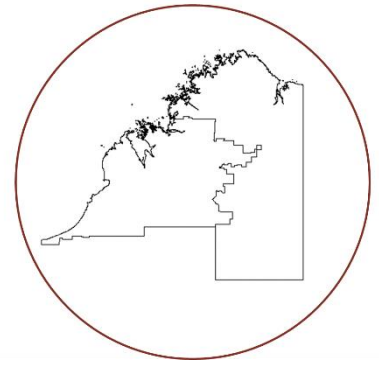




Government of **Western Australia**
WA Country Health Service

Our Vision

To be a global leader in rural and remote healthcare



Kimberley

Health Profile 2022



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

Kimberley Health Profile – Preliminary Version endorsed October 2022

Kimberley Health Profile 2022

To be used in combination with the local community directories, and WACHS place based care education documents.

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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 communities 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 remoteness, 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 Kimberley 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.



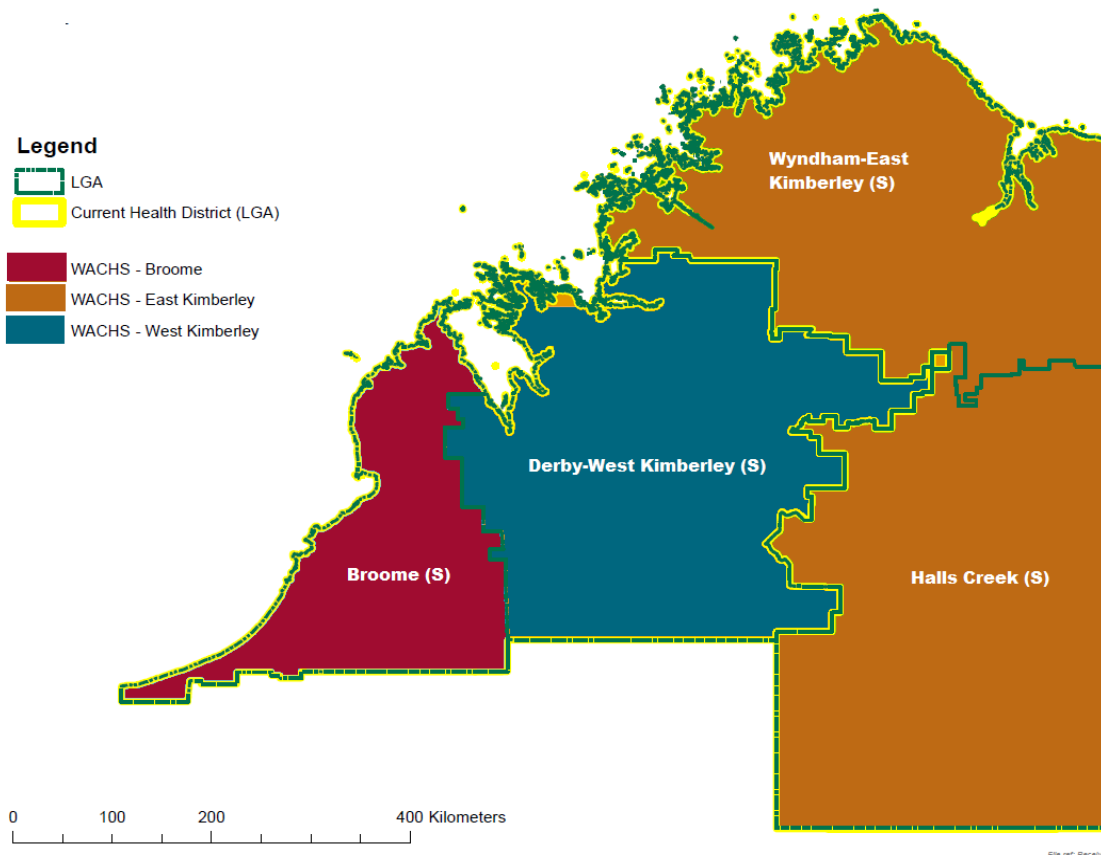
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Geography and services

- Operationally the Kimberley services are managed in three areas Broome, West Kimberley and East Kimberley but health data is organised into two geographic districts West and East Kimberley which are built from 4 Local Government Areas (LGAs).
- The Kimberley contains 1 Regional hospital in Broome and two District Hospitals in Derby and Kununurra, two Small Hospitals in Halls Creek and Fitzroy and 11 Remote Area Nursing Posts/Health Centres.
- Broome is 2,213 km by road from Perth. Kununurra is 3,205 km by road from Perth, 1042 km from Broome, but only 829 km by road from Darwin.

