



Government of **Western Australia**  
WA Country Health Service

**Our Vision**

**To be a global leader in rural  
and remote healthcare.**



# Wheatbelt

## Health Profile 2022



**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

Wheatbelt Health Profile – Preliminary Version endorsed October 2022

# Wheatbelt Health Profile 2022

## Contents

<b>Wheatbelt Health Profile 2022 .....</b>	<b>2</b>
WACHS Strategic Priorities .....	4
Introduction.....	4
Geography and services .....	5
Wheatbelt Districts and Local Government Areas (Shires).....	5
Models of care provided by the region.....	9
Population.....	10
Age distribution .....	12
Historical population growth.....	14
Projected population growth .....	15
Key Wheatbelt demographic, social and economic facts .....	16
Burden of disease .....	18
Wheatbelt health risk factors .....	19
Emergency Department .....	20
Hospitalisations.....	26
Potentially Preventable Hospitalisations.....	30
Communicable disease notifications.....	34
Outpatient .....	38
Mental health.....	42
Psychological distress .....	42
Causes of death.....	45
Maternal and child health status .....	46
Births .....	46
Childhood Immunisation.....	48
Australian Early Childhood Development Census (AEDC) .....	49
Sources for further information.....	50
Acknowledgements.....	50

## **Acknowledgements**

WA Country Health Service recognises and acknowledges the Aboriginal people of the many traditional lands and language groups across Western Australia. We also acknowledge the wisdom of Aboriginal Elders both past and present and pay respect to Aboriginal communities of today.

## **Using the term—Aboriginal**

Within Western Australia (WA), the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. Aboriginal and Torres Strait Islander may be referred to in the national context and Indigenous may be referred to in the international context. No disrespect is intended to our Torres Strait Islander colleagues and community.

## WACHS Strategic Priorities

### Introduction

Delivering high quality care to our patients is at the center of everything we do at the WA Country Health Service (WACHS). From frontline staff in remote and regional WA to executive support staff working in the metropolitan area, our focus is always the same.

The mortality rate for people living in remote and very remote communities in Australia is 30 per cent higher than for those living in cities. Life expectancy is also much lower for WA's Aboriginal people and people suffering from chronic and persistent mental health conditions. To be a global leader in rural and remote healthcare, we must address this inequity.

There are many factors that influence a person's health, including genetics, lifestyle and environmental, economic and social factors. The demographics within the Wheatbelt are very diverse and even the types of local industry can impact how communities function. For example a major industry centre, coastal tourism or viticulture community will differ from an inland farming or forest community. The level of isolation and impact on health by environmental conditions is often more marked in rural than metropolitan communities.

The purpose of this document is to provide an overview of the population, geography, health risk factors and health activity of the Wheatbelt region and its Health Districts and identify some of the key health issues and needs of its population. The profile aims to provide a guide to inform health service review, planning and evaluation and help address disadvantage and inequity in rural and remote healthcare.



**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

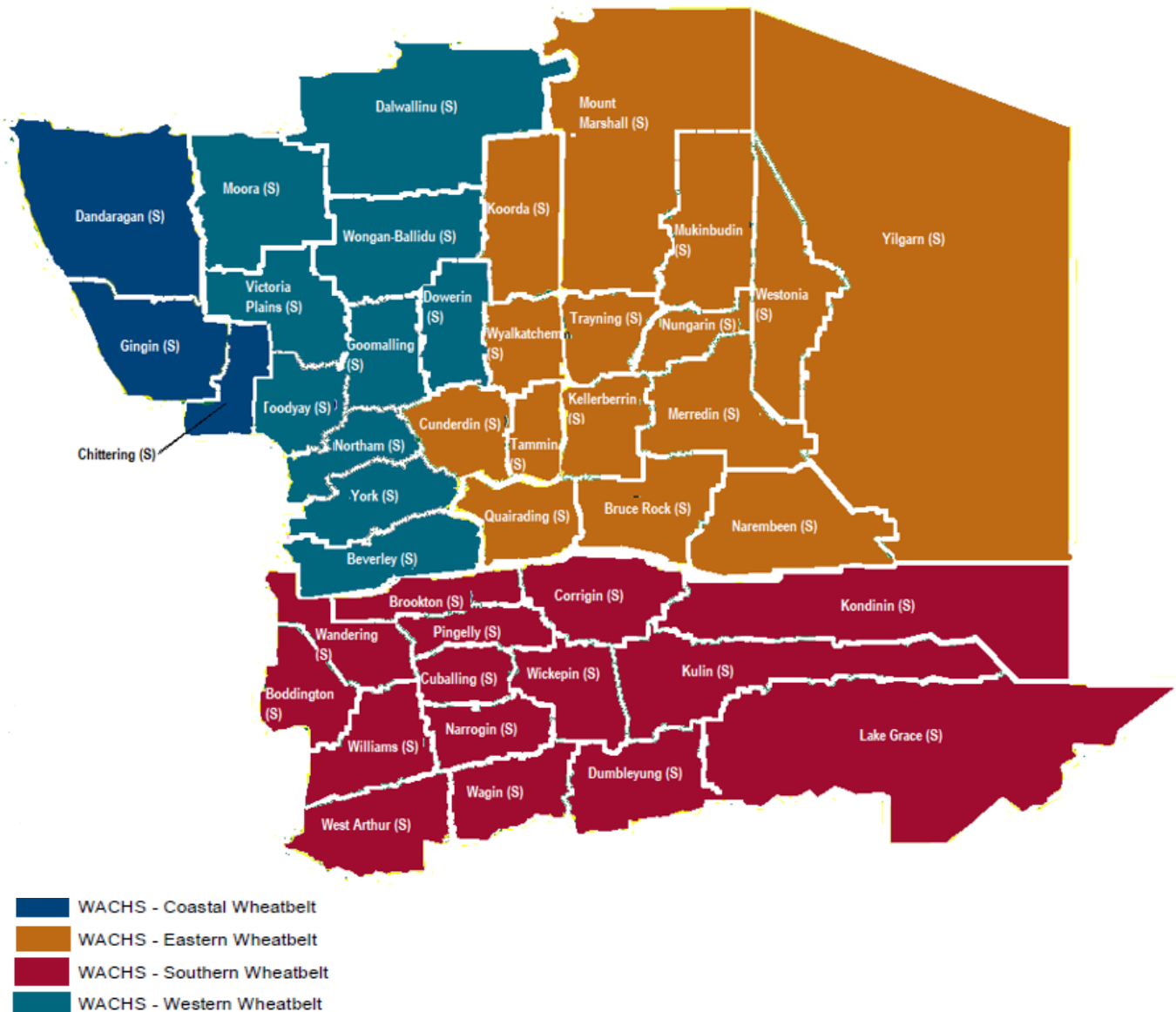
ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE



## Geography and services

- Operationally most of the Wheatbelt services are managed in three geographic districts but health data is currently organised into four geographic districts which are built from 43 Local Government Areas (LGAs). Coastal and Western Wheatbelt Districts are operationally managed together as Western Wheatbelt Health District. The region's Population health services are organised and managed slightly different again through four areas known as Western, Avon and Central, Eastern, and Southern Wheatbelt).
- As a region, the Wheatbelt contains 4 District Hospitals, 18 Small Hospitals and 9 Nursing Posts/Health Centres, as well as 5 Silver Chain health centres. Eight of the 43 shires are adjacent to the Perth metropolitan area and these Wheatbelt residents tend to directly access health services from metropolitan hospitals. As the Wheatbelt does not have a Regional Health Campus providing more complex care, Wheatbelt residents must access more complex, higher acuity services from metropolitan Perth hospitals.

### Wheatbelt Districts and Local Government Areas (Shires)



Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

### Wheatbelt districts, local government areas (LGA) and health facilities

Wheatbelt Operational district	Department of Health Geographic district	Local Government Area (S) = Shire	Hospitals and Health Centres	Hospital Inpatient Bed Numbers	Residential Aged Care Bed Numbers	ED Bays
Western Wheatbelt	Coastal Wheatbelt	Dandaragan (S)	Jurien Bay Health Centre	N/A	N/A	5
		Gingin (S)	Lancelin Health Centre (Silver Chain facility)	N/A	N/A	
			Gingin Health Centre	N/A	N/A	
			Gingin Community Mental Health Centre	N/A	N/A	
		Chittering (S)*	Chittering health centre, Bindoon (Shire facility, WACHS services)	N/A	N/A	
	Western Wheatbelt	Beverley (S)	Beverley Hospital	7	16	2
		Dalwallinu (S)	Dalwallinu Hospital	8	10	4
		Dowerin (S)		N/A	N/A	
		Goomalling (S)	Goomalling Hospital	4	12	3
		Moora (S)	Moora Hospital	12	22	2
		Northam (S)	Northam Hospital	41	0	12
			Northam Community Mental Health Centre	N/A	N/A	
			Wundowie Health Centre	N/A	N/A	
		Toodyay (S)		N/A	N/A	
		Victoria Plains (S)		N/A	N/A	
		Wongan-Ballidu (S)	Wongan Hills Hospital	7	12	2
		York (S)	York Hospital	7	21	3

## Wheatbelt districts, local government areas (LGA) and health facilities (cont)

Wheatbelt Operational district	Department of Health Geographic district	Local Government Area (S) = Shire	Hospitals and Health Centres	Hospital Inpatient Bed Numbers	Residential Aged Care Bed Numbers	ED Bays	
Eastern Wheatbelt	Western Wheatbelt	Cunderdin (S)**	Cunderdin Health Centre	N/A	N/A	3	
		Tammin (S)**		N/A	N/A		
		Koorda (S)**	Koorda Health Centre	N/A	N/A		
		Wyalkatchem (S)**	Wyalkatchem-Koorda and Districts Hospital	3	13	2	
	Eastern Wheatbelt		Bruce Rock (S)	Bruce Rock Memorial Hospital	5	6	2
			Kellerberrin (S)	Kellerberrin Memorial Hospital	4	6	2
			Merredin (S)	Merredin Hospital	16	20	3
			Mount Marshall (S)	Beacon Silver Chain facility	N/A	N/A	
				Bencubbin Silver Chain facility	N/A	N/A	
			Mukinbudin (S)	Mukinbudin Health Centre	N/A	N/A	
			Narembeen (S)	Narembeen Memorial Hospital	3	13	2
			Nungarin (S)		N/A	N/A	
			Quairading (S)	Quairading Hospital	6	13	2
			Trayning (S)	Kununoppin Hospital	6	7	2
			Westonia (S)		N/A	N/A	
			Yilgarn (S)	Southern Cross Hospital	7	6	3

## Wheatbelt districts, local government areas (LGA) and health facilities (cont)

Operational district	Geographic district	Local Government Area (S) = Shire	Hospitals and Health Centres	Hospital Inpatient Bed Numbers	Residential Aged Care Bed Numbers	ED Bays
Southern Wheatbelt	Southern Wheatbelt	Boddington (S)	Boddington Hospital	8	0	4
		Brookton (S)	Brookton Silver Chain facility	N/A	N/A	
		Corrigin (S)	Corrigin Hospital	4	14	3
		Cuballing (S)		N/A	N/A	
		Dumbleyung (S)	Dumbleyung Memorial Hospital	4	4	2
			Kukerin Health Centre	N/A	N/A	
		Kondinin (S)	Kondinin Hospital	4	5	4
			Hyden Silver Chain Health Centre	N/A	N/A	
		Kulin (S)	Kulin Health Centre	N/A	N/A	
		Lake Grace (S)	Lake Grace Hospital	3	5	3
			Varley Health Centre***	N/A	N/A	
		Narrogin (S)	Narrogin Hospital	36	0	7
		Pingelly (S)	Pingelly Health Centre	N/A	N/A	4
		Wagin (S)	Wagin Hospital	8	0	4
		Wandering (S)		N/A	N/A	
		West Arthur (S)		N/A	N/A	
Wickepin (S)	Wickepin Health Centre	N/A	N/A			
Williams (S)	Williams Health Centre	N/A	N/A			
<b>Wheatbelt Total beds</b>				<b>203</b>	<b>205</b>	<b>85</b>

ED Bays include General and Resuscitation Bays. Residential Aged Care beds sourced from Wheatbelt Aged Care. Bed numbers accurate as at October 2022.

\* Operationally the Shires of Chittering, Dandaragan and Gingin fall under the Western Wheatbelt Operations Manager, however since around 2009/10 the data for the three Shires has been organised for the purposes of Health Data Collections under a district called the Coastal Wheatbelt district. It is useful for planning purposes to have the data for this district presented separately as the flows of patients tend to be directly to Perth.

\*\* The Shires of Cunderdin, Koorda, Tammin and Wyalkatchem, according to the Department of Health geographic boundaries, fall under the Western Wheatbelt district; however the health facilities in these Shires are now operationally managed by the Eastern Wheatbelt. In this report, where possible operational boundaries have been used. Where data limitations exist, the report will revert to the DoH geographic district. This will be noted under table accordingly.

\*\*\* Varley is managed by Great Southern Population Health



## Models of care provided by the region

WACHS delivers emergency, inpatient, outpatient and community-based health services to regional WA. Our network of hospitals and health services enable our country communities to receive integrated health care. A range of these services can be offered through Telehealth and other digitally enabled services to enable patients to receive some of their care at or closer to home.



In response to the specific demands for services in rural and remote regions of WA, through Commonwealth Multi-Purpose Services (MPS) funding, WACHS is also able to offer a range of flexible services that incorporate hospital, aged care and primary health care for small towns and isolated communities.

This model enables MPS sites to develop innovative and flexible strategies based on the needs of the community. Services are managed and adapted to address local need and circumstance with input from a wide range of community representatives and key stakeholders.

The 18 MPS locations in the Wheatbelt are:

Beverley	Eastern Wheatbelt - Wyalkatchem
Bruce Rock	Narembeen
Corrigin	Kondinin/Kulin
Dalwallinu	Lake Grace
Dumbleyung/Kukerin	Moorra/Dandaragan
Eastern Wheatbelt - Southern Cross (Yilgarn)	Mortlock (Goomalling)
Eastern Wheatbelt - Kellerberrin	Mortlock (Wongan Hills)
Eastern Wheatbelt – (Kununoppin/Trayning)	Quairading
Eastern Wheatbelt - Merredin	York

## Population

- At 30 June 2020, the Estimated Resident Population of the Wheatbelt was 75,455, the second most populated region of WACHS (behind the South West). The Western Wheatbelt had the largest population (28,515) comprising 38% of the total Wheatbelt population, followed by the Southern Wheatbelt (19,129 or 25% of total).
- The largest Local Government Area in the Wheatbelt population is the Shire of Northam (11,103 people) while the smallest is the Shire of Nungarin (246 people).
- Across the Wheatbelt, 5.5% of the population identified as Aboriginal, lower than the overall WACHS average of 11%, but higher than the WA State average of 3%. The Shire of Pingelly had the highest proportion of its population identify as Aboriginal (16%), followed by the Shire of Brookton (15%).
- Updated populations from the 2021 Census, which will aid with rebasing population projections, are expected to be released between mid-2022 and early 2023.

Health district	LGA	Aboriginal	Non Aboriginal	Total	% Aboriginal
Coastal Wheatbelt	Dandaragan (S)	108	3207	3315	3.3%
	Gingin (S)	118	5235	5353	2.2%
	Chittering (S)	167	5854	6021	2.8%
<b>Coastal Wheatbelt Total</b>		<b>393</b>	<b>14296</b>	<b>14689</b>	<b>2.7%</b>
Western Wheatbelt	Beverley (S)	103	1665	1768	5.8%
	Dalwallinu (S)	109	1288	1397	7.8%
	Dowerin (S)	19	649	668	2.8%
	Goomalling (S)	51	940	991	5.2%
	Moora (S)	331	2058	2389	13.9%
	Northam (S)	834	10179	11013	7.6%
	Toodyay (S)	154	4307	4461	3.5%
	Victoria Plains (S)	21	896	917	2.3%
	Wongan-Ballidu (S)	95	1193	1288	7.4%
	York (S)	151	3472	3623	4.2%
<b>Western Wheatbelt Total</b>		<b>1869</b>	<b>26646</b>	<b>28515</b>	<b>6.6%</b>
Eastern Wheatbelt	Bruce Rock (S)	30	919	949	3.2%
	Cunderdin (S)	37	1371	1408	2.6%
	Kellerberrin (S)	98	1087	1185	8.3%
	Koorda (S)	8	394	402	2.1%
	Merredin (S)	282	3088	3370	8.4%
	Mount Marshall (S)	6	506	512	1.2%
	Mukinbudin (S)	31	493	524	5.9%
	Narembeen (S)	22	828	850	2.6%
	Nungarin (S)	12	234	246	4.8%
	Quairading (S)	95	893	988	9.7%
	Tammin (S)	49	344	393	12.6%
	Trayning (S)	11	336	347	3.3%
	Westonia (S)	3	302	305	1.1%
	Wyalkatchem (S)	9	483	492	1.7%
	Yilgarn (S)	46	1105	1151	4.0%
<b>Eastern Wheatbelt Total</b>		<b>740</b>	<b>12382</b>	<b>13122</b>	<b>5.6%</b>
Southern Wheatbelt	Boddington (S)	106	1659	1765	6.0%
	Brookton (S)	142	817	959	14.8%
	Corrigin (S)	47	1085	1132	4.2%
	Cuballing (S)	13	840	853	1.5%
	Dumbleyung (S)	24	650	674	3.6%
	Kondinin (S)	63	809	872	7.3%
	Kulin (S)	26	749	775	3.3%
	Lake Grace (S)	39	1247	1286	3.0%
	Narrogin (S)	420	4519	4939	8.5%
	Pingelly (S)	182	968	1150	15.9%
	Wagin (S)	46	1730	1776	2.6%
	Wandering (S)	4	420	424	0.9%
	West Arthur (S)	26	756	782	3.3%
	Wickepin (S)	25	702	727	3.4%
	Williams (S)	10	1005	1015	1.0%
<b>Southern Wheatbelt Total</b>		<b>1174</b>	<b>17955</b>	<b>19129</b>	<b>6.1%</b>
<b>Wheatbelt Total</b>		<b>4176</b>	<b>71279</b>	<b>75455</b>	<b>5.5%</b>

Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity

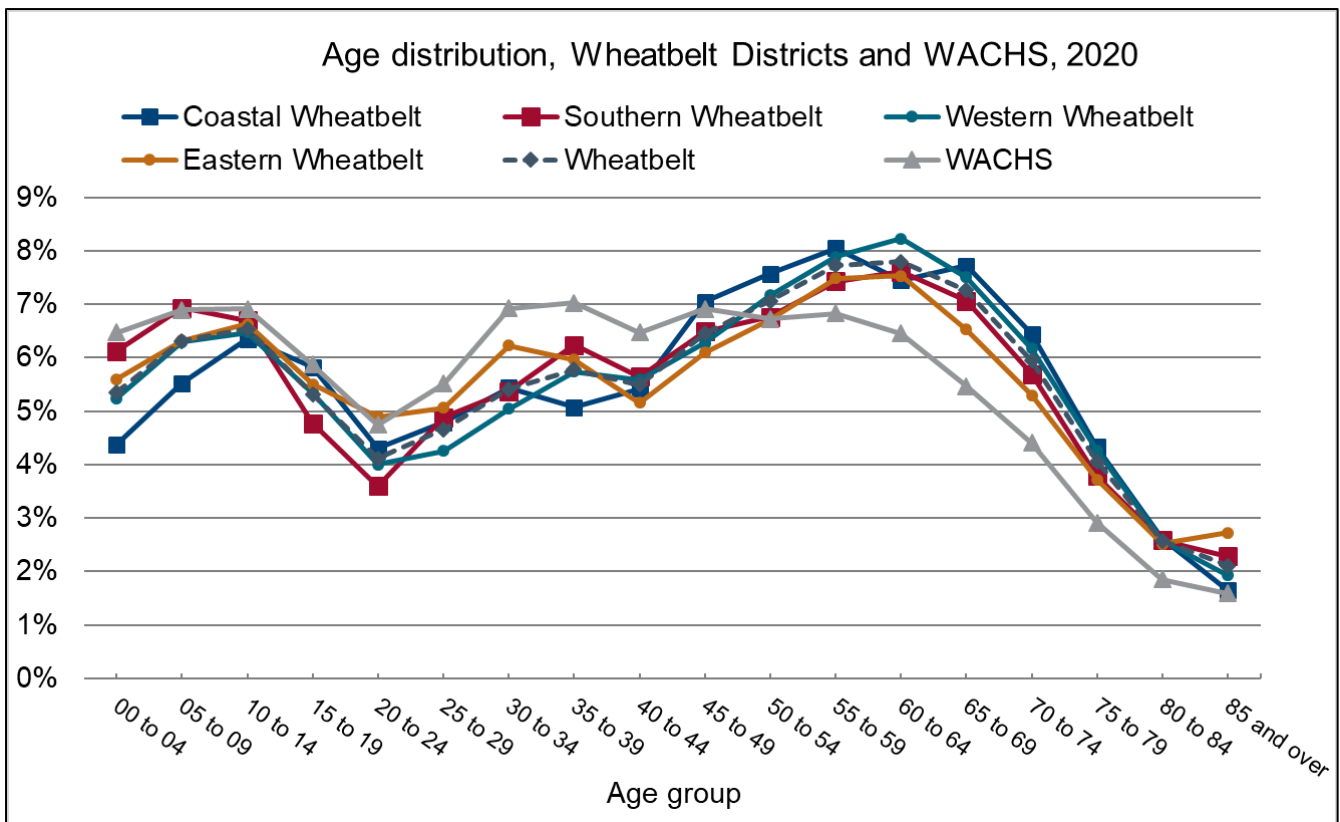
ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: ABS Estimated Resident Population, 2020. Aboriginal proportions from 2016 Census data applied to 2020 populations.

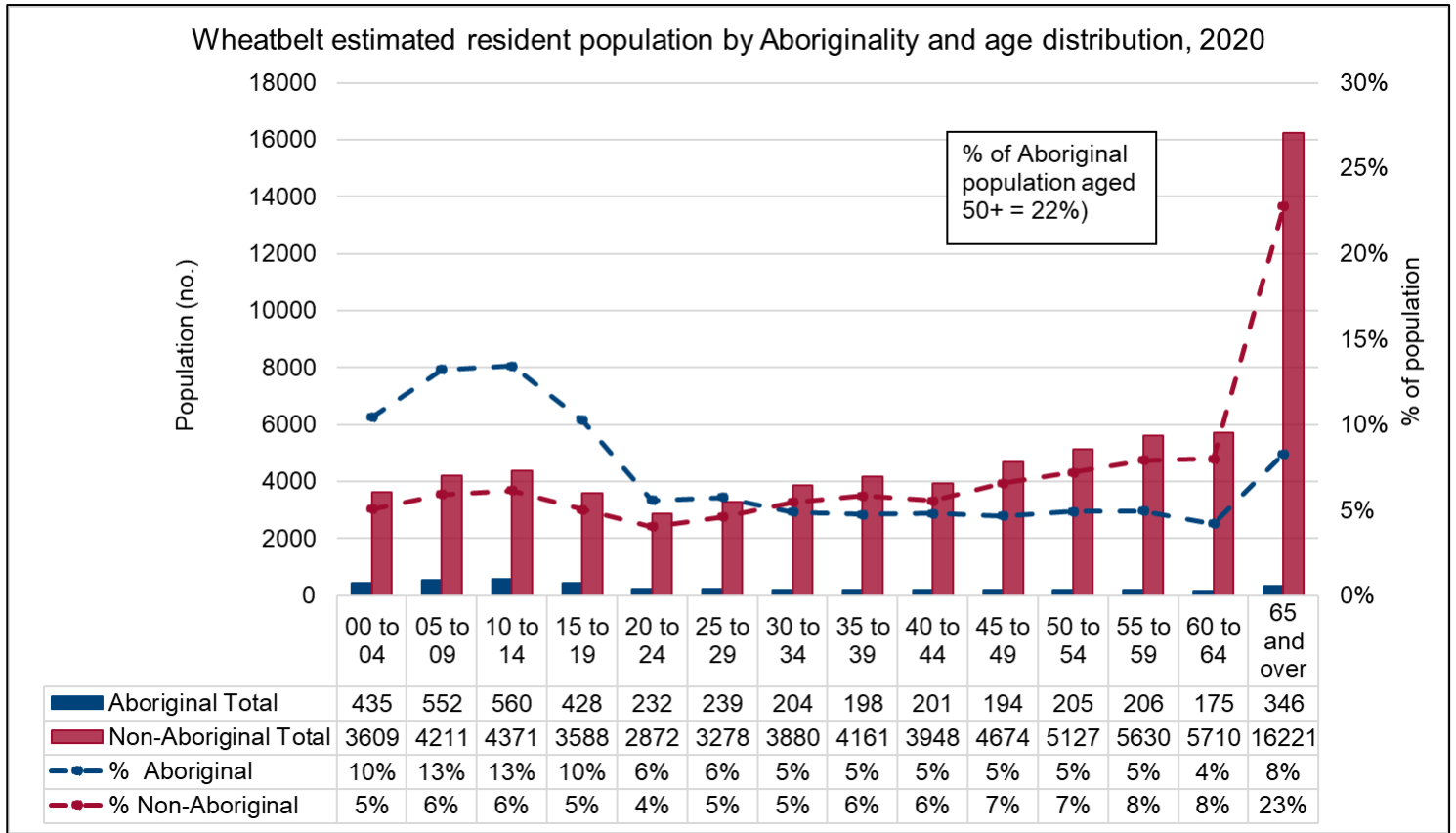
### Age distribution

- In 2020, the Wheatbelt had an older age distribution than the WACHS average, with 22% of Wheatbelt residents (16,567 people) aged 65 years and over compared with 16% for WACHS overall.
- The Coastal Wheatbelt had the lowest proportion of its population (16%, 2,388 persons) of its population aged under 15 years, compared with a Wheatbelt average of 18% (13,738) and a WACHS average of 20%.
- The Aboriginal population in the Wheatbelt had a considerably younger age distribution than the non-Aboriginal population, with more than one-third (37% or 1,548 people) of Aboriginal Wheatbelt residents aged under 15 years, compared with 17% (12,190) for non-Aboriginal Wheatbelt residents.
- Almost one-quarter (22%) of the Wheatbelt Aboriginal population (932 people) were aged 50 years and over, while 23% of non-Aboriginal residents (16,221 people) were aged 65 years and over.



Using Wheatbelt operational boundaries, refer pages 6-7.

Source: ABS Estimated Resident Population, 2020.

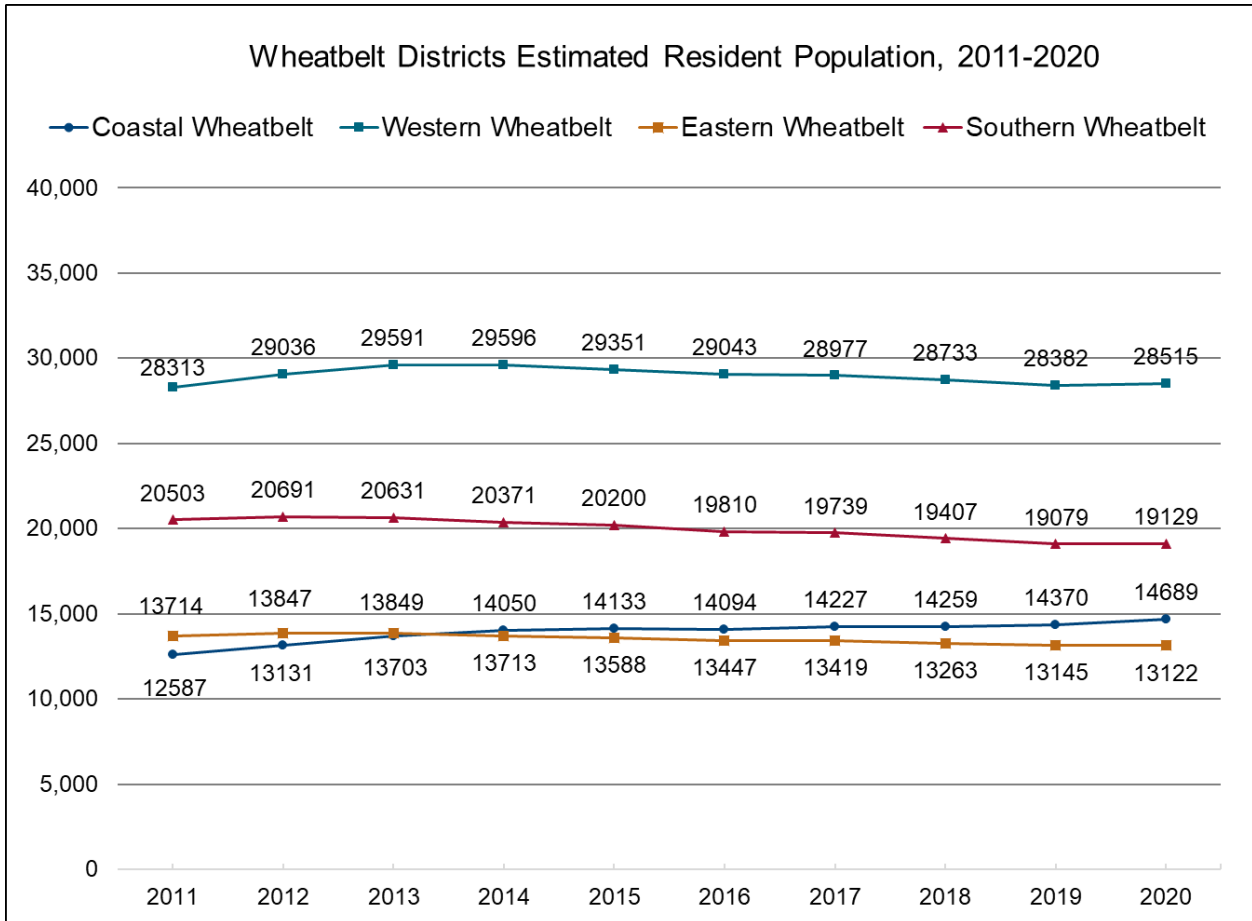


Source: ABS Estimated Resident Population, 2020. Aboriginal proportions from 2016 Census data applied to 2020 populations.



## Historical population growth

- Between 2011 and 2020, the population of the Wheatbelt remained stable (from 75,117 to 75,455). The Coastal Wheatbelt had the most significant growth (annual average increase of 1.7%), followed by the Western Wheatbelt (0.1%). The Southern Wheatbelt and Eastern Wheatbelt both declined slightly in population (annual average decreases of -0.8% and -0.5% respectively).

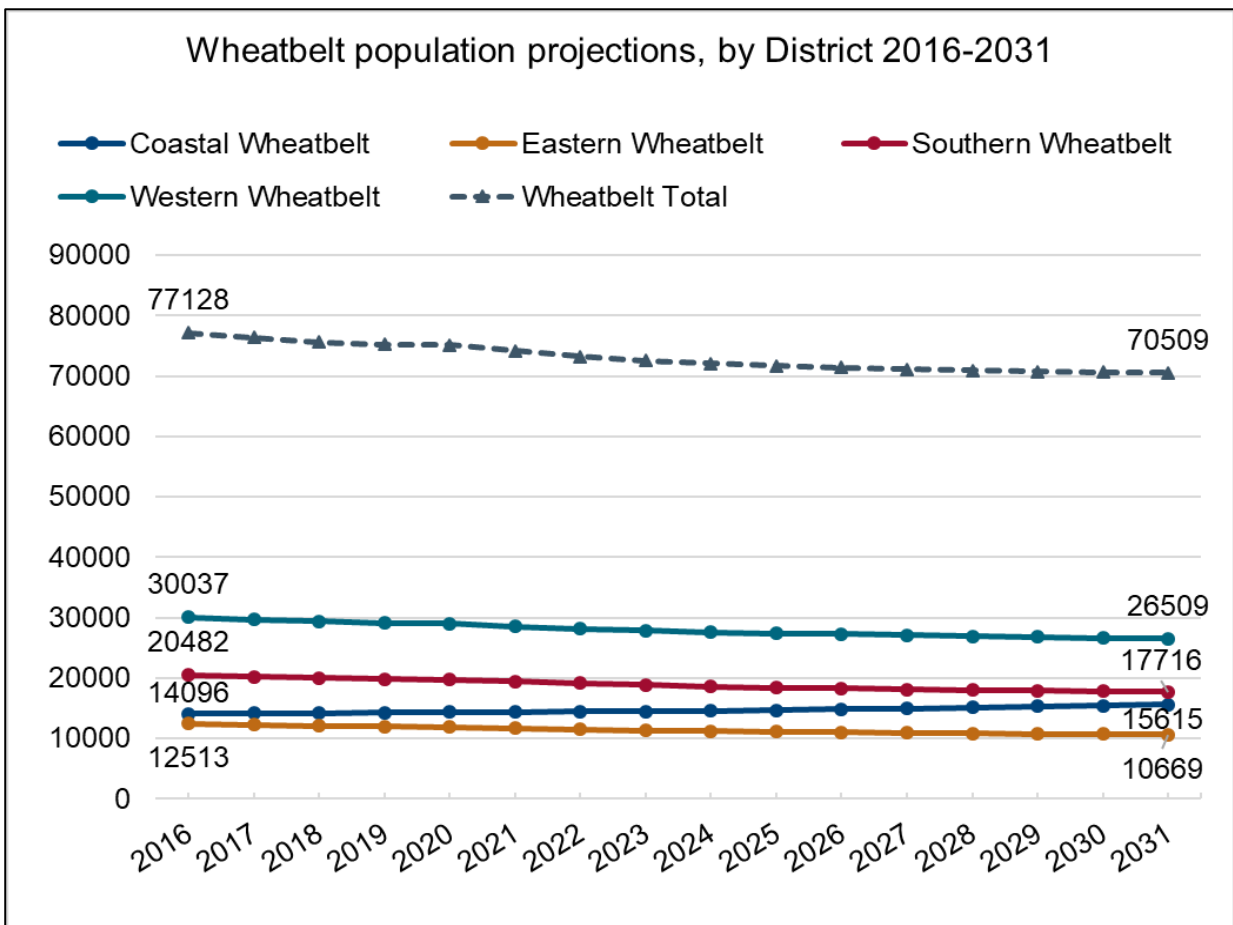


Using Wheatbelt operational boundaries refer pages 6-7.

Source: ABS Estimated Resident Population, 2020.

### Projected population growth

- Between 2016 and 2031, the population of the Wheatbelt is estimated to decrease by 9%, to 70,509.
- The Coastal Wheatbelt is the only Wheatbelt district expecting to have a population increase between 2016 and 2031 (11%). The Eastern Wheatbelt is predicted to have the largest population decrease (15%) followed by the Southern Wheatbelt (14%) and Western Wheatbelt (12%).
- Updated populations from the 2021 Census, which will aid with rebasing population projections, are expected to be released between mid-2022 and early 2023.



Using Department of Health geographic boundaries (data not available by LGA to form under operational boundaries), refer pages 6-7.

Source: WA Tomorrow projections, Dec 2018 scaled to the Treasury Budget projection, 2021, by Department of Health.

