% of people with dementia were female. In the Wheatbelt region, there were 1,327 people with dementia, with the highest number in Northam SA2 (177) (in the Census, 3,318 people self-reported living with dementia in Country WA PHN (Public Health Information Development Unit, 2022)). For a discussion on the methodologies of estimating dementia prevalence please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Utilisation of health services

In Country WA PHN, 41% of people aged 80 years and over had a GP Health Assessment in 2020-21, similar to the rate for regional PHNs (39%) and above the national rate (35%) (Australian Institute of Health and Welfare, 2021d). The number of GP attendances in residential aged care facilities (RACFs) was 16.1 per patient, compared to 15.4 for regional PHNs and 17.8 nationally. Data were not available at the SA3 or regional level.

Medicare items are available for in-depth assessment of a patient 75 years and over. This provides a structured way of identifying health issues and conditions that are potentially preventable or amenable to interventions to improve health and quality of life. Data for participating general practices indicate that the Wheatbelt has the highest rates of health assessments for people over 75 in the Country WA PHN, at 29% for Wheat Belt - North (23 practices) and 25% for Wheat Belt - South (eight practices) compared to 21% for Country WA PHN.

Aged care services

The aged care system in Australia offers three main types of service: the Commonwealth Home Support Program, Home Care Packages, and residential care. Across Australia, more than two-thirds of people using aged care services access support from home (Royal Commission into Aged Care Quality and Safety, 2021).

The Home Care Packages (HCP) program provides support to older people with complex needs to help them live independently in their own home. Support provided includes help with household tasks, equipment, minor home modifications, personal care, and clinical care such as nursing and allied health services. There are four levels of HCPs from level 1 (basic care needs) to level 4 (high care needs). Across Australia, wait times for approved HCPs range from 3-6 months for level 1 to at least 12 months for level 2 and above (Department of Health, 2021a).

Home care in the Wheatbelt is provided by charitable and religious organisations and local government. There were 11 home care services available. As at December 2020, there were 648 people in a HCP in the Wheatbelt Aged Care Planning Region (ACPR) (Department of Health, 2021a). An additional 330 people were waiting for a HCP with 81 people (25%) requiring the highest level of care (level 4).

Despite having 18 residential aged care facilities Wheat Belt - North SA3 had a relatively low ratio of residential aged care (RACF) beds to population. The number of residential beds to 1000 people aged 70 years and over was only 47 in Wheat Belt - North SA3 compared to 63 in Country WA PHN and 72 across the state (Australian Institute of Health and Welfare, 2021b). Conversely, Wheat Belt - South SA3 had 8 residential facilities but 74 beds per 1000 people aged 70 years and over.

Wheat Belt – South SA3 had a relatively high supply of aged care nurses compared to the state. In 2019, aged care nurse full-time equivalent (FTE) per 1000 residents aged 70 years and over was 11 in Wheat Belt – North SA3 (84 FTE) and 21 in Wheat Belt – South SA3 (57 FTE) compared to 12 across the state[2]. Average weekly hours worked by aged care nurses were 36 hours per week in both sub-regions compared to 33 hours per week across the state.

Feedback from local stakeholders indicates that there are minimal community services to assist people to age in place in their own homes. A shortage of services means that people who are eligible for aged care packages may not be able to access the required services.

Alcohol and Other Drugs

In Country WA, 28.2% of residents in Wheat Belt - North and 23.7% in Wheat Belt - South SA3s were at long-term risk from alcohol consumption (Epidemiology Branch, 2021b). Although Wheat Belt - North exceeded the state rate (26.5%) it was not statistically significantly higher than WA rate (Epidemiology Branch, 2021b). The proportion of the population who are current smokers in Wheat Belt - North and Wheat Belt - South SA3s were 14.2% and 14.8% respectively, compared to 11.2% in WA (Epidemiology Branch, 2021b).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. Improvement measures include the proportion of patients with a smoking status and proportion of patients with an alcohol consumption status. In Country WA PHN, Wheat Belt - South SA3 (35% across nine practices) had a higher percentage of GP patient records that did not have a smoking status recorded compared to Wheat Belt - North SA3 (28% across 24 practices) and was similar to the state rate (37%). Similarly, the percentage of GP patient records that did not have an alcohol consumption status recorded was greater in Wheat Belt - South SA3 (46%) compared to Wheat Belt - North SA3 (38%) and was equal to the state rate.