Kimberley Health Districts



Health district	Local Government Area (S) = Shire, (C) = City	Hospitals and Health Centres
Broome	Broome (S)	<ul style="list-style-type: none"> • Broome Regional Hospital
West Kimberley	Derby-West Kimberley (S)	<ul style="list-style-type: none"> • Derby District Hospital • Fitzroy Crossing Hospital
East Kimberley	Wyndham- East Kimberley (S)	<ul style="list-style-type: none"> • Kununurra District Hospital • Wyndham Hospital
	Halls Creek (S)	<ul style="list-style-type: none"> • Halls Creek Hospital

Some of the data in this profile cannot separate Broome from West Kimberley (as these have historically known as the combined West Kimberley district) and will be noted accordingly.

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Overview of regional service activity, by hospital, 2020-21

District	Hospital	Emergency Department presentations	Inpatient separations	Outpatient service events
Broome	Broome Hospital	25034	13562	43530
West Kimberley	Derby Hospital	13191	9388	6270
	Fitzroy Crossing Hospital	7823	3534	1211
East Kimberley	Halls Creek Hospital	6794	704	376
	Kununurra Hospital	13288	7473	17157
	Wyndham Hospital	3614	149	119
Kimberley Total		69744	34810	68663

Sources: WACHS Emergency Department Collection, WACHS Inpatient Collection (excludes boarders and unqualified newborns), WACHS Outpatient Appointment Collection (excludes Did Not Attends and Non-Client events). *Includes activity by both Kimberley and non-Kimberley residents.

Kimberley Hospital bed Numbers

District	Hospital	Bed Numbers
Broome	Broome Hospital	69
West Kimberley	Derby Hospital	40
	Fitzroy Crossing Hospital	12
East Kimberley	Halls Creek Hospital	8
	Kununurra Hospital	34
Kimberley Total		163

Includes neonatal cots

Wyndham Hospital inpatient beds are not currently operational

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.



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Population

- At 30 June 2020, the Estimated Resident Population of the Kimberley was 36,054.
- Across the Kimberley, 49% of the population identified as Aboriginal, significantly higher than the overall WACHS average of 11% and the WA State average of 3%.
- The percentage of Aboriginal people varied between the four LGA areas from 35% in Broome through to 82% of the population the Halls Creek LGA.
- 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
West Kimberley	Broome (S)	5997	10997	16994	35%
	Derby-West Kimberley	5866	2345	8211	71%
West Kimberley Total		11863	13342	25205	47%
East Kimberley	Halls Creek	2865	630	3495	82%
	Wyndham-East Kimberley	2985	4369	7354	41%
East Kimberley Total		5850	4999	10849	54%
Kimberley Total		17713	18341	36054	49%

Using operational boundaries.

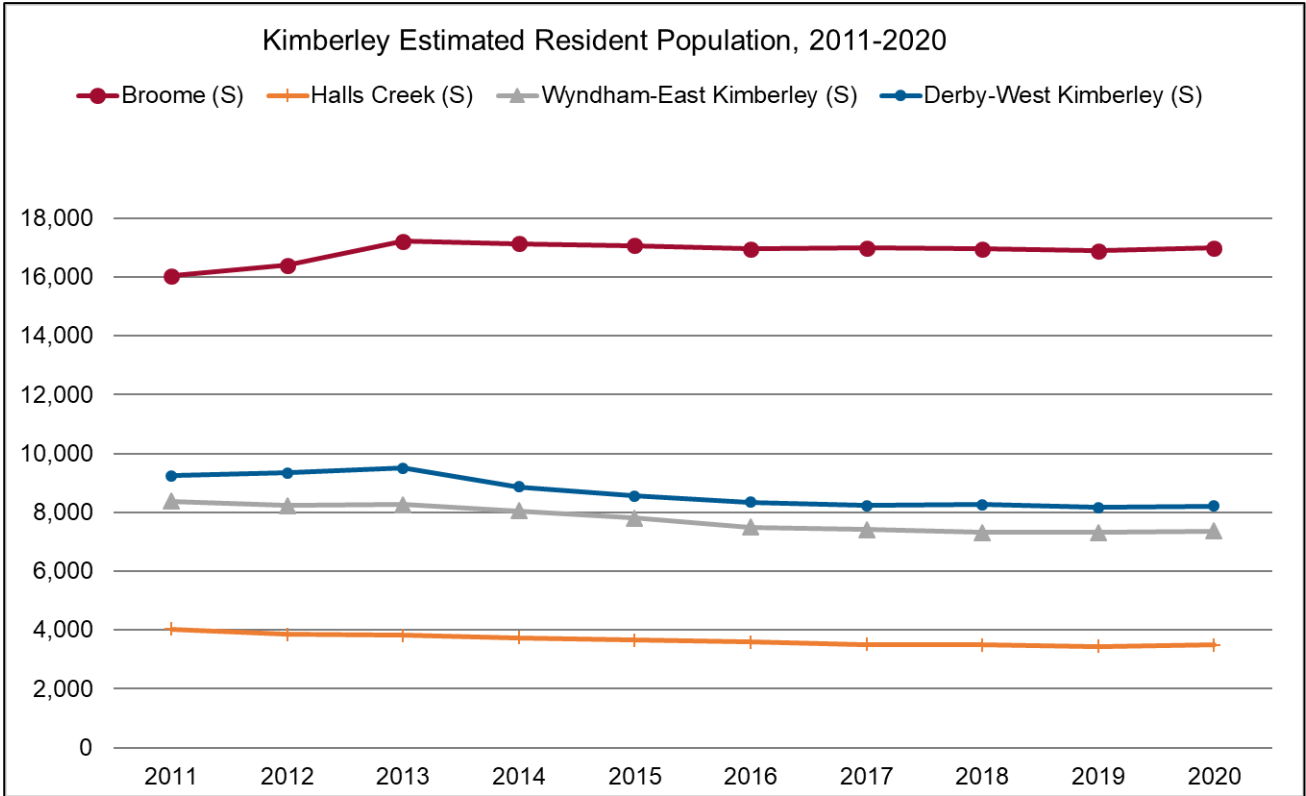
Source: ABS Estimated Resident Population, 2020. Aboriginal proportions from 2016 Census data applied to 2020 populations. Census data will start becoming available July 2022