## Key Wheatbelt demographic, social and economic facts

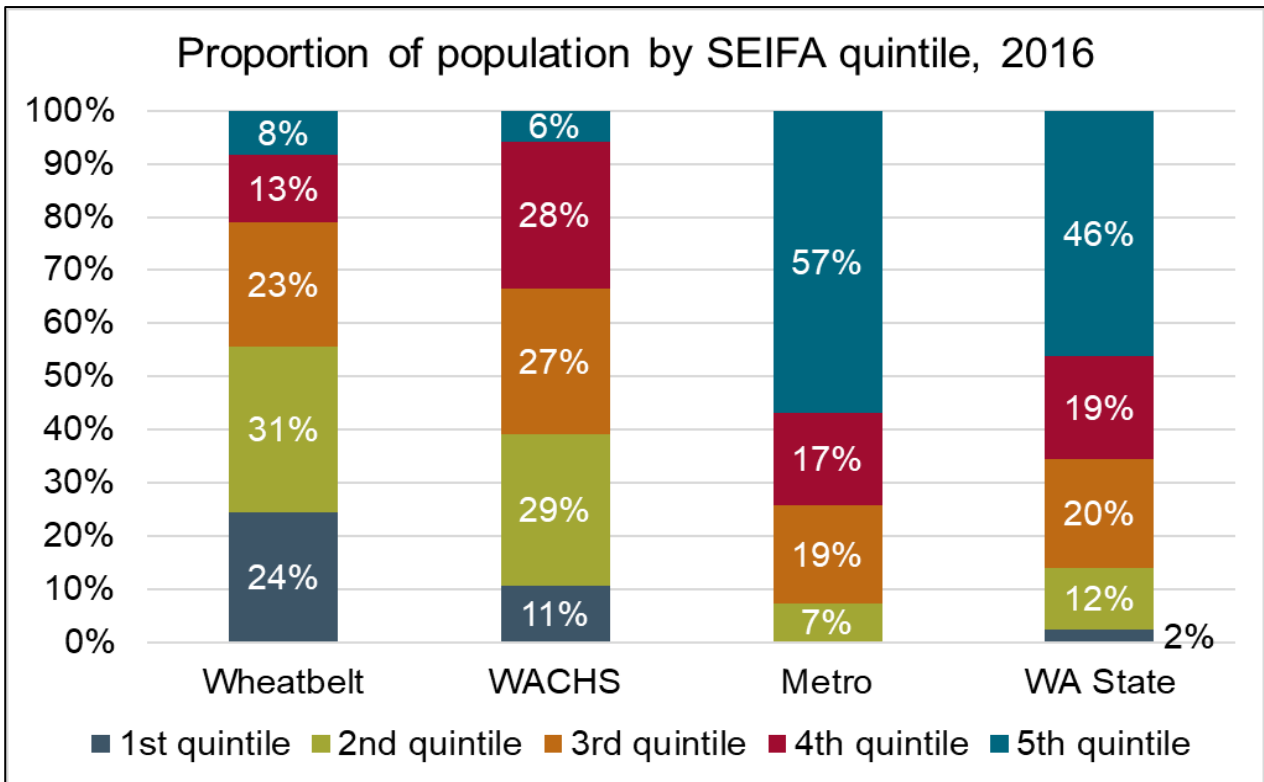
- As at the 2016 Census, the Wheatbelt had 16% of its residents who were born overseas, with 4.3% speaking a language other than English at home. These proportions were lower than the WACHS and WA State averages.
- In 2016, the Wheatbelt had 9% of its population with a tertiary qualification, slightly lower than the WACHS average (11.7%) and significantly lower than the WA State average (20.6%).

Health District	Born overseas	People who don't speak English at home	Left school aged less than 15 years old	Persons with tertiary qualification	Families with annual income less than \$20,800	Unemployment rate
Coastal Wheatbelt	21.1%	5.3%	10%	8.4%	4.6%	5.8%
Western Wheatbelt	17.2%	4.3%	10.4%	9.2%	3.4%	6.7%
Eastern Wheatbelt	13.3%	4.3%	11.9%	8.5%	3.7%	4.6%
Southern Wheatbelt	12.7%	3.6%	10.9%	10%	3.4%	4.8%
Wheatbelt	16.2%	4.3%	10.6%	9.1%	3.6%	5.7%
WACHS	17.9%	8.4%	8.9%	11.7%	3.6%	6.4%
WA State	32.3%	17.6%	7.2%	20.6%	3.5%	7.8%

Using Department of Health geographic boundaries, refer pages 6-7.

Source: Health Tracks, DoH. Data sourced from 2016 Census of Population and Housing

- Socio-Economic Indexes for Areas (SEIFA) is an ABS product that ranks areas in Australia according to relative socio-economic advantage and disadvantage. The indexes are based on information from the five-yearly Census of Population and Housing.
- The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) summarises information about the economic and social conditions of people and households within an area, including both relative advantage and disadvantage measures. A low score indicates relatively greater disadvantage and a lack of advantage in general. A high score indicates a relative lack of disadvantage and greater advantage in general.
  - In 2016, the Wheatbelt had more than half of its population living in areas with SEIFA scores in the two quintiles with the highest relative disadvantage, compared with 40% for WACHS overall and 14% for the WA State average.



*\*the lower the quintile, the higher the relative disadvantage. Source: 2016 Census*

## Vulnerable children and families

While the indicators above provide an overview of the social and economic factors in the Wheatbelt, there are many other interlinked factors that impact a community and its unique health care needs.

It is recognised that vulnerable children and their families may require more assistance, support and intervention than families with no identified vulnerabilities.

Recognised vulnerable groups in our communities include Aboriginal families, refugee families, 'at risk' families (those experiencing mental illness, affected by drugs and alcohol, those with disabilities, with low incomes and resourcing, and families with young parents), and children in care, who have a higher risk of health and developmental vulnerability.

More data focused on the social, economic, health and wellbeing of children and adolescents can be found in the Telethon Kids Institute's interactive Child Development Atlas (<https://childatlas.telethonkids.org.au/>).

## Burden of disease

The Western Australian Burden of Disease Study (WABODS) 2015 was conducted by the Epidemiology Branch, WA Department of Health in partnership with the Australian Institute of Health and Welfare. The study provides an assessment of the impact of 216 diseases and 29 risk factors on the WA population and allows for disease comparisons due to loss of life and disability in a consistent manner. Findings from this study are useful for policy formulation, research, practice and health service planning.

In the Wheatbelt in 2015 almost 10,000 years of life were lost due to premature deaths (deaths before the average life expectancy) and almost 8000 years were lived with a disability, much of this being potentially preventable. This has a significant impact to the community, families and individuals.

In the region cancer is the leading cause of burden of disease (19.6% of total burden) for the community followed by mental health issues (13%), injuries (12.2%) (including suicide, self-inflicted and motor vehicle occupant injuries), cardiovascular (11.9%) and respiratory diseases (8.7%).

Chronic obstructive pulmonary disease (COPD) (7% of disability adjusted life years), coronary heart disease (6.6%) and depressive disorders (6.2%) are the highest burdens for Wheatbelt women whereas coronary heart disease (7.6%), COPD (6.4%) and lung cancer (5.9%) are highest for Wheatbelt men.

For Wheatbelt residents aged 15-44, the largest burdens of disease were from suicide, depressive and anxiety disorders and poisoning, while for those aged 45 years and over the largest burden was from coronary heart disease, COPD, lung cancer and dementia.

The below report provides further details on breakdowns for the Wheatbelt and provides comparative results for the Wheatbelt against other WACHS and metropolitan regions.

[https://ww2.health.wa.gov.au/~/\\_media/Corp/Documents/Reports-and-publications/WA-Burden-of-Disease-Study-2015-Summary-report/WA-Burden-of-Disease-Health-Region-report.pdf](https://ww2.health.wa.gov.au/~/_media/Corp/Documents/Reports-and-publications/WA-Burden-of-Disease-Study-2015-Summary-report/WA-Burden-of-Disease-Health-Region-report.pdf)

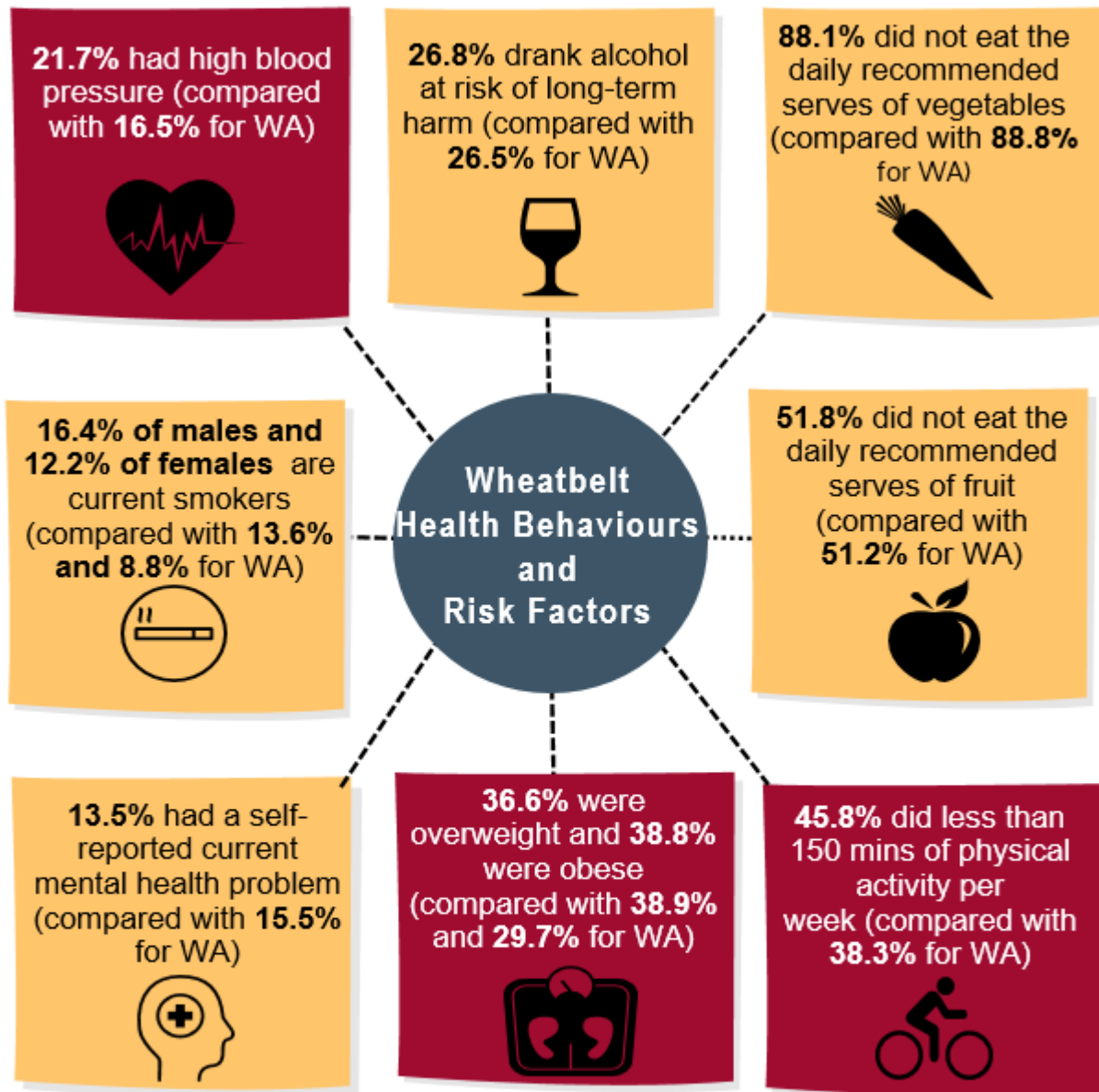
**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE



## Wheatbelt health risk factors

The graphics below highlight the prevalence of key health risk factors in the Wheatbelt region. These are self-reported measures collected through the Department of Health's Health and Wellbeing Surveillance System



Adults aged 16+, 2015-2019.

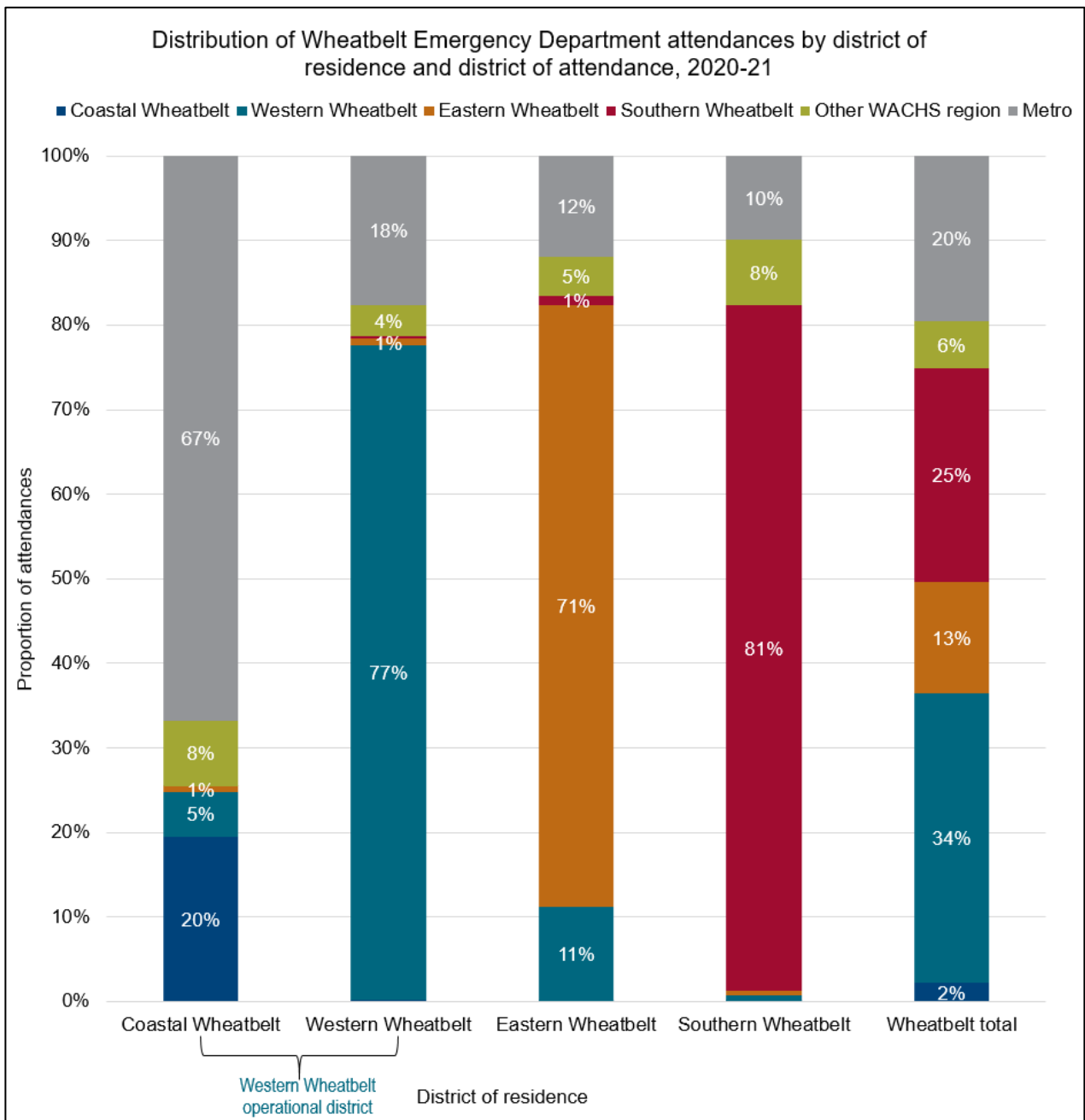
Source: Health and Wellbeing Surveillance System, Epidemiology Branch, Department of Health.

Note: Colour coding reflects where a rate is significantly different than the State rate. The State rate may still be at a level of concern.

## Emergency Department

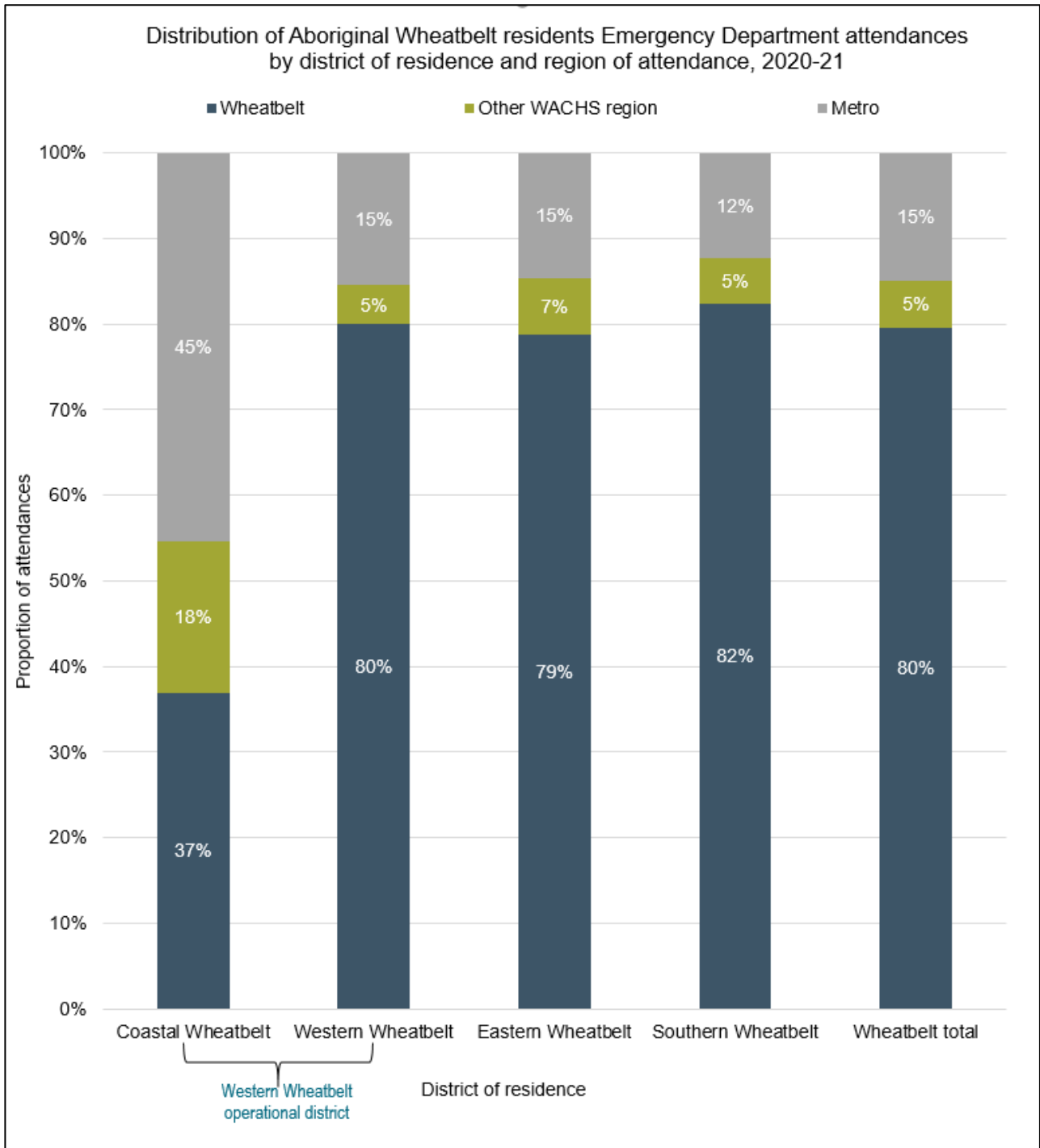
### Wheatbelt summary

- Of the 49,232 emergency department attendances by Wheatbelt residents in 2020-21, 75% occurred at Wheatbelt hospitals, and 20% at Perth metropolitan hospitals.
- Southern Wheatbelt residents had the highest proportion of emergency department attendances at a hospital in their own district (12,298 attendances or 81%), followed by Western Wheatbelt (15,496 attendances or 77%) and Eastern Wheatbelt (6,205 attendances or 71%). Coastal Wheatbelt district residents had the lowest proportion attending a hospital in their own district (1,040 attendances or 20%), due to only having one site providing emergency care (Jurien Bay Health Centre), with 60% attending a Perth metropolitan hospital.