Accidental overdose

Australia's Annual Overdose Report, produced by the Penington Institute, reported 2,070 drug-related deaths in 2018 of which 1,556 were unintentional (Penington Institute, 2020). Of this, males were more than three times as likely than females to suffer an unintentional drug-induced death (71.5% of deaths) (Penington Institute, 2020). Middle-aged people were found to be most at risk of overdose (Penington Institute, 2020).

Opioids continued to be the largest overall drug group identified in drug-induced deaths (Penington Institute, 2020). In recent years, the greatest increase of unintentional drug-induced deaths has occurred in WA, increasing from 6.4 per 100,000 in 2012 to become the highest rate Australia-wide in 2018 at 8.8 per 100,000 (Penington Institute, 2020).

From 2014-2018, the rate of unintentional drug-induced deaths in Country WA was 8.3 per 100,000 (Penington Institute, 2020). In 2014-2018 Wheat Belt - North SA3 was categorised in the second highest rate range of 7.5-9.9 deaths per 100,000 for unintentional drug-induced deaths (Penington Institute, 2020). Due to insufficient data, a rate is unavailable for Wheat Belt - South SA3.

Services

The Wheatbelt region has established a Local Drug Action Team to prevent and minimise alcohol and other drug-related harms. The Brookton Pingelly team deliver alcohol and other drug harm prevention activities in Pingelly, Brookton, Popanyinning and Wandering.

The Wheatbelt Community Alcohol and Drug Service (WCADS), run by Holyoake, provides assessment, referral and counselling services in Northam, Narrogin, and Merredin with outreach services in Moora, Gingin, York, Goomalling, Wongan Hills, Brookton, Kellerberrin, Wagin and surrounding areas.

Mental Health

Mental health was the second leading cause of disease burden in the Wheatbelt region contributing 13% of the total disease burden for the region (Department of Health Western Australia, 2021). Depressive disorders contributed to the disease burden for women in the Wheatbelt. While suicide and self-inflicted injuries contributed to the disease burden for men.

The WA Health and Wellbeing Surveillance System (HWSS) survey was established in 2002 to monitor the health status of Western Australians. The data collected includes population-weighted estimates of the prevalence of mental health conditions such as anxiety, depression, psychological distress, and suicide ideation (Epidemiology Branch, 2021b). For a discussion on the methodologies of estimating the prevalence of mental health conditions, please refer to the 'Additional Data Needs and Gaps' section in the Introduction.

Anxiety, depression, and psychological distress

In WA, 8.5% of people have been diagnosed with depression, 9.3% with anxiety and 8.8% experienced high psychological distress. Rates were similar in the Wheatbelt. For Wheat Belt – North and South, respectively, 7.5% and 7.0% had anxiety, 7.5% and 6.8% had depression, and 8.0% and 4.8% had high psychological distress (after adjusting for age in the Census data, the prevalence of mental health conditions, including anxiety and depression, for all ages and people aged 15 years and over, respectively were 8.4% and 9.8% in Wheat Belt - North SA3 and 8.6% and 10% in Wheat Belt – South SA3 (Public Health Information Development Unit, 2022)).

Suicide and self-harm

Between 2014 and 2018, 51 people died from suicide in Wheat Belt - North and 15 in Wheat Belt - South. Deaths from suicide were 15 per 100,000 for the state. In Wheat Belt - North deaths from suicide were 18 per 100,000.

The Health and Wellbeing Surveillance Survey collects data on suicidal ideation among adults aged 16 years and over. Survey participants are asked if they thought seriously about ending their own lives. About 3.3% of residents in Wheat Belt – North SA3 and 6.0% in Wheat Belt – South SA3 reported that they experienced suicide ideation compared to 5.5% of people across the state.

Self-harm is a strong risk factor for suicide. In 2018-19 Wheat Belt - South had the second highest rate of self-harm hospitalisation in the state. Self-harm hospitalisations were higher for females than males in both Wheatbelt- South and Wheat Belt - North.

Youth mental health

Mental health is the leading cause of disease burden for youth in the Wheatbelt. Suicide and self-inflicted injuries were the leading cause of burden of disease for people aged 15-24 years contributing to 19% of the disease burden. Depressive disorders were the second leading cause of disease burden for this age cohort followed by anxiety disorders which was the 3rd leading cause (Department of Health Western Australia, 2021).