Age distribution

- In 2020, the Kimberley had a younger age profile than the WACHS overall with 25% of the population aged under 15 years of age, compared to 20% for WACHS.
- In contrast the region a much lower percentage of people aged 65 years and older, 7% compared to 16% for WACHS overall
- This pattern reflects the overall younger age profile, and lower life expectancy experience by the Aboriginal population.

Historical population growth

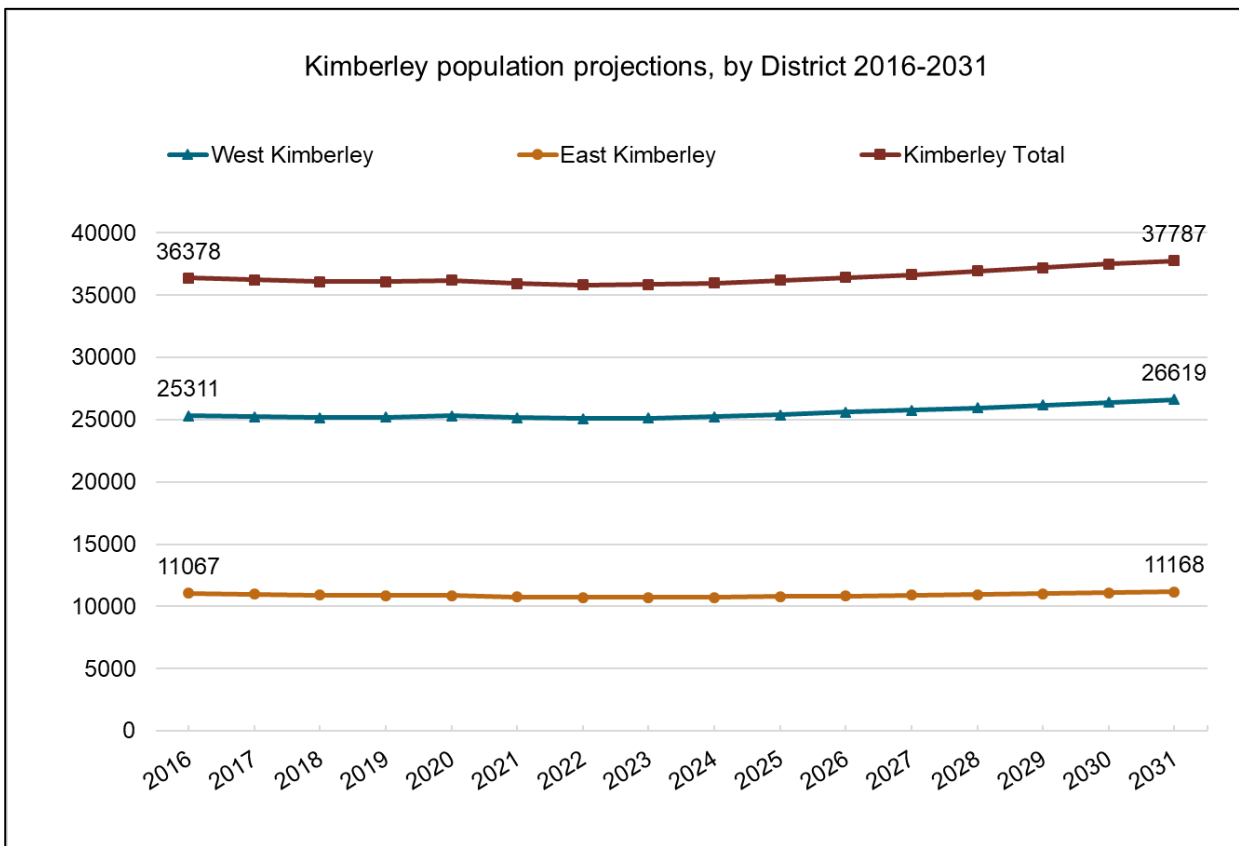
- Between 2011 and 2020, the population of the Kimberley remained stable (from 37,673 to 36,054). Population in the region peaked at 38,802 in 2013