Using Wheatbelt operational boundaries, refer page 6-7. Source: Emergency Department Data Collection, DoH

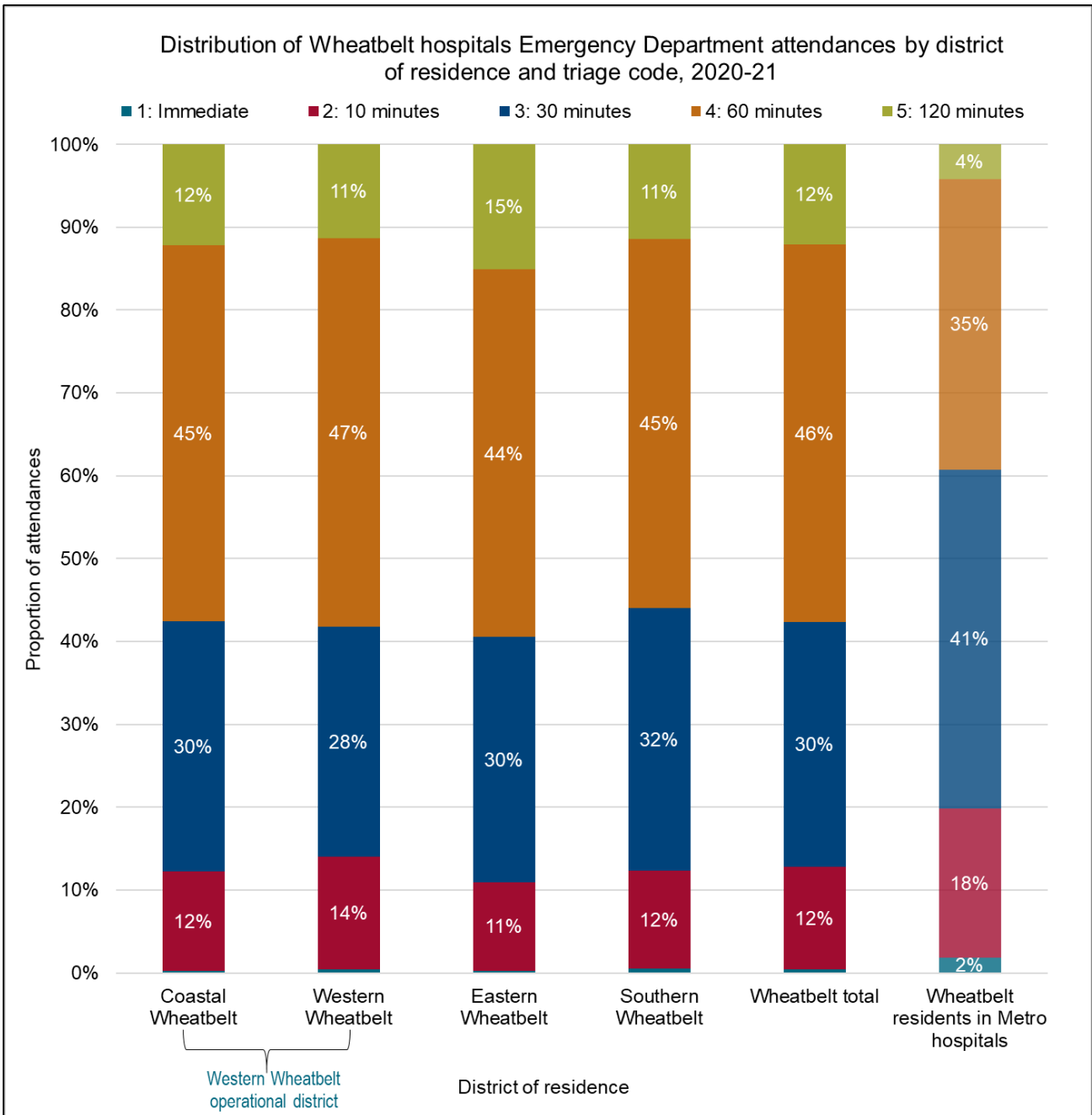
- For Aboriginal residents, of their 5,835 attendances in 2020-21, 80% attended a Wheatbelt hospital, and 15% attended a Perth metropolitan hospital.
- Aboriginal residents of the Southern Wheatbelt had 82% of their emergency department attendances at a Wheatbelt hospital (1,494), followed by Western Wheatbelt (2,208, 80%), Eastern Wheatbelt (893, 79%) and Coastal Wheatbelt (48, 37%).



Using Wheatbelt operational boundaries, refer page 6-7. Source: Emergency Department Data Collection, DoH

### Emergency attendances for Wheatbelt residents, by triage, 2020-21

- The triage profile of emergency department attendances by Wheatbelt residents at hospitals across the Wheatbelt in 2020-21 was similar across the districts, an average of 58% of attendances of triage level 4 or 5. Attendances with a triage of 3 made up just under one third of attendances on average, while 12% of attendances to Wheatbelt hospitals were triaged as level 1 or 2.
- In comparison, for Wheatbelt residents who attended Perth metropolitan hospitals in 2020-21, the triage profile was much higher in urgency than attendances to Wheatbelt hospitals, with 20% triaged as level 1 or 2, 41% as level 3, and 39% as triage 4 or 5.



Using Wheatbelt operational boundaries, refer page 6-7.

Source: Emergency Department Data Collection, DoH

## Emergency department attendances for Wheatbelt residents attending Wheatbelt hospitals, key characteristics, 2020-21

- For Wheatbelt residents who attended a hospital emergency department in their region in 2020-21 (35,006 attendances), 21% were delivered via the Emergency Telehealth Service.
- Of all Wheatbelt emergency department attendances by Wheatbelt residents in 2020-21, 64% (22,250) occurred between the hours of 8am and 5pm, 20% (7,035) were between 5pm and 9pm, and 16% (5,721) were between 9pm and 8am.
- Of the Wheatbelt residents who attended a Wheatbelt emergency department in 2020-21, 75% (26,366) were discharged home, 10% (3,616) were admitted to that hospital, and 10% (3,577) were transferred to another hospital (6% to a metropolitan hospital). Of those transferred to a metropolitan hospital, 40% were triage level 1 or 2, compared with 26% transferred to another WACHS hospital.
- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Wheatbelt emergency department attendances by Wheatbelt residents in 2020-21 were Diseases and disorders of the musculoskeletal system and connective tissue (14%) and Injuries, Poisonings and Toxic Effects of Drugs (11%). The most common MDCs that led to a transfer to a metropolitan hospital were Diseases and disorder of the digestive system (17% of metro transfers) and Diseases and Disorders of the Circulatory system (16% of metro transfers).

### Top 5 Major Diagnostic Categories for Wheatbelt residents attending Wheatbelt hospital EDs, 2020-21

Major Diagnostic Category	Attendances	% of total
Diseases and disorders of the musculoskeletal system and connective tissue	4768	14%
Injuries, Poisonings and Toxic Effects of Drugs	3676	11%
Factors influencing health status and other contacts with health services	3576	10%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	3071	9%
Diseases and disorders of the digestive system	2990	9%

### Top 5 Major Diagnostic Categories for Wheatbelt residents transferred from Wheatbelt EDs to metropolitan hospitals, 2020-21

Major Diagnostic Category	Attendances	% of metro transfers
Diseases and disorders of the digestive system	321	17%
Diseases and Disorders of the Circulatory System	312	16%
Diseases and disorders of the musculoskeletal system and connective tissue	168	9%
Diseases and Disorders of the Nervous System	149	8%
Diseases and disorders of the respiratory system	142	7%

\*Factors influencing health status and other contacts with health services included diagnoses such as attention to surgical dressings, follow up examinations after other treatment, issue of repeat prescriptions, laboratory examination. Using Wheatbelt operational boundaries, refer pages 6-7. Source: Emergency Department Collection, WACHS Business Intelligence

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE



## Emergency department attendances for Wheatbelt residents attending Wheatbelt hospitals, key characteristics by Aboriginality, 2020-21

- For Aboriginal Wheatbelt residents who attended a hospital emergency department in their region in 2020-21 (4,154 attendances), 20% were provided services via the Emergency Telehealth Service.
- Of all Wheatbelt emergency department attendances by Aboriginal Wheatbelt residents in 2020-21, 49% (2,049) occurred between the hours of 8am and 5pm, 26% (1,086) were between 5pm and 9pm, and 25% (1,019) were between 9pm and 8am.
- Of the Aboriginal Wheatbelt residents who attended a Wheatbelt emergency department in 2020-21, 73% (3,028) were discharged home, 10% (411) were admitted to that hospital, and 9% (363) were transferred to another hospital (5% to a metropolitan hospital).
- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Wheatbelt emergency department attendances by Aboriginal Wheatbelt residents in 2020-21 were Diseases and disorders of the musculoskeletal system and connective tissue (11%) and Diseases and disorders of the Ear, Nose, Mouth and Throat (11%). The most common MDCs that led to a transfer to a metropolitan hospital for Aboriginal residents were Diseases and disorder of the circulatory system (14% of metro transfers) and Diseases and Disorders of the digestive system (14% of metro transfers).

### Top 5 Major Diagnostic Categories for Aboriginal Wheatbelt residents attending Wheatbelt hospital EDs, 2020-21

Major Diagnostic Category	Attendances	% of total
Diseases and disorders of the musculoskeletal system and connective tissue	476	11%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	440	11%
Injuries, Poisonings and Toxic Effects of Drugs	407	10%
Factors influencing health status and other contacts with health services*	404	10%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	386	9%

### Top 5 Major Diagnostic Categories for Aboriginal Wheatbelt residents transferred from Wheatbelt EDs to metropolitan hospitals, 2020-21

Major Diagnostic Category	Attendances	% of metro transfers
Diseases and Disorders of the Circulatory System	27	14%
Diseases and disorders of the digestive system	27	14%
Injuries, Poisonings and Toxic Effects of Drugs	16	8%
Diseases and disorders of the respiratory system	15	8%
Factors influencing health status and other contacts with health services*	14	7%

\*Factors influencing health status and other contacts with health services included diagnoses such as attention to surgical dressings, follow up examinations after other treatment, issue of repeat prescriptions, laboratory examination. Using Wheatbelt operational boundaries, refer pages 6-7. Source: Emergency Department Collection, WACHS Business Intelligence

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

**Top 5 Major Diagnostic Categories for Non-Aboriginal Wheatbelt residents attending Wheatbelt hospital EDs, 2020-21**

Major Diagnostic Category	Attendances	% of total
Diseases and disorders of the musculoskeletal system and connective tissue	4233	14%
Injuries, Poisonings and Toxic Effects of Drugs	3226	11%
Factors influencing health status and other contacts with health services*	3134	10%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	2657	9%
Diseases and disorders of the digestive system	2595	9%

**Top 5 Major Diagnostic Categories for Non-Aboriginal Wheatbelt residents transferred from Wheatbelt EDs to metropolitan hospitals, 2020-21**

Major Diagnostic Category	Attendances	% of metro transfers
Diseases and disorders of the digestive system	286	17%
Diseases and Disorders of the Circulatory System	284	17%
Diseases and disorders of the musculoskeletal system and connective tissue	154	9%
Diseases and Disorders of the Nervous System	139	8%
Diseases and disorders of the respiratory system	125	7%

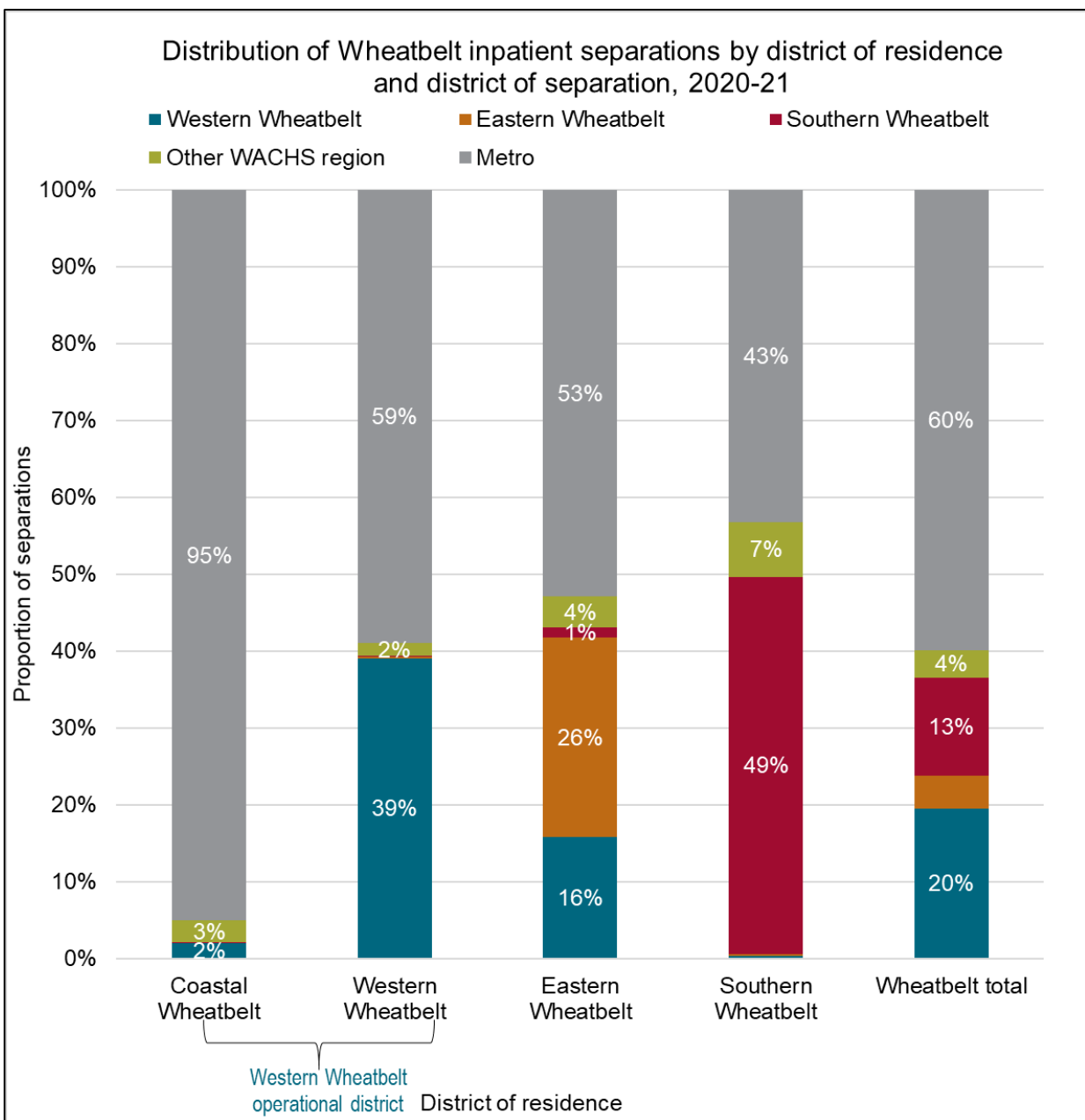
\*Factors influencing health status and other contacts with health services included diagnoses such as attention to surgical dressings, follow up examinations after other treatment, issue of repeat prescriptions, laboratory examination.

Using Wheatbelt operational boundaries, refer pages 6-7. Excludes attendances where Aboriginality status was unknown or not stated. Source: Emergency Department Collection, WACHS Business Intelligence

## Hospitalisations

### Wheatbelt summary

- Of the 23,990 inpatient separations by Wheatbelt residents across WA in 2020-21, 37% (8,765 separations) occurred in Wheatbelt hospitals (including 17% at Northam Hospital and 12% at Narrogin Hospital), while 60% (14,362) occurred in a Perth metropolitan hospital (38% in tertiary and 22% in general or specialist hospitals).
- Southern Wheatbelt residents had the highest proportion of inpatient separations at a hospital in their own district (49%, 3,005 separations), followed by Western Wheatbelt (39%, 3,994) and Eastern Wheatbelt (26%, 973). For Coastal Wheatbelt residents, 95% (3,695) of separations occurred at Perth metropolitan hospitals (including 36% at Joondalup Health Campus), as there is no inpatient service locally.