In 2018-19 in Wheat Belt - South (209.2 per 100,000) were hospitalized for self-harm above state rates (129 per 100,000) (Australian Institute of Health and Welfare, 2020c).

Services

Mental health services in the Wheatbelt region are provided by organisations including the WA Country Health Service (WACHS) and various not-for-profit organisations. WACHS operates the Wheatbelt Mental Health Service, with teams located in Northam, Gingin, Merredin and Narrogin. Regular visits are made to outlying areas and outreach is supported by telephone consultation and videoconferencing. Clinical liaison is also provided to hospitals within the region. The following Mental Health programs are available: Aboriginal (all ages), Adult (18-65 years), Child and Adolescent (0-18 years), Seniors (65+ years), and Youth (15-24 years).

The unique population distribution of the Wheatbelt, with no single central town, together with its proximity to Perth makes it difficult to attract a stable workforce. No single place has the critical population size required to make business viable for service providers. As a result, residents often attend services in Perth.

There is a low supply of mental health professionals in the Wheatbelt. In 2020-21, the percentage of population utilisation of GP Mental Health Treatment Plans in the Wheatbelt region (7.4% in Wheat Belt - North and 7.0% in Wheat Belt - South) was comparable to Country WA PHN (7.1%). In the Wheatbelt, around 1.5% of the population accessed a clinical psychologist through the Better Access MBS program. This is consistent with utilisation across Country WA (Australian Institute of Health and Welfare, 2021d).

Aboriginal Health

In 2021, there were 3,426 Aboriginal people residing in the Wheatbelt region (Australian Bureau of Statistics, 2021a). The Wheatbelt is home to three distinct Aboriginal groups: Njaki Noongar, Ballardong Noongar and Gubrun.

For the first time, data on Chronic (Long Term Health) conditions were captured in the 2021 Census using a single question “Has the person been told by a doctor or nurse that they have any of these long-term health conditions?”.

In the Wheatbelt region, more Aboriginal people reported having the following conditions than non-Aboriginal people:

- 12.6% of Aboriginal people reported having Asthma compared to 8.8% non-Aboriginal people.
- 9.7% of Aboriginal people reported having Diabetes 6% of non-Aboriginal people.

Still in the Wheatbelt, 685 (20%) Aboriginal persons responded as having 1 Chronic condition, 260 (7.6%) have two Chronic conditions, while 174 (5.1%) have three or more Chronic conditions, 2045(59.7%) have no Chronic condition, while 277 (8.1%) didn’t respond to the question (Australian Bureau of Statistics, 2021a).

Data collected on Aboriginal socio-economic indicators by Indigenous area (IARE) showed that there was a significant level of disadvantage experienced by Aboriginal people in the Wheatbelt compared to Aboriginal people across WA. The most disadvantaged area in the region was Northam (IRSEO Index = 84). Of the seven IAREs in the region, five had low rates of female labour force participation. There were three areas with high rates of unemployment, two with high rates of Aboriginal low-income families, and three with high rates of Aboriginal jobless families with children aged under 15 years. All IAREs except Murray – Waroona – Boddington had a high rate of dwellings with no internet connection, and four areas had high rates

of government housing (Public Health Information Development Unit, 2021a).

Indicators of maternal and early childhood health outcomes showed that about two-thirds of Aboriginal mothers in Campion IARE smoked during pregnancy, a quarter of Aboriginal babies born in Narrogin – Wagin – Katanning IARE were of low birth weight, and about half of all children in Moora – Chittering IARE were developmentally vulnerable on one or more domains (Public Health Information Development Unit, 2021a).

The Practice Incentives Program Quality Improvement incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of quality care. PIP QI data indicated that the proportion of general practice records for Indigenous clients aged between 35-44 years that did not have information available to calculate their absolute risk of cardiovascular disease (CVD) was 54% in Wheat Belt - North SA3 (24 practices) and 68% in Wheat Belt - South SA3 (nine practices) compared to 62% across the state (497 practices). We note that these data include only private general practices and do not include health services provided by non-government organisations. The percentage of GP patient records with Aboriginal status not recorded was 25% in Wheat Belt – North and 30% in Wheat Belt – South compared to 33% across the state.