Source: ABS Estimated Resident Population, 2020.

Projected population growth

- Between 2016 and 2031, the population of the Kimberley is estimated to increase by 4%, to 37,787.
- The East Kimberley district is estimated to increase by 1% while the West Kimberley is estimated to increase by 5% between 2016 and 2031.
- Updated populations from the 2021 Census, which will aid with rebasing population projections, are expected to be released between mid-2022 and early 2023.



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

Key Kimberley demographic, social and economic facts

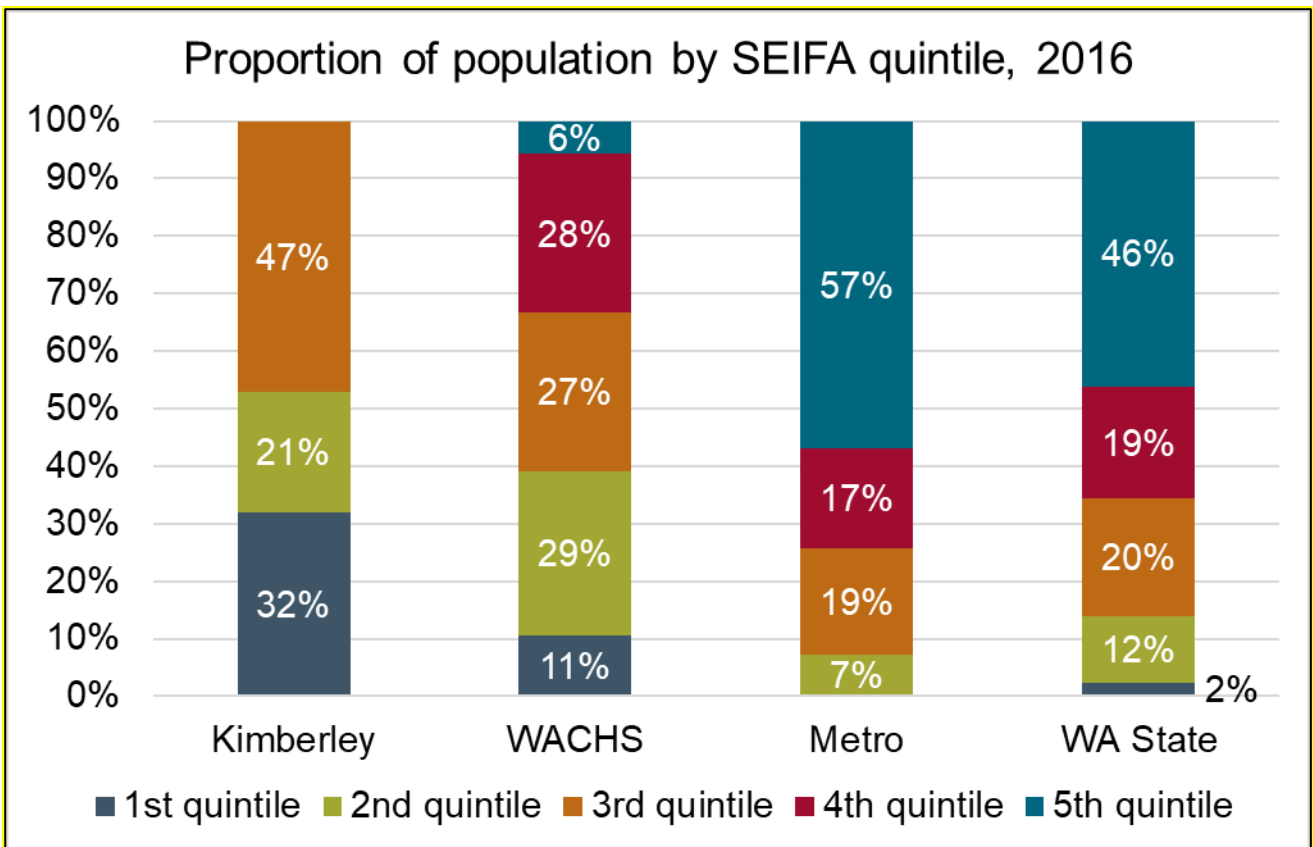
Local Government	Born overseas	People who don't speak English at home	Left school aged less than 15 years old	Persons with tertiary qualification	Families with annual income less than \$20,800	Unemployment rate
Broome	14.9%	11.6%	6.8%	17%	3.8%	6.5%
Derby- west Kimberley	8%	39.4%	13.8%	9.9%	9.7%	14.2%
Wyndham-East Kimberley	13.1%	11.8%	11.2%	14.2%	4.1%	6.8%
Halls Creek	5.8%	35.1%	19.6%	7.6%	14%	18.5%
Kimberley	12.1%	20.1%	10.5%	14%	6%	8.6%
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 geographic boundaries.