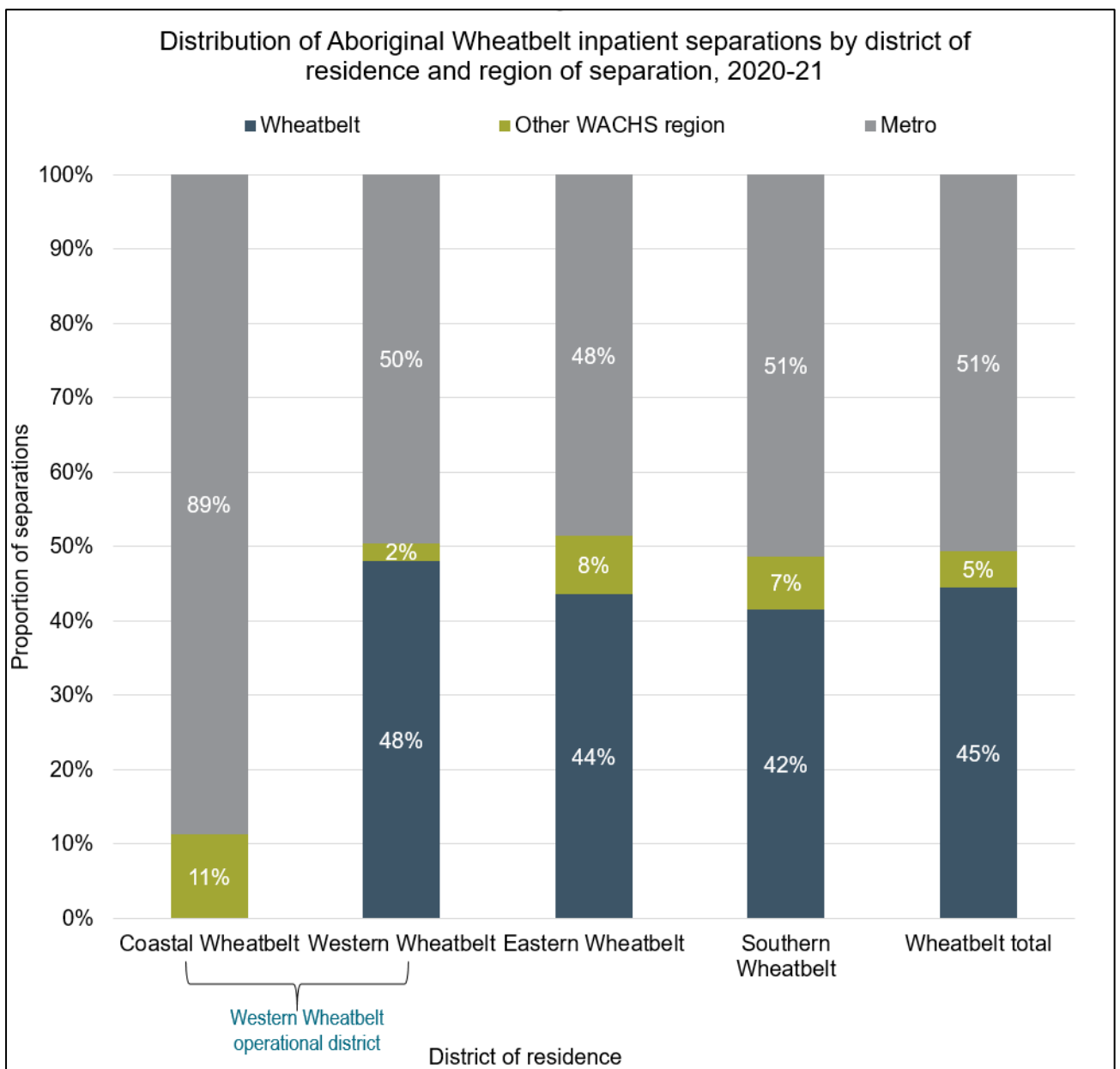


Using Wheatbelt operational boundaries refer pages 6-7. Source: Hospital Morbidity Data Collection, DoH. Excludes borders and unqualified newborns.

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

- For Aboriginal residents, of their 2,200 inpatient separations in 2020-21, 45% attended a Wheatbelt hospital (including 25% at Northam Hospital and 10% at Narrogin Hospital), while 51% occurred in a Perth metropolitan hospital (38% in tertiary and 13% in general or specialist hospitals).
- Aboriginal residents of the Western Wheatbelt had 48% of their inpatient separations at a Wheatbelt hospital (544 separations), followed by Eastern Wheatbelt (214, 44%) and Southern Wheatbelt (222, 42%). Aboriginal Coastal Wheatbelt residents had 89% of their inpatient activity occurring in Perth metropolitan hospitals (39 separations).



Using Wheatbelt operational boundaries refer pages 6-7. Source: Hospital Morbidity Data Collection, DoH. Excludes boarders and unqualified newborns.

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

## Inpatient separations for Wheatbelt residents, key characteristics, 2020-21

- The most common Enhanced Service Related Groups (ESRGs) for the 23,990 hospital separations (across all hospitals) by Wheatbelt residents in 2020-21 was Renal Dialysis (9% of separations) followed by Chemotherapy (8%). Renal Dialysis and Chemotherapy were the top 2 ESRGs for both Coastal and Western Wheatbelt district residents, while the Eastern Wheatbelt had Renal Dialysis followed by Maintenance/Respite (including Nursing Home Type) separations, and the Southern Wheatbelt had Chemotherapy followed by Colonoscopy as its most common ESRGs.
- For Aboriginal Wheatbelt residents, renal dialysis made up over one quarter (26%) of their 2,200 inpatient separations in 2020-21, followed by Chemotherapy (4%).
- Of all separations for Wheatbelt residents in 2020-21, 34% were multi-day stays. Across the Districts, the proportion of multi-day stays ranged from 31% for both Coastal and Western Wheatbelt residents to 40% for Southern Wheatbelt residents.

Wheatbelt	Separations	% of all separations
Renal Dialysis*	2170	9%
Chemotherapy*	1818	8%
Colonoscopy	959	4%
Other Gastroscopy	658	3%
Maintenance/Respite (inc NHT)	608	3%
Complex Gastroscopy	565	2%
Other Non Subspecialty Medicine	555	2%
Other Endocrinology	517	2%
Cataract Procedures	508	2%
Other Neurology	494	2%
Digestive System Diagnoses incl GI Obstruction	447	2%
Vaginal Delivery	384	2%

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Hospital Morbidity Data Collection, Department of Health.

\*Separations are a count of activity, not of unique client counts. Some ESRGs such as chemotherapy and renal dialysis are more likely than others to include clients who have had multiple separations over the reference period.



### Inpatient separations, Aboriginal Wheatbelt residents, by top ESRGs, 2020-21

Wheatbelt	Separations	% of all separations
042, Renal Dialysis*	563	26%
031, Chemotherapy*	83	4%
122, Drug & Alcohol	65	3%
125, Other Psychiatry	51	2%
114, Vaginal Delivery	50	2%
016, Other Endocrinology	47	2%
098, Injuries - Non-surgical	44	2%
044, Chronic Obstructive Airways Disease	42	2%
053, Other Non Subspecialty Medicine	38	2%
113, Ante-natal Admission	38	2%
117, Qualified Neonate	36	2%
024, Red Blood Cell Disorders	33	2%

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Hospital Morbidity Data Collection, Department of Health.

\*Separations are a count of activity, not of unique client counts. Some ESRGs such as chemotherapy and renal dialysis are more likely than others to include clients who have had multiple separations over the reference period.

### Inpatient separations, non-Aboriginal Wheatbelt residents, by top ESRGs, 2020-21

Wheatbelt	Separations	% of all separations
031, Chemotherapy	1735	8%
042, Renal Dialysis	1607	7%
022, Colonoscopy	933	4%
020, Other Gastroscopy	631	3%
131, Maintenance/Respite (inc NHT)	580	3%
019, Complex Gastroscopy	540	2%
053, Other Non Subspecialty Medicine	517	2%
082, Cataract Procedures	488	2%
016, Other Endocrinology	469	2%
039, Other Neurology	464	2%
101, Digestive System Diagnoses incl GI Obstruction	413	2%
023, Follow Up After Completed Tx W Endoscopy	367	2%

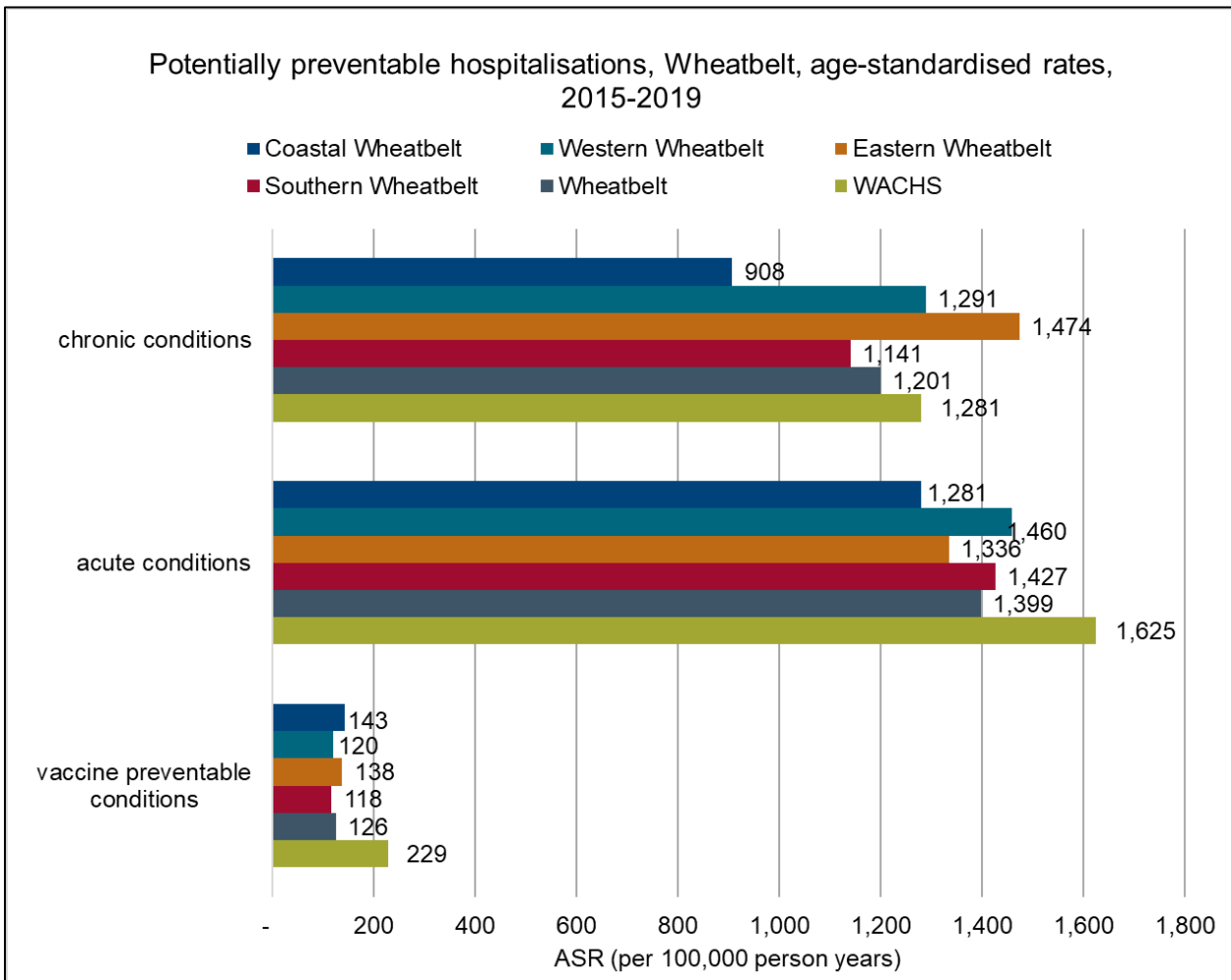
Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Hospital Morbidity Data Collection, Department of Health.

\*Separations are a count of activity, not of unique client counts. Some ESRGs such as chemotherapy and renal dialysis are more likely than others to include clients who have had multiple separations over the reference period.

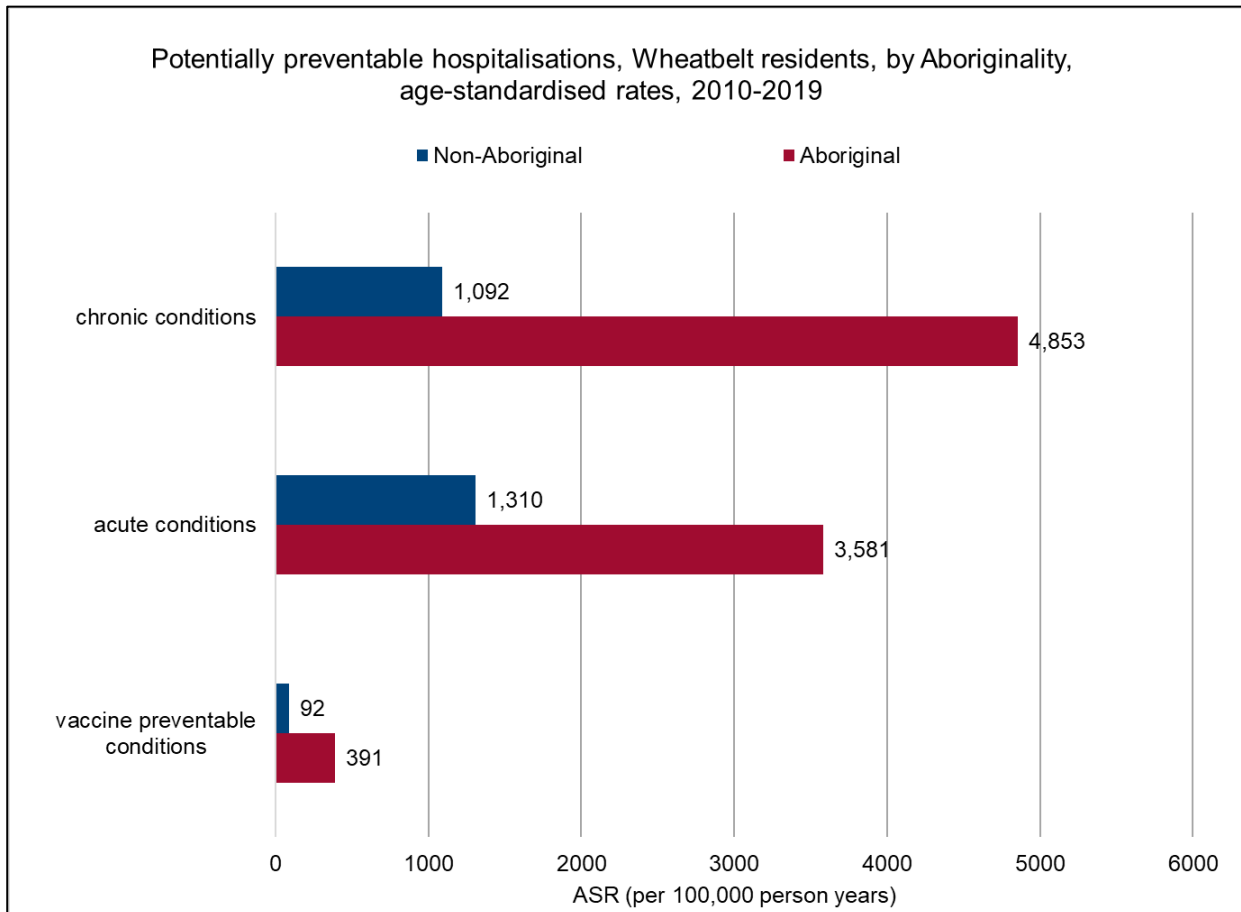
## Potentially Preventable Hospitalisations

- A potentially preventable hospitalisation (PPH) is an admission to hospital which could have been prevented through the provision of appropriate preventative health interventions and early disease management<sup>1</sup>.
- For the period 2015-2019, the rate of PPHs for Wheatbelt residents were lower than the WACHS average across all three conditions (vaccine-preventable, acute and chronic).
- For chronic conditions, Eastern Wheatbelt residents had the highest rates of PPHs (1,474 per 100,000 person years) and Coastal Wheatbelt residents had the lowest (908 per 100,000 person years). For acute conditions, Western Wheatbelt residents had the highest rates of PPHs (1,460 per 100,000 person years) and Coastal Wheatbelt residents again had the lowest (1,281 per 100,000 person years).
- For vaccine-preventable conditions, all districts ranged between 118 PPHs per 100,000 person years (for Southern Wheatbelt) and 143 per 100,000 person years (for Coastal Wheatbelt).



Using Department of Health geographic boundaries, refer pages 6-7. Source: Health Tracks, DoH

- For the period 2010-2019, the rate of PPHs for Aboriginal people was significantly higher than the non-Aboriginal rate across the three condition types. For chronic conditions, the rate was 4.4 times higher, for acute conditions the rate was 2.7 times higher and for vaccine-preventable conditions the rate was 4.2 times higher.



Source: HealthTracks, DoH

## Wheatbelt leading conditions for potentially preventable hospitalisations, 2015-2019

- The leading cause of PPHs for Wheatbelt residents for 2015-2019 was chronic obstructive pulmonary disease (COPD) (12.9% of cases), dental conditions (11.5% of cases) and urinary tract infections (10.2% of cases). COPD was the top PPH condition across all districts except for Coastal Wheatbelt (dental conditions).
- The incidence of most leading PPHs in the Wheatbelt was in line with the State average. PPHs for chronic obstructive pulmonary disease was the highest condition above the State average (SRR = 1.31) while PPHs for Iron deficiency anaemia were the lowest below the State average (SRR = 0.86).