Housing

Regions with the highest proportion of Aboriginal persons living in crowded dwellings were within the IAREs of Hotham-Kulin (21%), Moora-Chittering (20%) and Murray-Waroona-Boddington (19%) (Public Health Information Development Unit, 2021a).

Child immunisation

A key priority of the National Immunisation Program Schedule is to work towards achieving immunisation coverage rates of at least 95% for children aged 1, 2 and 5 years. In the Wheat Belt region, childhood immunisation rates below target for children aged 2 years were 76% in Narrogin-Wagin-Katanning, 87% in Northam and 88% in Avon and IAREs. This suggests that interventions should be targeted to increase immunisation coverage for this age group (Public Health Information Development Unit, 2021a).

Lower urgency emergency department presentations

High rates of non-urgent ED attendances indicate there may be a gap in primary care services. Rates of non-urgent ED presentation for Aboriginal people in the Wheatbelt were similar to state rates (Public Health Information Development Unit, 2021a).

Avoidable deaths by selected causes

Avoidable deaths by selected conditions for Aboriginal persons aged 0 to 74 years were statistically significantly higher in the following regions for:

- Circulatory system diseases: Narrogin-Wagin-Katanning (131 per 100,000).
- Diabetes: Narrogin-Wagin-Katanning (92 per 100,000)
- Avoidable deaths by external causes (transport accidents, accidental drowning and submersion): Northam (147 per 100,000) and Narrogin-Wagin-Katanning (107) (Public Health Information Development Unit, 2021a).

Potentially preventable hospitalisations (PPHs)

Between 2015-16 and 2017-18 the following PPHs were statistically significantly higher in the IAREs of the Wheatbelt region.

PPHs for chronic disease:

- Chronic angina: Northam (656 per 100,000) and Avon (339)
- Asthma: Moora – Chittering (831 per 100,000) and Narrogin – Wagin – Katanning (574)
- CCF: Narrogin – Wagin – Katanning (748 per 100,000), Moora – Chittering (502) and Northam (451)
- Diabetes: Narrogin – Wagin – Katanning (673 per 100,000)
- Iron deficiency: Avon (359 per 100,000) and Moora - Chittering (390)
- COPD: Moora - Chittering (951 per 100,000) and Narrogin – Wagin – Katanning (932) (Public Health Information Development Unit, 2020).

PPHs for acute conditions:

- Acute convulsions and epilepsy: Narrogin – Wagin – Katanning (1,301 per 100,000) and Northam (979)
- Acute dental: Narrogin – Wagin – Katanning (830 per 100,000) and Moora - Chittering (803)
- Acute ear, nose and throat infections: Narrogin – Wagin – Katanning (784 per 100,000).

PPHs for vaccine-preventable conditions:

- Pneumonia and influenza: Northam (382 per 100,000) (Public Health Information Development Unit, 2020).

General Practice

Chronic disease contributes significantly to the differences in life expectancy between Aboriginal and non-Aboriginal people. Aboriginal people experience 2.3 times the rate of disease burden, with an age standardised death rate for chronic disease 3.8 times the rate among non-Aboriginal people. In WA, 60% of Aboriginal people have been diagnosed with at least one chronic condition.

Aboriginal and Torres Strait Islander people can access specific services aimed at Closing the Gap in health outcomes. It is important that General Practices ask all patients if they identify as Aboriginal and/or Torres Strait Islander. This assists with ensuring patients are provided with the option

of accessing information and services specifically designed to meet their needs.

Through Medicare, Aboriginal and Torres Strait Islander people can receive Indigenous-specific health checks from their doctor, as well as referrals for Indigenous-specific follow-up services. In March 2020, telehealth items for Indigenous health checks were introduced in response to COVID-19 and associated restrictions (Australian Institute of Health and Welfare, 2021c). In 2019-20, the proportion of the Indigenous population that received an Indigenous Health Check was higher in Wheat Belt – South SA3 at 29.4% compared to 21.6% in Wheat Belt - North and 25.1% across Country WA PHN. Face-to-face was the preferred method compared to telehealth, which had a low uptake of only 0.2% in Wheat Belt – North, the lowest in Country WA PHN. These rates are not publishable for Wheat Belt - South because of small numbers, confidentiality, or other concerns about the quality of the data. Both Wheat Belt – North (31.2%) and Wheat Belt – South (26.3%) had a lower proportion of patients that received follow up services compared to the State (46.8%) (Australian Institute of Health and Welfare, 2021c). We note that differences in follow-up rates may partly reflect differences in health status and need for follow-up care.