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 Kimberley 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, and significantly no areas of relative advantage.



**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 Kimberley, that 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 Kimberley injury (including suicide, self-inflicted and motor vehicle occupant injuries) is the leading cause of burden of disease (17.8% of total burden) for the community followed by mental health issues (15.1%), cancer (13.6%), cardiovascular (12.9%) and musculoskeletal diseases (7.4%).

Road traffic injuries – motor vehicle occupants (8.7% of disability adjusted life years), coronary heart disease (8.5%) and type 2 diabetes (7.4%) are the highest burdens for Kimberley women whereas suicide/self-inflicted injuries (10.6%), alcohol use disorders (9.5%) and coronary heart disease (8.2%) are highest for Kimberley men.

For Kimberley residents aged 15-44, the largest burdens of disease were from injury (including suicide, self-inflicted and motor vehicle occupant injuries) and alcohol use disorders, while for those aged 45 years and over the largest burden was from coronary heart disease, chronic kidney diseases, COPD and type 2 diabetes.

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

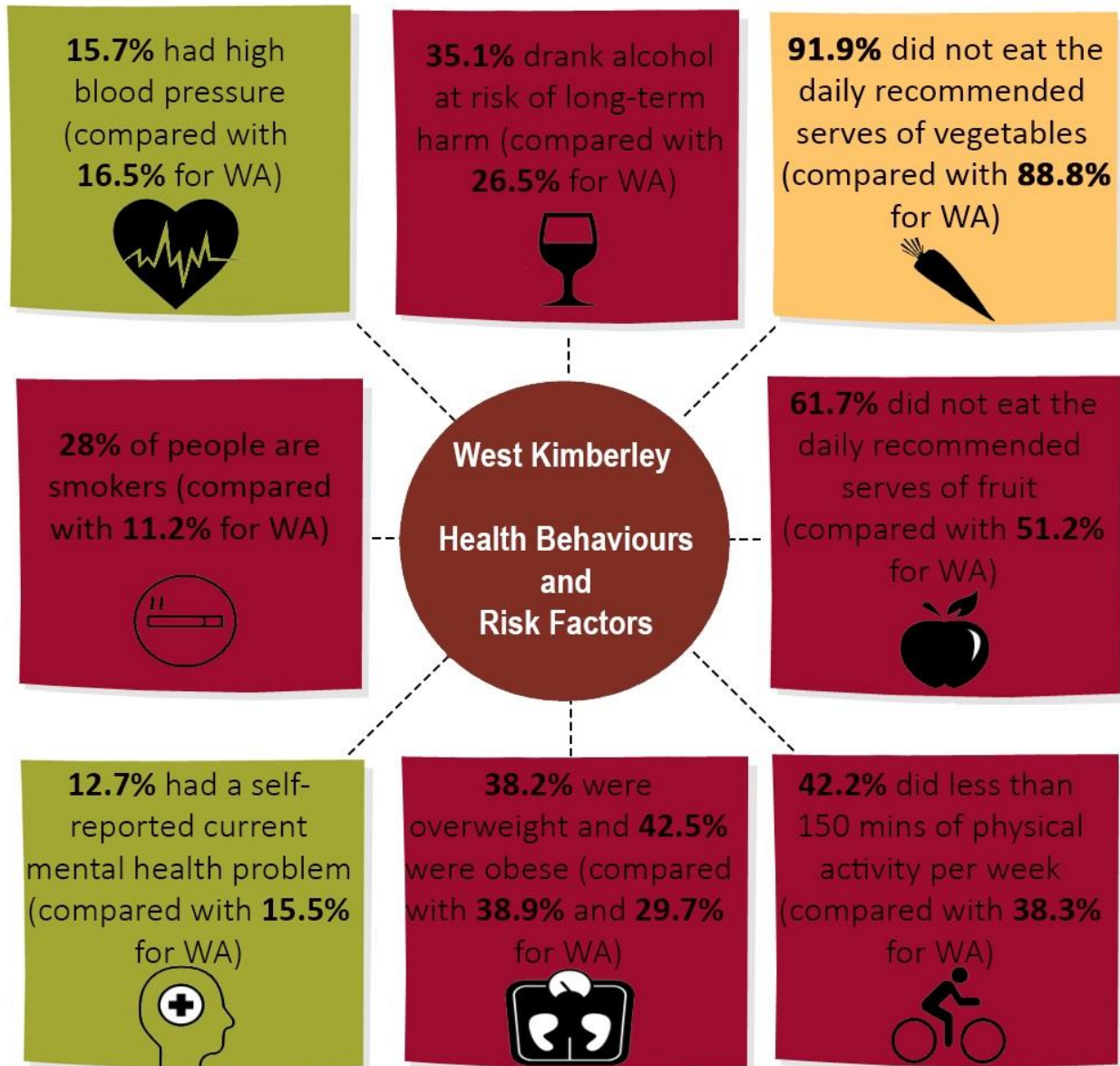
https://ww2.health.wa.gov.au/~/_/media/Corp/Documents/Reports-and-publications/WA-Burden-of-Disease-Study-2015-Summary-report/WA-Burden-of-Disease-Health-Region-report.pdf