Condition	Type	N	% of all cases	SRR (comparison with State average)
Chronic obstructive pulmonary disease	chronic	1,578	12.9%	1.31
Dental conditions	acute	1,402	11.5%	0.94
Urinary tract infections	acute	1,249	10.2%	0.99
Congestive cardiac failure	chronic	1,166	9.5%	1.04
Cellulitis	acute	1,159	9.5%	1.21
Diabetes complications	chronic	1,152	9.4%	1.3
Iron deficiency anaemia	chronic	715	5.9%	0.86
Angina	chronic	697	5.7%	1.04
ENT infections	acute	691	5.7%	1.25
Convulsions and epilepsy	acute	580	4.7%	1.17

Source: HealthTracks, DoH.

### Top 5 PPHs for Wheatbelt residents district of residence, 2015-2019

		1st	2nd	3rd	4th	5th	Total
Coastal Wheatbelt	Condition	Dental conditions	Urinary tract infections	Diabetes complications	Congestive cardiac failure	Cellulitis	
	No.	327	209	184	171	141	<b>1,884</b>
	SRR	1.2	0.93	1.09	0.92	0.8	<b>0.9</b>
Western Wheatbelt	Condition	Chronic obstructive pulmonary disease	Dental conditions	Urinary tract infections	Cellulitis	Congestive cardiac failure	
	No.	670	614	519	507	504	<b>5,288</b>
	SRR	1.33	1	0.99	1.27	1.09	<b>1.11</b>
Eastern Wheatbelt	Condition	Chronic obstructive pulmonary disease	Urinary tract infections	Congestive cardiac failure	Diabetes complications	Cellulitis	
	No.	337	214	193	180	167	<b>1,913</b>
	SRR	2	1.18	1.14	1.48	1.23	<b>1.18</b>
Southern Wheatbelt	Condition	Chronic obstructive pulmonary disease	Cellulitis	Dental conditions	Urinary tract infections	Congestive cardiac failure	
	No.	431	344	335	307	298	<b>3,126</b>
	SRR	1.39	1.38	0.85	0.93	1	<b>1.04</b>

Using Department of Health geographic boundaries, refer pages 6-7.

### Top 5 PPHs by Aboriginality, Wheatbelt residents, 2010-2019

- For the period 2010-2019, the highest occurring PPH condition for Aboriginal Wheatbelt residents was COPD (435 PPHs, 15% of total PPHs for Aboriginal people) followed by Convulsions and epilepsy (322 PPHs, 11%). In comparison, Convulsions and epilepsy was only the 10<sup>th</sup> highest PPH for non-Aboriginal residents. Non-Aboriginal Wheatbelt residents had Dental conditions as the highest occurring PPH (2,583 PPHs, 12% of total PPHs for non-Aboriginal people), followed by COPD (2,485 PPHs, 12%).

		1st	2nd	3rd	4th	5th	Total
Aboriginal	Condition	Chronic obstructive pulmonary disease	Convulsions and epilepsy	Cellulitis	Diabetes complications	Dental conditions	
	No.	435	322	289	270	252	<b>2,946</b>
	% of total	15%	11%	10%	9%	9%	
Non-Aboriginal	Condition	Dental conditions	Chronic obstructive pulmonary disease	Urinary tract infections	Diabetes complications	Cellulitis	
	No.	2,582	2,485	2,240	2,041	1,952	<b>20,990</b>
	% of total	12%	12%	11%	10%	9%	

Source: HealthTracks, DoH.

Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

## Communicable disease notifications

**Please note COVID-19 data and information is in development and will be included in the later version of this profile available in early 2023.**

- For the period 2014-2018, the communicable disease notifications for Wheatbelt residents was slightly lower than the State rate (SRR = 0.82). The rates for most categories was comparable or lower than the State rate except for Zoonotic diseases (4.71 times State rate, however there were very low notifications) and Blood-borne diseases (1.61 times the State rate).

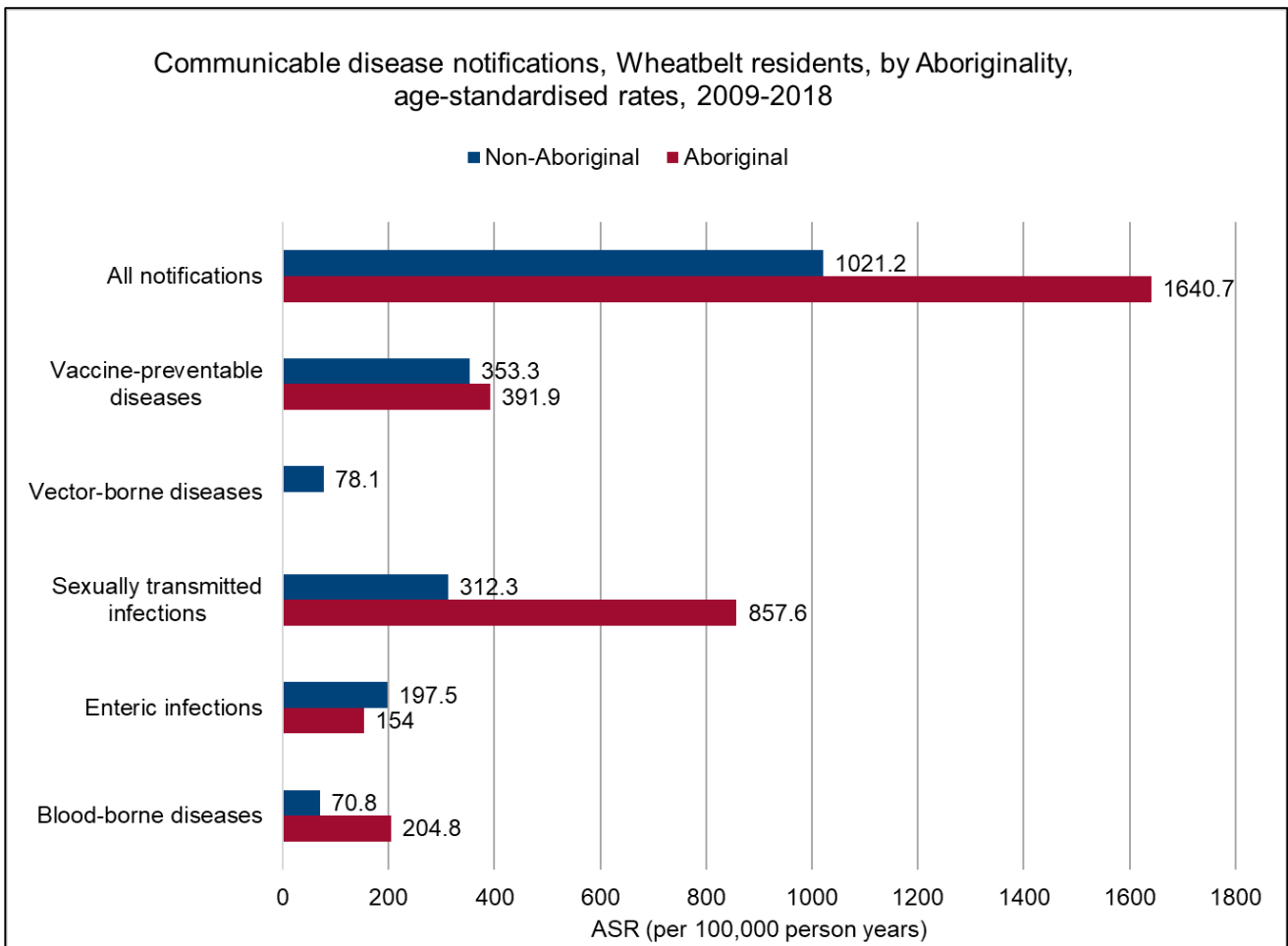
Condition	Notifications	SRR
Blood-borne diseases	373	1.61
Enteric infections	826	0.92
Sexually transmitted infections	1,073	0.64
Vector-borne diseases	280	1.3
Vaccine-preventable diseases	1,469	0.78
Zoonotic diseases	12	4.71
Other notifiable diseases	34	0.85
<b>All notifications</b>	<b>4,067</b>	<b>0.82</b>

SRR = The standardised rate ratio is the ratio between a health region (or district) and the State. A ration of 1 means the regional rate is the same as the State, a value of 2 indicates that the rate is twice that of the State, and an 0.5 indicates the rate in a region is half that of the State population.

Source: HealthTracks, DoH



- For the period 2009-2018, the rate of communicable disease notifications for Aboriginal people was 1.6 times higher than the non-Aboriginal rate across all condition types. For sexually transmitted infections, the rate was 2.7 times higher for Aboriginal residents and for blood-borne diseases the rate was 2.9 times higher, although the rates were similar and differences not statistically significant for vaccine-preventable diseases and enteric infections.



*Excludes 'zoonotic diseases' and other 'communicable diseases' due to low numbers.*

*Source: Health Tracks, DoH.*

## Wheatbelt leading communicable disease notifications, 2014-2018

- The leading cause of communicable disease notifications for 2014-2018 for Wheatbelt residents was chlamydia (genital) (22.6% of cases), influenza (20% of cases) and campylobacteriosis (11.5% of cases). Chlamydia was the leading cause across all districts except for Coastal Wheatbelt (influenza).
- The incidence of most leading communicable disease notifications in the Wheatbelt was comparable with the State average, except for Hepatitis C (SRR = 1.71) and Ross River virus (SRR = 1.65).

Condition	Type	N	% of all cases	SRR (comparison with State average)
Chlamydia (genital)	Sexually-transmitted	920	22.6%	0.71
Influenza	Vaccine-preventable	813	20.0%	0.84
Campylobacteriosis	Enteric	466	11.5%	0.96
Varicella (shingles)	Vaccine-preventable	346	8.5%	1.19
Hepatitis C	Blood-borne	263	6.5%	1.71
Salmonellosis	Enteric	259	6.4%	0.93
Ross River virus	Vector-borne	233	5.7%	1.65
Pertussis/Whooping cough	Vaccine-preventable	139	3.4%	0.55
Gonorrhoea	Sexually-transmitted	132	3.2%	0.39
Hepatitis B (acute or carrier)	Blood-borne	109	2.7%	1.41

Source: HealthTracks, DoH

### Top 5 communicable disease notifications for Wheatbelt residents by district of residence, 2014-2018

		1st	2nd	3rd	4th	5th	Total
Coastal Wheatbelt	Condition	Influenza	Chlamydia (genital)	Campylobacteriosis	Varicella (shingles)	Ross River virus	
	No.	190	136	95	72	51	<b>750</b>
	SRR	1.08	0.58	1.06	1.33	1.92	<b>0.83</b>
Western Wheatbelt	Condition	Chlamydia (genital)	Influenza	Campylobacteriosis	Hepatitis C	Varicella (shingles)	
	No.	435	413	179	168	155	<b>1,953</b>
	SRR	0.81	1.03	0.89	2.64	1.28	<b>0.95</b>
Eastern Wheatbelt	Condition	Chlamydia (genital)	Influenza	Varicella (shingles)	Campylobacteriosis	Salmonellosis	
	No.	110	83	70	41	28	<b>464</b>
	SRR	0.57	0.62	1.73	0.6	0.72	<b>0.66</b>
Southern Wheatbelt	Condition	Chlamydia (genital)	Campylobacteriosis	Influenza	Salmonellosis	Ross River virus	
	No.	239	151	127	80	53	<b>900</b>
	SRR	0.74	1.2	0.5	1.08	1.46	<b>0.71</b>

Using Department of Health geographic boundaries, refer pages 6-7.

Source: HealthTracks, DoH.

### Top 5 Communicable disease notifications by Aboriginality, Wheatbelt residents, 2009-2018

- For the period 2009-2018, the highest number of communicable disease notifications for Aboriginal Wheatbelt residents was for Chlamydia (genital) (292 notifications, 42% of total notifications for Aboriginal people) followed by Influenza (92 notifications, 13%) and gonorrhoea (77 notifications, 11%). Chlamydia (genital) and influenza were also the top 10 conditions for notifications for non-Aboriginal residents (1,495, 22% and 1,285, 19% respectively) however the third highest was campylobacteriosis (828, 12%), which made up comparably fewer notifications for Aboriginal residents (18, 3%).

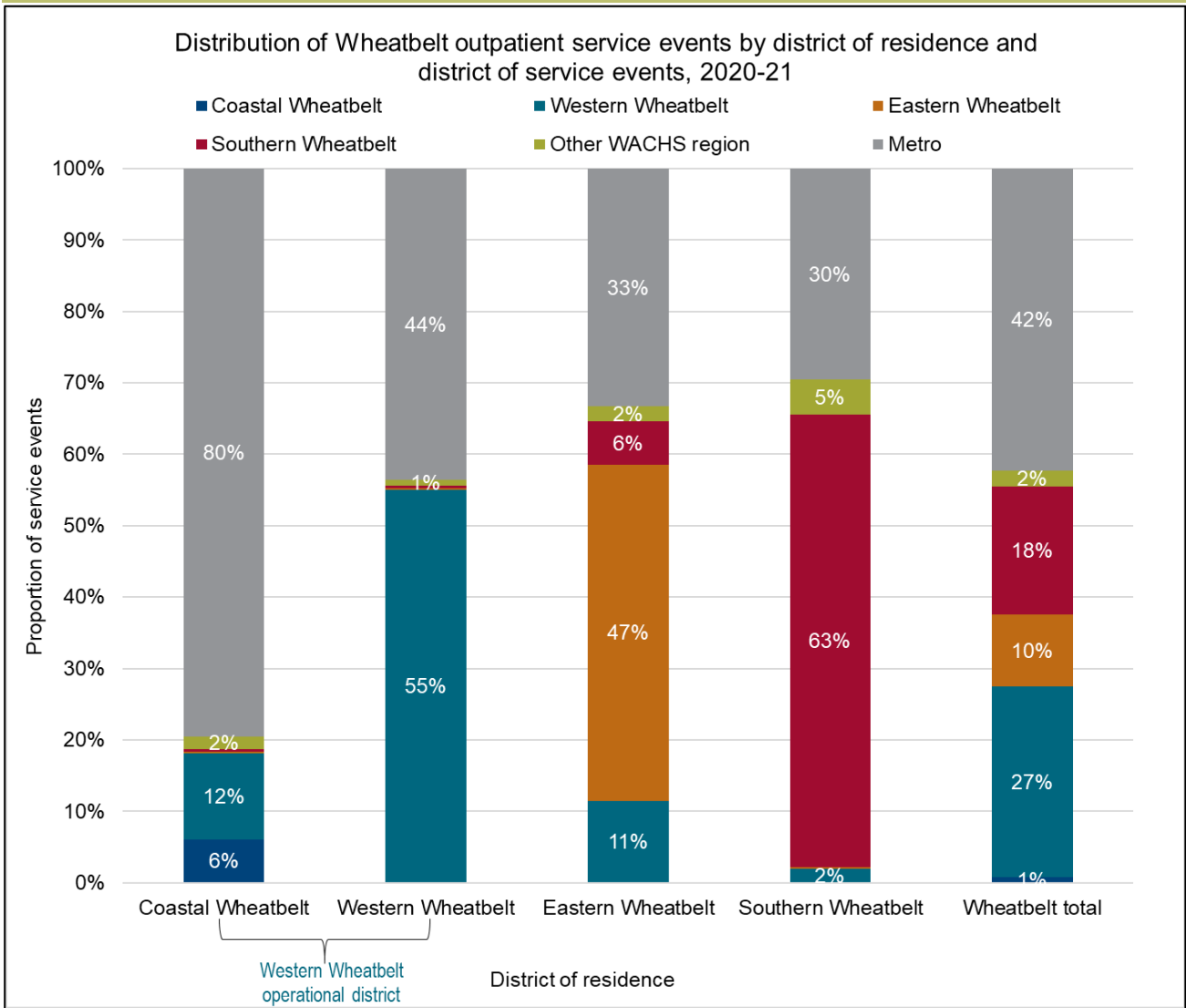
		1st	2nd	3rd	4th	5th	Total
Aboriginal	Condition	Chlamydia (genital)	Influenza	Gonorrhoea	Hepatitis C	Pertussis/Whooping cough	
	No.	292	92	77	68	27	<b>699</b>
	% of total	42%	13%	11%	10%	4%	
Non-Aboriginal	Condition	Chlamydia (genital)	Influenza	Campylobacteriosis	Varicella (shingles)	Hepatitis C	
	No.	1,495	1,285	828	554	307	<b>6,801</b>
	% of total	22%	19%	12%	8%	5%	

Source: HealthTracks, DoH.

## Outpatient

### Wheatbelt summary

- Of the 150,125 outpatient service events for Wheatbelt residents across WA in 2020-21, 42% (63,598) occurred at Perth metropolitan hospitals, followed by 27% (40,104) at Western Wheatbelt hospitals (21% at Northam Hospital).
- In 2020-21 the overall proportion of appointments for Wheatbelt residents that were delivered by telephone/telehealth was 24% (35,634) (18% for Wheatbelt hospitals and 31% for metro hospitals). This proportion of telephone/telehealth appointments ranged from 25% for Southern Wheatbelt residents to 22% for Eastern Wheatbelt residents.
- Southern Wheatbelt residents had the highest proportion of outpatient service events at a hospital in their own district (63%, 24,682 service events), followed by Eastern Wheatbelt (47%, 14,864) and Western Wheatbelt (55%, 33,399). Coastal Wheatbelt residents had just 6% (1,154) of their outpatient services at a hospital in their district, with 80% (15,037) of services for its residents occurring at metropolitan hospitals.