Digital Health

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. In 2018, every Australian established a 'My Health Record' unless they choose to opt out. Information available through My Health Record can include a patient's health summary, medication prescribing and dispensing history, pathology reports, diagnostic imaging reports and discharge summaries.

Given the large geographical size of WA, COVID-19 saw a very rapid adoption of virtual methods of consultation of WA's hospital-based outpatient clinics. Rates that were previously in low 10 to 15% rapidly moved to the 60 to 80% across a range of clinics and hospitals (Koh, 2020). It appears that the focus on digital health including telehealth consultations during COVID-19 is helping fast track the adoption of technology and more providers are seeing the My Health Record as a valuable repository of health data as it is accessible to all healthcare providers without the need for fax machines or postal services. As of March 2021, there are now 22.93 million My Health Records Australia-wide and more than 20.4 million or 89 per cent of them contain health data (My Health Record, 2021).

A survey by The Royal Australian College of General Practitioners (RACGP) revealed more than 99% of surveyed GPs were offering patients consultation via telehealth, including phone and video options (The Royal Australian College of General Practitioners, 2020). More than 4.3 million health and medical services have been delivered to a total of more than three million patients through the telehealth items introduced by the Australian Government for the COVID-19 pandemic (Department of Health Western Australia, 2020).

According to a Household Impacts of COVID-19 Survey results conducted from 16-25 April 2021, 14% of Australians used a Telehealth service in the previous four weeks, with the most common reasons being for convenience (68%), saving time (42%) and not needing to travel (38%) (Australian Bureau of Statistics, 2021b). The April 2021 Telehealth usage (14%) was a decrease from November 2020 (18%), June 2020 (20%) and May 2020 (17%) (Australian Bureau of Statistics, 2021b). The survey also revealed that 30% of Australians now preferred to access telehealth services more compared to before COVID-19, particularly family households with children (39%), people aged 18 to 34 years (38%), women (34%) and men (26%) (Australian Bureau of Statistics, 2021b).

Pre-COVID-19 MBS utilisation for telehealth services in Wheat Belt - North was equal to the national rate (0.21 per 100 resident population) while Wheat Belt - South recorded a higher rate at 0.39. Both SA3 areas exceeded Perth North PHN (0.01) and Perth South PHN (0.03), however were lower than Country WA (0.42). Unreliable internet connectivity has been identified as an issue in the Wheatbelt, which impacts telehealth utilisation (Regional Development Australia Wheatbelt WA, 2017).

COVID-19 MBS telehealth items have been made available to GPs and other health professionals since March 2020 to help reduce the risk of community transmission of COVID-19. Data on GP COVID-19 consultations are only available at the state level. In the first year to February 2021, there were 80,661 telehealth consultations and 2,568,383 phone consultations across the state (Services Australia, 2022). These decreased to 62,589 telehealth and 1,959,459 phone consultations in the second year (to February 2022).

Summary

The Wheatbelt is unique in its population distribution across the region. People in the wheatbelt live in small communities and towns with no single central town to locate essential services. The dominant health concerns in the region are the increasing ageing population, chronic disease, mental health and access to workforce and services. The Wheatbelt has a large ageing population impacted by chronic disease with limited access to ageing and health services. Older adults in the Wheatbelt are impacted by coronary heart disease, COPD and dementia. Access to residential aged care facilities and home care is limited particularly in Wheat Belt – North, which has a relatively low ratio of residential aged care beds to population. Chronic disease is of increasing concern particularly as the population ages. The population in the Wheatbelt had significantly high prevalence rates of risk factors for chronic disease, particularly high blood pressure and obesity. Coronary heart disease and COPD are among the leading causes of disease burden in the region.

Depression, self-harm, and suicide impact communities in the Wheatbelt, particularly men and young people. The Wheatbelt had the second highest rates of self-harm in Country WA and high rates of Emergency Department presentations for mental health issues. Similar to other regional and rural communities, the Wheatbelt has limited access to psychologists and mental health services. Mental health is a continuing priority for the Wheatbelt.

Workforce and access to services is a continuing issue for all rural communities and the Wheatbelt is similarly impacted. Many towns have limited access to General Practitioners and allied health despite high needs in the community. Stakeholders have also indicated that internet connectivity reduces the viability of adopting telehealth as proxy for a limited local workforce.