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West Kimberley health risk factors

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



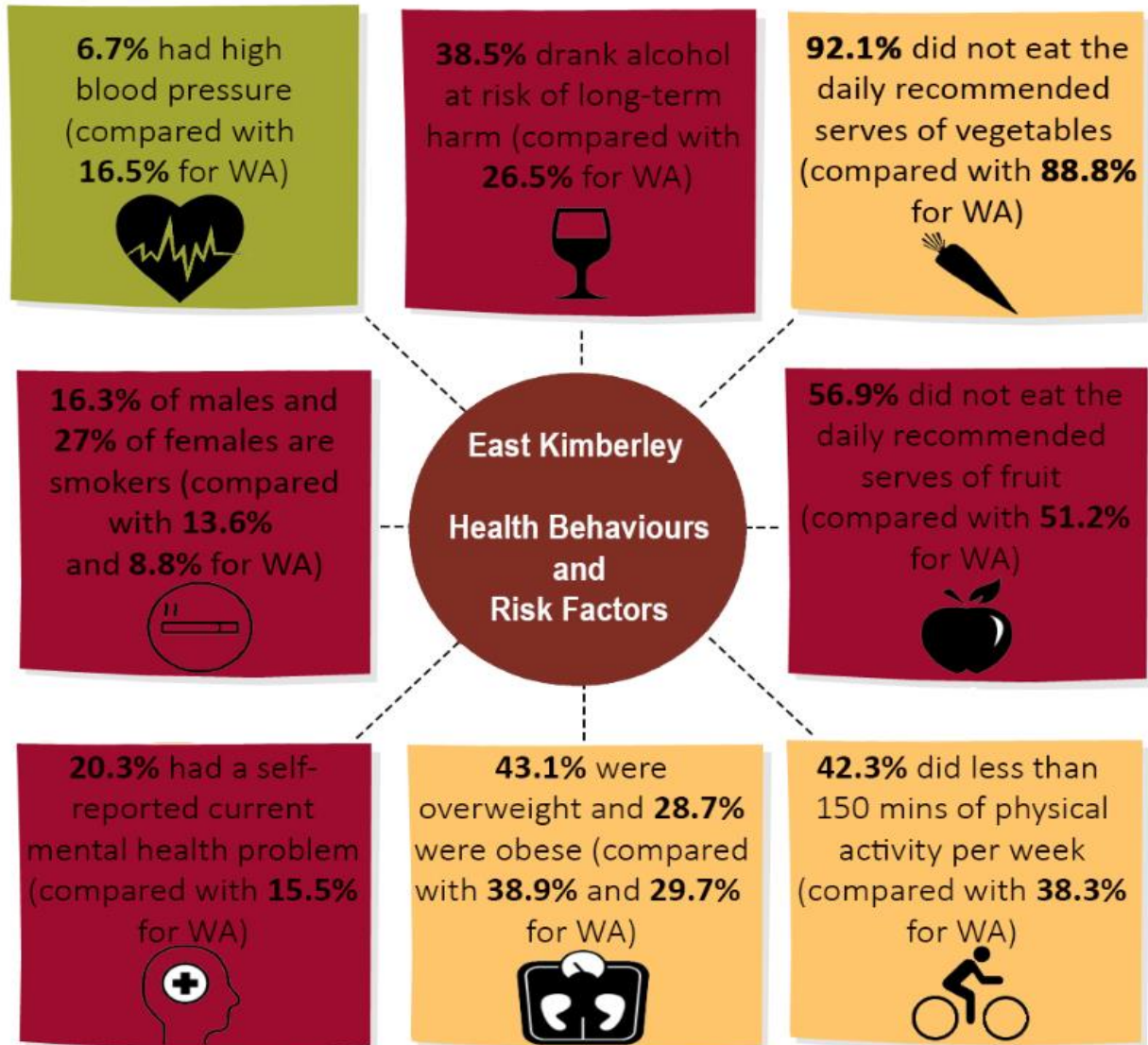
Adults aged 16+, 2015-2019.