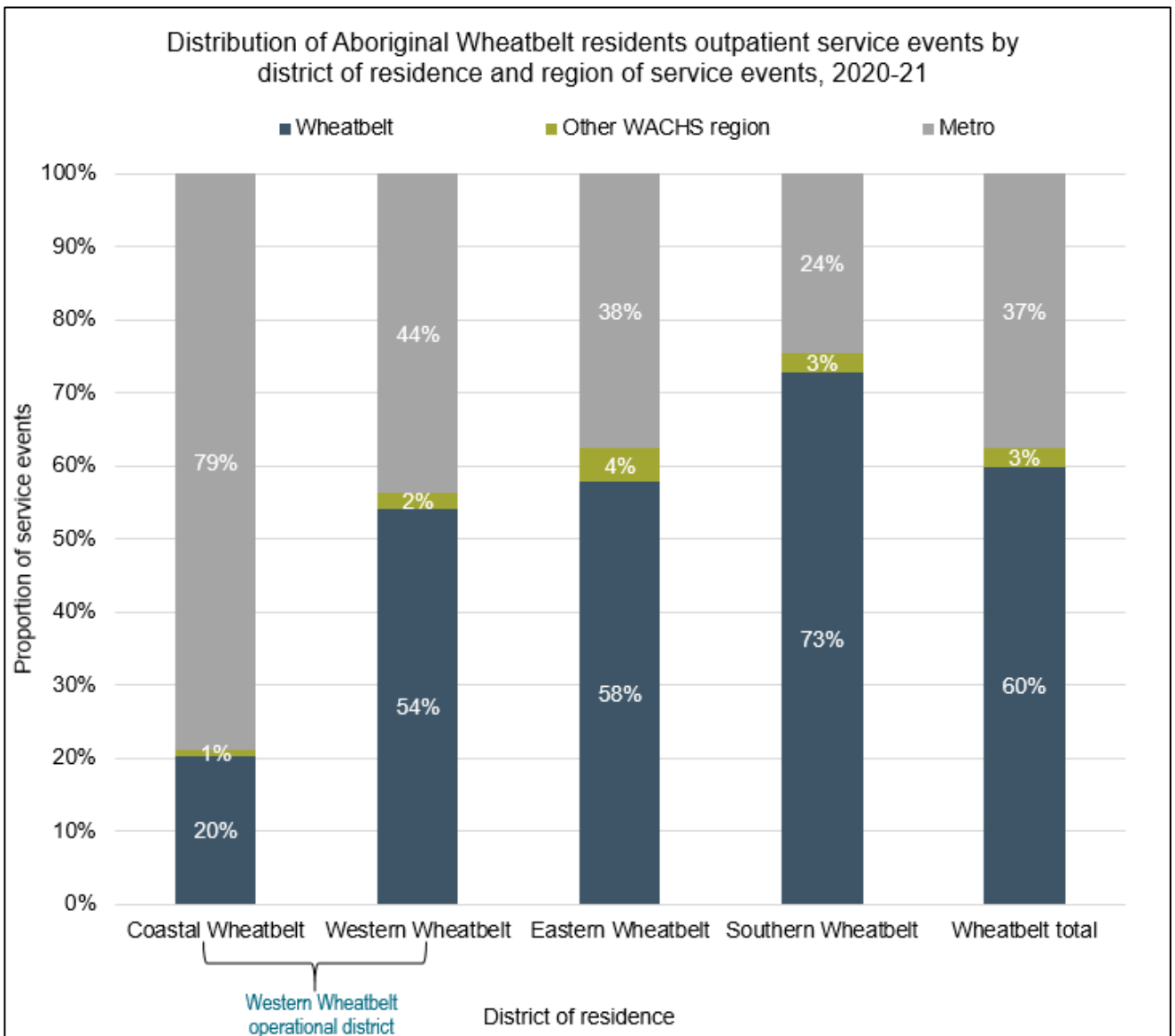
Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Non-admitted Data Collection, DoH

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

- For Aboriginal residents, of their 9,772 outpatient service events in 2020-21, 60% attended a Wheatbelt hospital (including 20% at Northam Hospital, 10% at Kondinin Hospital and 8% at Narrogin Hospital), while 37% occurred in a Perth metropolitan hospital.
- Aboriginal residents of the Southern Wheatbelt had 73% of their outpatient activity at a Wheatbelt hospital (2,301 service events), followed by Eastern Wheatbelt (1,075 service events, 58%), Western Wheatbelt (2,405, 54%) and Coastal Wheatbelt (65, 20%).



Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Non-admitted Data Collection, DoH

## Outpatient activity for Wheatbelt residents, key characteristics

- For Wheatbelt residents in 2020-21, the most common Tier 2 Medical code was 20.29 Orthopaedics (3% of total service events) and 20.42 Medical Oncology (Consultation) (2%), while the top Nursing codes (including allied health) were 40.53 General Medicine (20% of total service events) followed by 40.13 Wound Management (6%).
- For Aboriginal Wheatbelt residents, the most common Tier 2 Medical code was 20.40 Obstetrics (2% of total service events for Aboriginal residents) and 20.53 Obstetrics - Management of complex pregnancy (2%), while the top Nursing codes (including allied health) were 40.53 General Medicine (26%) followed by 40.28 Midwifery (9%).

## Outpatient activity, Wheatbelt residents, by top Tier 2 codes, 2020-21

Top 10 Medical (20) codes	Service events	% of total	Top 10 Nursing (40) codes	Service events	% of total
20.29 Orthopaedics	3937	3%	40.53 General Medicine	30039	20%
20.42 Medical Oncology (Consultation)	2976	2%	40.13 Wound Management	8903	6%
20.40 Obstetrics	2279	2%	40.28 Midwifery	8367	6%
20.46 Plastic and Reconstructive Surgery	2093	1%	40.09 Physiotherapy	8342	6%
20.02 Anaesthetics	1990	1%	40.06 Occupational Therapy	6216	4%
20.07 General Surgery	1852	1%	40.07 Pre-Admission and Pre-Anaesthesia	4614	3%
20.17 Ophthalmology	1785	1%	40.58 Hospital Avoidance Programs	4058	3%
20.10 Haematology	1564	1%	40.12 Rehabilitation	3112	2%
20.53 Obstetrics – management of complex pregnancy	1424	1%	40.25 Podiatry	2685	2%
20.43 Radiation Oncology (Consultation)	1325	1%	40.52 Oncology	2574	2%

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Non-admitted Data Collection, DoH

### Outpatient activity, Aboriginal Wheatbelt residents, by top Tier 2 codes, 2020-21

Top 10 Medical (20) codes	Service events	% of total	Top 10 Nursing (40) codes	Service events	% of total
20.40 Obstetrics	232	2%	40.53 General Medicine	2572	26%
20.53 Obstetrics – management of complex pregnancy	189	2%	40.28 Midwifery	842	9%
20.29 Orthopaedics	178	2%	40.13 Wound Management	436	4%
20.42 Medical Oncology (Consultation)	156	2%	40.09 Physiotherapy	364	4%
20.17 Ophthalmology	131	1%	40.06 Occupational Therapy	360	4%
20.46 Plastic and Reconstructive Surgery	129	1%	40.58 Hospital Avoidance Programs	308	3%
20.35 Nephrology	114	1%	40.47 Nephrology	280	3%
20.02 Anaesthetics	110	1%	40.07 Pre-Admission and Pre-Anaesthesia	213	2%
20.22 Cardiology	107	1%	40.25 Podiatry	175	2%
20.07 General Surgery	85	1%	40.11 Social Work	151	2%

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Non-admitted Data Collection, DoH

### Outpatient activity, non-Aboriginal Wheatbelt residents, by top Tier 2 codes, 2020-21

Top 10 Medical (20) codes	Service events	% of total	Top 10 Nursing (40) codes	Service events	% of total
20.29 Orthopaedics	3742	3%	40.53 General Medicine	27214	20%
20.42 Medical Oncology (Consultation)	2800	2%	40.13 Wound Management	8420	6%
20.40 Obstetrics	1998	1%	40.09 Physiotherapy	7877	6%
20.46 Plastic and Reconstructive Surgery	1966	1%	40.28 Midwifery	7518	6%
20.02 Anaesthetics	1875	1%	40.06 Occupational Therapy	5836	4%
20.07 General Surgery	1760	1%	40.07 Pre-Admission and Pre-Anaesthesia	4277	3%
20.17 Ophthalmology	1653	1%	40.58 Hospital Avoidance Programs	3382	2%
20.10 Haematology	1522	1%	40.12 Rehabilitation	2996	2%
20.53 Obstetrics – management of complex pregnancy	1235	1%	40.25 Podiatry	2497	2%
20.38 Gynaecology	1182	1%	40.52 Oncology	2464	2%

Using Wheatbelt operational boundaries, refer pages 6-7. Excludes service events where Aboriginality was not stated or unknown.

Source: Non-admitted Data Collection, DoH

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE



## Mental health

### Psychological distress

Psychological distress is commonly measured using the Kessler Psychological Distress Scale—10 items (K10). The K10 questionnaire was developed to yield a global measure of psychosocial distress, based on questions about people's level of nervousness, agitation, psychological fatigue and depression in the past four weeks. There is a correlation between high levels of psychological distress and common mental health disorders and therefore can be used as a proxy estimate of the mental wellbeing of a population or community.

- For the period 2015-2019, the proportion of people with reported high or very high levels of psychological distress was highest for the Western and Eastern Wheatbelt districts (both 8.3%) and lowest for the Southern Wheatbelt (4.8%). All districts were lower than the WA State average (8.8%).
- For females, the proportion with high or very high psychological distress was highest in Coastal Wheatbelt (11.9%), while for males, the rate was highest in the Western Wheatbelt (12.4%).

### Prevalence of high or very high psychological distress, 2015-2019

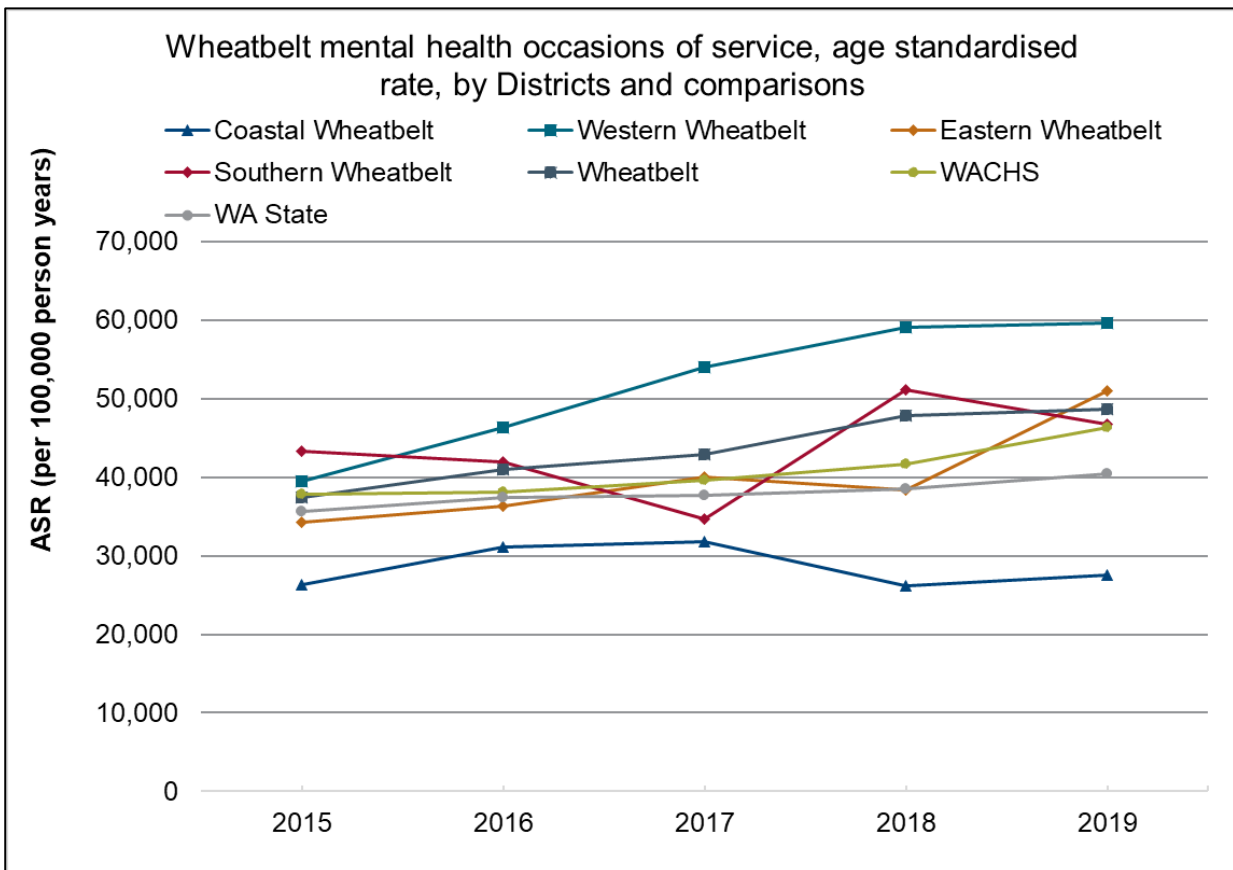
Area	Females	Males	Persons
Coastal Wheatbelt	11.9	2.6	7
Western Wheatbelt	4.4	12.4	8.3
Eastern Wheatbelt	7.1	9.3	8.3
Southern Wheatbelt	4.9	4.8	4.8
Wheatbelt average	6.1	7.8	7
WACHS average	8.1	7.5	7.8
WA State	9.8	7.8	8.8

Using Department of Health geographic boundaries, refer pages 6-7.

Source: HealthTracks, DoH

### Mental health community hospital activity of Wheatbelt residents

- Between 2015 and 2019, the rate of community mental health occasions of service fluctuated across the Wheatbelt districts but was generally highest for residents of the Western Wheatbelt and lowest for the residents of the Coastal Wheatbelt. The rate increased by an annual average of 11% between 2015 and 2019 for the Western and Eastern Wheatbelt districts, while only increasing by an annual average of 2% for Southern Wheatbelt and 1% for Coastal Wheatbelt districts.
- The rates were generally significantly higher than the WA state rate aside from Coastal Wheatbelt residents which was significantly lower.
- Across the Wheatbelt, between 2015 and 2019, the male rate of mental health occasions of service increased significantly, by an annual average of 7.6%. Similarly, the female rate also increased significantly over the same period, by an annual average of 6.2%.
- For the period 2010-2019, the rate of mental health service contacts for Aboriginal people was 3.3 times higher than the non-Aboriginal rate.



Using Department of Health geographic boundaries, refer pages 6-7.

Source: Department of Health, Health Tracks

### Number of community mental health occasions of service by gender, Wheatbelt residents 2015–2019

District	Gender	2015	2016	2017	2018	2019	Annual average change in rate
Coastal Wheatbelt	Males	1,376	1,592	1,853	1,719	1,631	4.1%
	Females	1,853	2,201	2,056	1,668	2,002	-1.7%
	<b>Persons</b>	<b>3,229</b>	<b>3,793</b>	<b>3,909</b>	<b>3,387</b>	<b>3,633</b>	
Western Wheatbelt	Males	5,393	6,511	7,675	8,208	7,815	11.6%
	Females	5,475	5,842	6,941	7,655	7,537	10.4%
	<b>Persons</b>	<b>10,868</b>	<b>12,353</b>	<b>14,617</b>	<b>15,863</b>	<b>15,352</b>	
Eastern Wheatbelt	Males	1,667	1,548	1,531	1,470	1,803	1.2%
	Females	1,507	1,721	2,161	2,120	2,714	16.0%
	<b>Persons</b>	<b>3,174</b>	<b>3,269</b>	<b>3,692</b>	<b>3,590</b>	<b>4,517</b>	
Southern Wheatbelt	Males	3,401	3,117	2,608	3,843	3,667	5.0%
	Females	4,728	4,600	3,976	5,388	4,109	0.4%
	<b>Persons</b>	<b>8,129</b>	<b>7,717</b>	<b>6,584</b>	<b>9,231</b>	<b>7,776</b>	
Wheatbelt Total	Males	11,837	12,768	13,667	15,240	14,916	7.6%
	Females	13,563	14,364	15,134	16,831	16,362	6.2%
	<b>Persons</b>	<b>25,400</b>	<b>27,132</b>	<b>28,802</b>	<b>32,071</b>	<b>31,278</b>	

Using Department of Health geographic boundaries, refer pages 6-7. Source: HealthTracks, DoH

- In 2020-21, there were 417 mental-health related inpatient separations for Wheatbelt residents (across designated mental health wards and general wards), with an average length of stay of 8.2 days. Over half (56%) of these separations occurred in a metropolitan hospital, with one-third (33%) in Wheatbelt hospitals and 12% in other WACHS regions.

### Number of mental health inpatient separations (designated Mental health and general wards), Wheatbelt residents, 2020-21

	Within Wheatbelt		To Metro		Other WACHS region		Total	
	separations	ALOS	separations	ALOS	separations	ALOS	separations	ALOS
Coastal Wheatbelt	2	6.5	66	12.5	2	5.5	70	12.2
Western Wheatbelt	38	2.6	98	10.8	5	11.8	141	8.6
Eastern Wheatbelt	13	2.0	20	10.1	7	6.6	40	6.8
Southern Wheatbelt	84	2.6	48	9.7	34	11.1	166	6.4
Wheatbelt Total	137	2.6	232	11.0	48	10.3	417	8.2

Using Wheatbelt operational boundaries, refer pages 6-7.

Source: Hospital Morbidity Data Collection, DoH. Includes activity under the ESRGs 123, Schizophrenia, 124, Major Affective Disorders, 125 – Other Psychiatry, 142 – Drug & Alcohol in Mental Health Ward.

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

## Causes of death

- Between 2014-2018 there were 2,818 deaths of Wheatbelt residents, with 55% of these deaths being due to Neoplasms (Cancer tumours) or Circulatory diseases. These were the leading two causes of death across all Districts.
- Most causes of death across the Wheatbelt districts occurred at similar rates to the State rate, with the highest being External causes of mortality in the Western Wheatbelt, which occurred at 1.61 times the State rate. Specifically this was impacted by deaths from transport accidents, which occurred at 3.81 times the State rate for Western Wheatbelt residents (41 deaths).