Priorities

Health Need	Service Need	Priority	Priority Area	Priority sub-category
The Wheatbelt has a high proportion of older adults. Older adults in the Wheatbelt are impacted by Coronary Heart Disease, COPD and Dementia.	Access to RACFs and home care is limited particularly in Wheat Belt - North which has a relatively low ratio of residential aged care beds to population. There are very limited if not any community services available east of Northam, York, Toodyay and Narrogin.	Improve the management of chronic conditions for ageing populations and ensure adequate service provision to promote healthy ageing at home.	Aged Care	Access
Mental health was the second leading cause of disease burden in the Wheatbelt region.	Access to primary mental health services is limited in the Wheatbelt Region with less than 1% of the population accessing a clinical psychologist through MBS services. There are very limited private mental health clinicians available in the region, especially east of the Avon and Central Wheatbelt.	Improve access to mental health services in the Wheatbelt. This is across the whole lifespan.	Mental Health	Access
Deaths from suicide were above state rates in the Wheatbelt and impact people across the lifespan.	The Wheatbelt had the second highest rates of self-harm hospitalisations in Country WA and high rates of Emergency Department presentations for mental health issues.	Increase access to suicide prevention and mental health services and promote an integrated mental health system for the Wheatbelt.	Mental Health	Access
COPD among the leading causes of disease burden for the Wheatbelt.	PPH hotspots were identified for COPD in the Wheatbelt.	Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	Population Health	Chronic Disease
The population in Wheatbelt had significantly high-risk factors for chronic disease particularly high blood pressure and obesity.	Screening rates for risk factors are low. Supply of General Practice to population need was in the lower deciles. (Access Relative to Need.)	Support primary care to promote healthy weight and healthy lifestyle changes.	Population Health	Chronic Disease

Opportunities and Options

Priority	Expected Outcome	Potential lead agency and/or opportunities for collaboration and partnership
Improve the management of chronic conditions for ageing populations and ensure adequate service provision to promote healthy ageing at home.	AC2 Increase in the rate of people aged 75 years and over with a GP health assessment.	General Practice Aged Care Organizations Local Hospital Networks Local Governments
Improve access to mental health services in the Wheatbelt. This is across the whole lifespan.	MH1 Rate of regional population receiving PHN commissioned low intensity psychological interventions. MH2 Rate of regional population receiving PHN commissioned psychological therapies delivered by mental health professionals. MH4 Formalised partnerships with other regional service providers to support integrated regional planning and service delivery.	Non-Government Organisations Community Mental Health Services General Practice
Increase access to suicide prevention and mental health services and promote an integrated mental health system for the Wheatbelt.	MH5 Proportion of people referred to PHN commissioned services due to a recent suicide attempt or because they were at risk of suicide followed up within 7 days of referral.	Non-Government Organisations Community Mental Health Services General Practice
Support primary health care providers to manage chronic disease populations and build capacity for patient self-management.	P9 Increase in the rate of people diagnosed with chronic conditions who receive GP team care arrangement and case conferences. P12 Decrease in PPH rates. Where the rate has been stable for at least three years, the performance criteria is to maintain the existing rate of PPH.	General Practice Allied Health Providers
Support primary care to promote healthy weight and healthy lifestyle changes.	P4 Support provided to general practices and other health care providers.	General Practice Allied Health Service Providers