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

Note: Colour coding reflects where a District rate is significantly different (red higher, green lower, amber similar) than the State rate. The State rate may still be at a level of concern.

East Kimberley health risk factors

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



Adults aged 16+, 2015-2019.

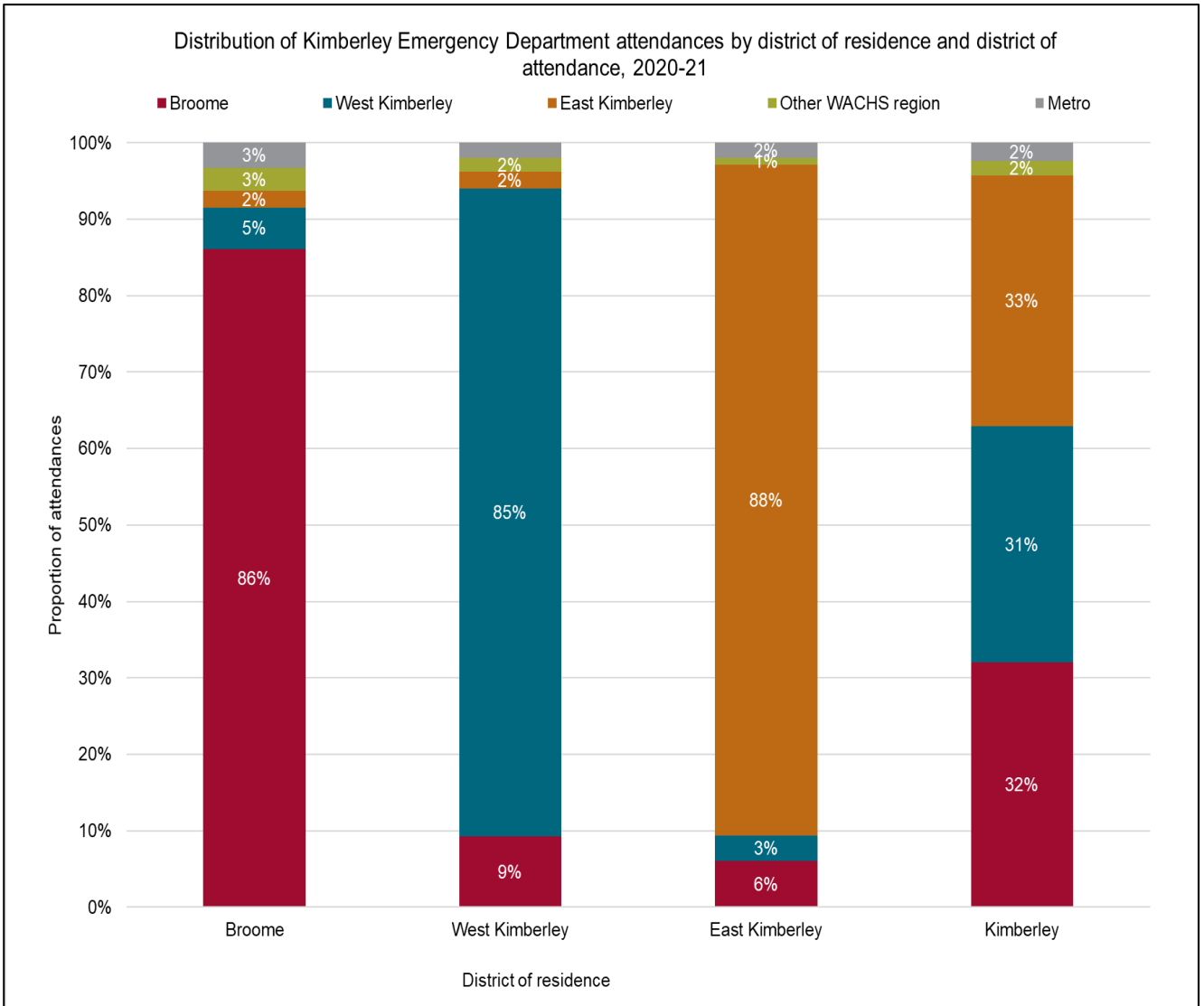
Source: Health and Wellbeing Surveillance System, Epidemiology Branch, Department of Health

Note: Colour coding reflects where a District rate is significantly different (red higher, green lower, amber similar) than the State rate. The State rate may still be at a level of concern.