### Top five causes of death, Wheatbelt residents, 2014–2018

		1st	2nd	3rd	4th	5th	Total
Coastal Wheatbelt	<i>Condition</i>	Neoplasms	Circulatory diseases	External causes of mortality	Respiratory diseases	Digestive diseases	
	<i>No.</i>	128	73	40	34	17	<b>346</b>
	<i>SRR</i>	0.9	0.75	1.24	0.88	1.15	<b>0.84</b>
Western Wheatbelt	<i>Condition</i>	Neoplasms	Circulatory diseases	External causes of mortality	Nervous system diseases	Respiratory diseases	
	<i>No.</i>	361	293	127	105	98	<b>1,211</b>
	<i>SRR</i>	1.07	1.09	1.61	1	0.93	<b>1.13</b>
Eastern Wheatbelt	<i>Condition</i>	Neoplasms	Circulatory diseases	Respiratory diseases	External causes of mortality	Nervous system diseases	
	<i>No.</i>	147	124	49	46	27	<b>474</b>
	<i>SRR</i>	1.26	1.2	1.21	1.62	0.65	<b>1.19</b>
Southern Wheatbelt	<i>Condition</i>	Neoplasms	Circulatory diseases	Respiratory diseases	Nervous system diseases	External causes of mortality	
	<i>No.</i>	243	193	96	71	52	<b>784</b>
	<i>SRR</i>	1.15	1.09	1.39	1.01	1.03	<b>1.13</b>
Wheatbelt	<i>Condition</i>	Neoplasms	Circulatory diseases	Respiratory diseases	External causes of mortality	Nervous system diseases	
	<i>No.</i>	879	683	277	265	219	<b>2,818</b>
	<i>SRR</i>	1.09	1.06	1.09	1.4	0.86	<b>1.09</b>

SRR = Standardised rate ratio between a health region (or district) and the state. A ratio of 1 means that the regional rate is the same as the state, and a value of 2 indicates the regional rate is twice that of the state. A ratio of 0.5 indicates that the number of cases in a region is half that of the State population.

Using Department of Health geographic boundaries, refer pages 6-7.

Source: Department of Health, Health Tracks

## Maternal and child health status

### Births

- For 2019, the Southern Wheatbelt district had the highest age-specific birth rate (94.3 births per 1,000 women aged 15–44 years) while the Coastal Wheatbelt district had the lowest (57.9 births per 1,000 women). Overall the Wheatbelt age-specific birth rate (69.3) was slightly lower than WACHS average (72.2) but higher than the WA State average (62.4).
- The Eastern Wheatbelt had the highest proportion of teenage births (4.4%) while the Southern Wheatbelt had the lowest (1%). Overall the Wheatbelt average proportion of teenage births (2.6%) was almost half the WACHS average (5.1%) but higher than the WA State average (2.1%).
- The Coastal and Western Wheatbelt districts had the equal highest proportion of births to women aged 35 years and over (19.8%), while the Southern Wheatbelt had the lowest (17.1%). Overall the Wheatbelt average of births to women aged 35 years and over (18.2%) was higher than the WACHS average (15.2%) but lower than the WA State average (24.3%).

### Maternity key indicators, Wheatbelt, 2019

District	Age-specific birth rate*	Teenage births (%)	Births in women aged 35 years+ (%)
Coastal Wheatbelt	57.9	1.6	19.8
Western Wheatbelt	69.4	3.6	19.8
Eastern Wheatbelt	73.7	4.4	14.2
Southern Wheatbelt	75.5	1	17.1
Wheatbelt	69.3	2.6	18.2
WACHS	72.2	5.1	15.2
WA average	62.4	2.1	24.3

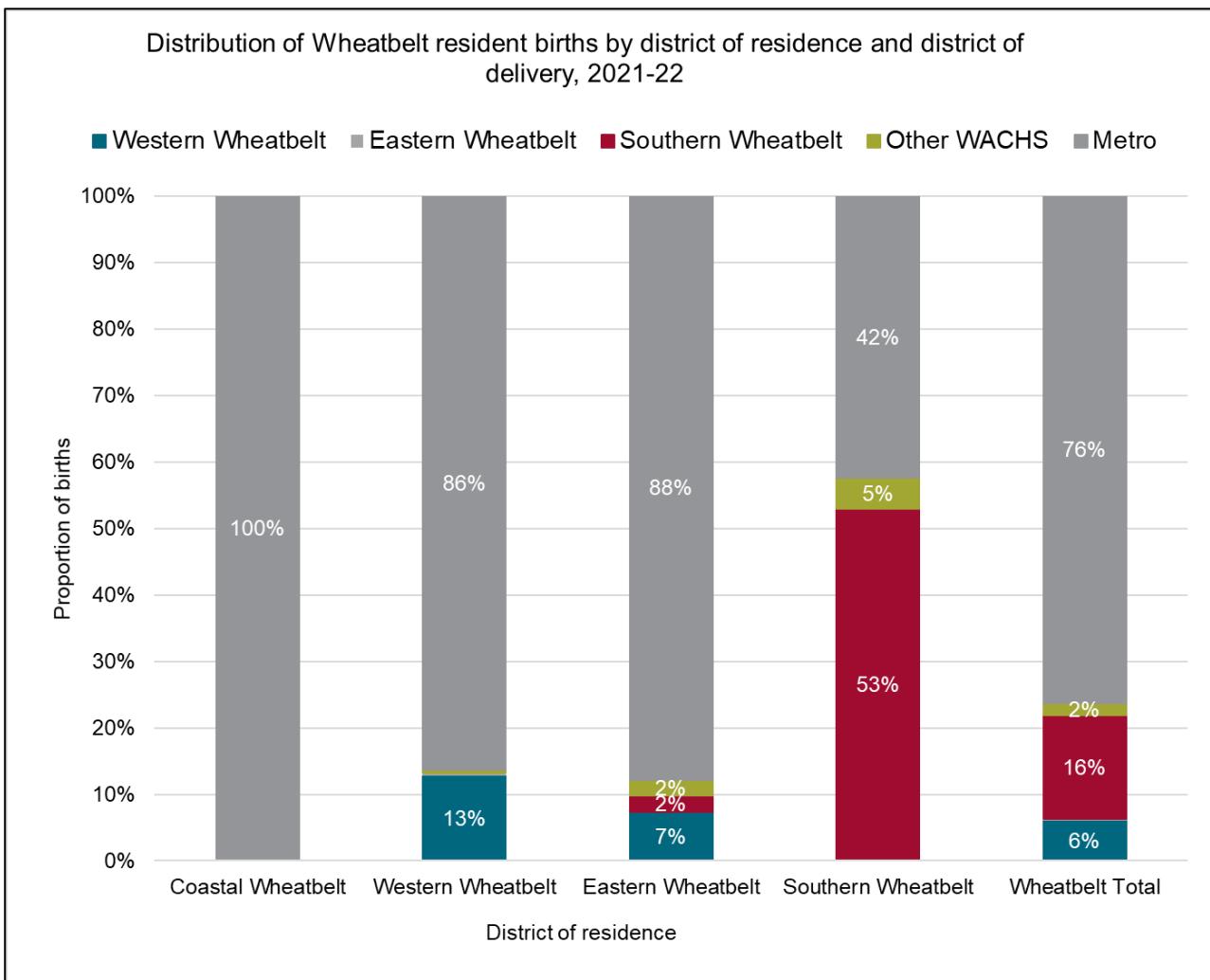
\*per 1,000 women aged 15-44 years.

Using Department of Health geographic boundaries, refer pages 6-7..

Source: Department of Health, Health Tracks

### Births by area of delivery

- The only two birthing suites in the Wheatbelt are at Northam and Narrogin.
- Of the 590 public births by Wheatbelt residents in 2021-22, 76% occurred at Perth metropolitan hospitals, with the highest proportion being for residents of the Coastal Wheatbelt (100%) and Eastern Wheatbelt (88%) districts as these residents have no local birthing suite in their district, and the lowest proportion by Southern Wheatbelt residents (42%).
- Southern Wheatbelt residents had the highest proportion of births at a hospital in their own district (53% at Narrogin Hospital), followed by Western Wheatbelt (13% at Northam).
- Southern Wheatbelt residents also had the highest proportion of births at a hospital in another WACHS region (5% at Albany Hospital).

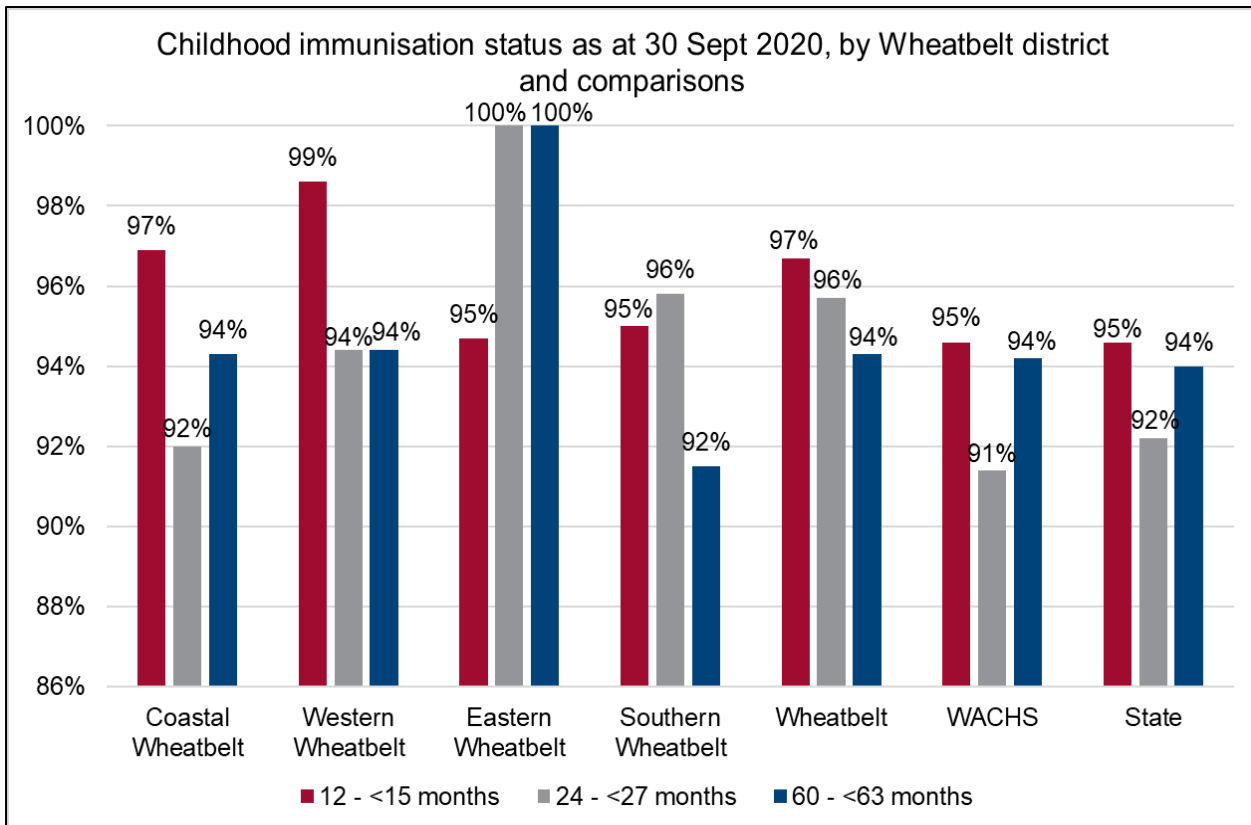


Using Department of Health geographic boundaries, refer pages 6-7.

Source: Midwives Notification System, Department of Health

## Childhood Immunisation

- In 2020, the Eastern Wheatbelt had 100% of children immunised at five years of age, while the Southern Wheatbelt had the lowest proportion (92%).
- The Coastal and Western Wheatbelt had the same proportion of children immunised at five years of age as the Wheatbelt, WACHS and WA State averages (all 94%).



Using Department of Health geographic boundaries, refer pages 6-7.

Source: HealthTracks, DoH

**Please note additional school aged and adult immunisation data is in development and will be included in the later version of this profile available in early 2023.**



## Australian Early Childhood Development Census (AEDC)

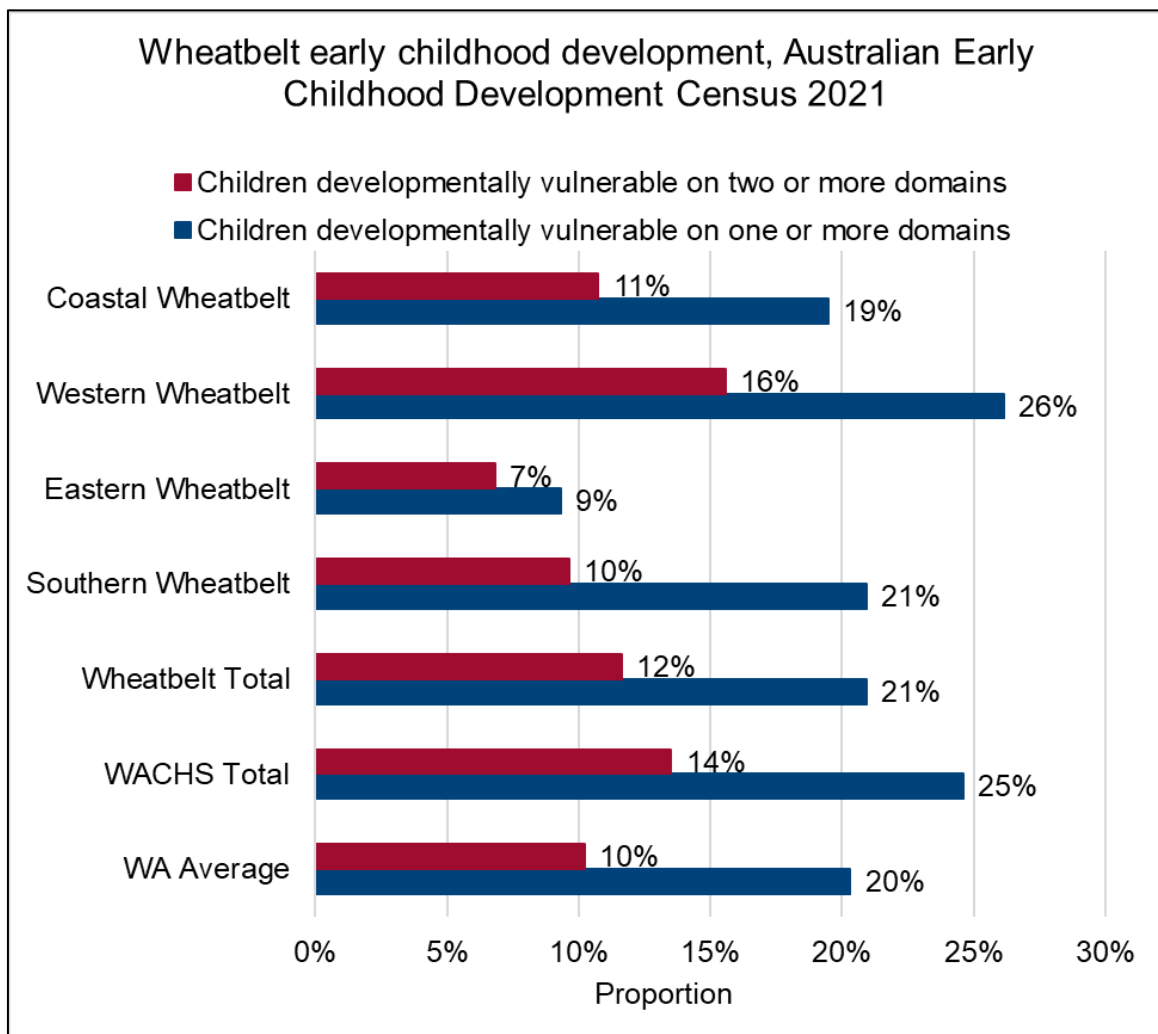
The AEDC uses the early development instrument tool to measure how young children have developed as they start their first year of full-time school.

A teacher completes a checklist for each child across each of the five domains of early childhood development: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge.

The scores of all Australian children are ranked and children ranked in the bottom 10% are classed as “developmentally vulnerable” whereas those in the top 75% are classed as “on track” while those in between are classed as “at risk”.

Results are reported by a child’s community of residence.

- In 2021, the proportion of children rated as developmentally vulnerable on one or more domains of the AEDC in the Wheatbelt was 21%, lower than the WACHS average (25%) but similar to the WA State average (20%). The proportion was highest for children in the Western Wheatbelt (26%) and lowest for those in the Eastern Wheatbelt (9%). This pattern was also evident for vulnerability on two or more domains.



Source: Australian Early Development Census. Data for districts has been aggregated from Local Government Area level to the Wheatbelt operational boundaries, some LGAs do not have available data due to low numbers.

**Our Values: Community | Compassion | Quality | Integrity | Equity | Curiosity**

ONCE PRINTED DOCUMENT MAY BE OUT OF DATE - REFER CURRENT VERSION ONLINE

## Sources for further information

WACHS Publications (<https://www.wacountry.health.wa.gov.au/About-us/Publications>)

Australian Bureau of Statistics (<https://www.abs.gov.au/>)

Australian Institute of Health and Welfare (<https://www.aihw.gov.au>)

MAPPA (<https://mappa.com.au/>)

Public Health Information Development Unit, Torrens University Australia, Social Health Atlases of Australia (<https://phidu.torrens.edu.au/social-health-atlases/data>)

Australian Early Development Census (<https://www.aedc.gov.au/>)

## Acknowledgements

Thank you to staff from WACHS and other agencies who have contributed to the design and information presented in this profile.

For further information regarding this profile please contact the WACHS Planning and Evaluation Team ([Planning.WACHS@health.wa.gov.au](mailto:Planning.WACHS@health.wa.gov.au))

***Please note a later version of this profile including additional data will be available in early 2023.***