Definitions

Term	Definition
Aged Care Planning Region (ACPR)	The current Western Australia Aged Care Planning Regions became effective in April 2018. Aged Care Planning Regions are based on Statistical Area Level 2 (SA2) boundaries.
Age Standardised Rate (ASR)	Age-standardisation is a method of adjusting a crude rate to eliminate the effect of differences in population age structures when comparing crude rates for different periods of time, different geographic areas and/or different population sub-groups (e.g., between one year and the next and/or States and Territories, Indigenous and non-Indigenous populations).
Avoidable Deaths	The number of deaths each year of people under 75 from conditions that are potentially preventable through individualized care and/or treatable through existing primary or hospital care.
Australian Statistical Geography Standard (ASGS)	ASGS provides a framework of statistical areas used by the Australian Bureau of Statistics (ABS) and other organisations to enable the publication of statistics that are comparable and spatially integrated. Include: ABS Structures e.g., Statistical areas and non-ABS Structures e.g., Local government areas (LGA)
Burden of Disease	Burden of disease studies provide a comprehensive assessment of the impact of diseases, injuries and risk factors on a population. This impact is measured as 'disability-adjusted life years' (DALY); that is, the sum of 'years of life lost prematurely' (YLL) and 'years lived with disability' (YLD).
Indigenous Areas (IAREs)	IAREs are medium sized geographical areas designed to facilitate the release of more detailed statistics for Aboriginal and Torres Strait Islander Peoples. IAREs are medium sized geographical units designed to facilitate the release and analysis of more detailed statistics for Aboriginal and Torres Strait Islander Peoples.
Indigenous Relative Socioeconomic Outcomes index (IRSEO)	The IRSEO 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.
Lower urgency presentations	Lower urgency presentations are those where the person: had a visit type classified as an emergency presentation; was assessed as requiring semi-urgent or non-urgent care (triage category 4 or 5); did not arrive by ambulance, police or correctional vehicle; was not admitted to hospital, not referred to another hospital, and did not die.
Potentially Preventable Hospitalisations (PPHs)	The potentially preventable hospitalisations (PPH) indicator is a proxy measure of primary care effectiveness. PPH are certain hospital admissions (both public and private) that potentially could have been prevented by timely and adequate health care in the community. There are 22 conditions for which hospitalisation is considered potentially preventable, across 3 broad categories: chronic, acute, and vaccine-preventable conditions.

Term	Definition
Primary Health Networks (PHNs)	PHNs comprise 31 primary health care organisations across Australia. In WA there are three PHNs: Perth North, Perth South and Country WA.
Population Health Areas (PHA)	Population Health Areas were developed by the Public Health Information Development Unit at Torrens University in South Australia. Population Health Areas (PHA) are comprised of a combination of whole SA2s and multiple (aggregates of) SA2s. These were developed to address the potential for data not to be available from data custodians at an SA2 level, because of their need to maintain confidentiality of the data.
Remoteness Areas	The Australian Bureau of Statistics' (ABS) Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure is a framework for statistical geography, which defines locations in terms of remoteness. Geographic remoteness is essentially a measure of a physical location's level of access to goods and services3. Large population centres tend to have a greater range of goods and services available than small centres.
Statistical Areas (SAs)	**Statistical Areas Level 1 (SA1s)** are designed to maximise the spatial detail available for Census data. Most SA1s have a population of between 200 to 800 persons with an average population of approximately 400 persons. SA1s aim to separate out areas with different geographic characteristics within Suburb and Locality boundaries. In rural areas they often combine related Locality boundaries. **Statistical Areas Level 2 (SA2s)** are designed to reflect functional areas that represent a community that interacts together socially and economically. The SA2 include the Estimated Resident Population (ERP), Health & Vitals and Building Approvals data. SA2s generally have a population range of 3,000 to 25,000 persons and have an average population of about 10,000 persons. SA2s are aggregations of whole SA1s. **Statistical Areas Level 3 (SA3s)** generally have populations between 30,000 and 130,000 persons. They are often the functional areas of regional towns and cities with a population in excess of 20,000, or clusters of related suburbs around urban commercial and transport hubs within the major urban areas. SA3s are aggregations of whole SA2s. **Statistical Areas Level 4 (SA4s)** have a population above 100,000 persons to provide sufficient sample size for Labour Force estimates. In regional areas, SA4s tend to have lower populations (100,000 to 300,000). In metropolitan areas, the SA4s tend to have larger populations (300,000 to 500,000). SA4s are aggregations of whole SA3s.
Statistical significance	Statistical significance is the likelihood that the difference in conversion rates between a given variation and the baseline is not due to random chance.
The Index of Relative Socio-economic Disadvantage (IRSD)	IRSD index has a base of 1000 for Australia: scores above 1000 indicate relative lack of disadvantage and those below indicate relatively greater disadvantage.
The Kessler psychological distress scale (K10)	The Kessler psychological distress scale (K10) is a widely used, simple self-report measure of psychological distress which can be used to identify those in need of further assessment for anxiety and depression. This measure was designed for use in the general population; however, it may also serve as a useful clinical tool. The K10 comprises 10 questions that are answered using a five-point scale (where 5 = all of the time, and 1 = none of the time).

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