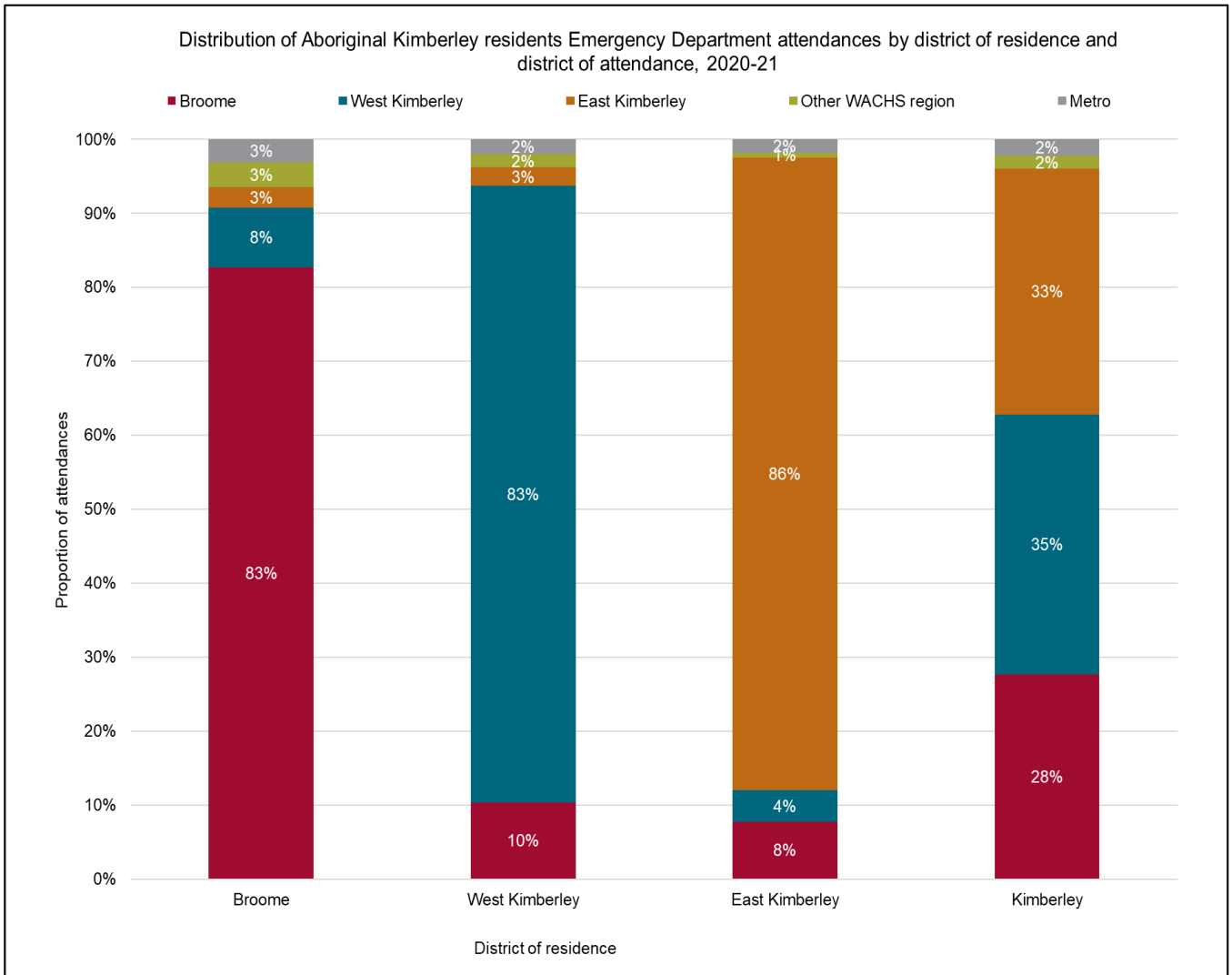
Emergency Department

Kimberley summary

- Of the 65,373 emergency department (ED) attendances by Kimberley residents in 2020-21, 96% occurred at Kimberley hospitals, 2% in other WACHS regions and 2% at Perth metropolitan hospitals.
- East Kimberley district residents had the highest proportion of ED attendances at a hospital in their own district (20,563 attendances or 88%), followed by Broome District (17,537 attendances or 86%) and West Kimberley (18,282 attendances or 85%).



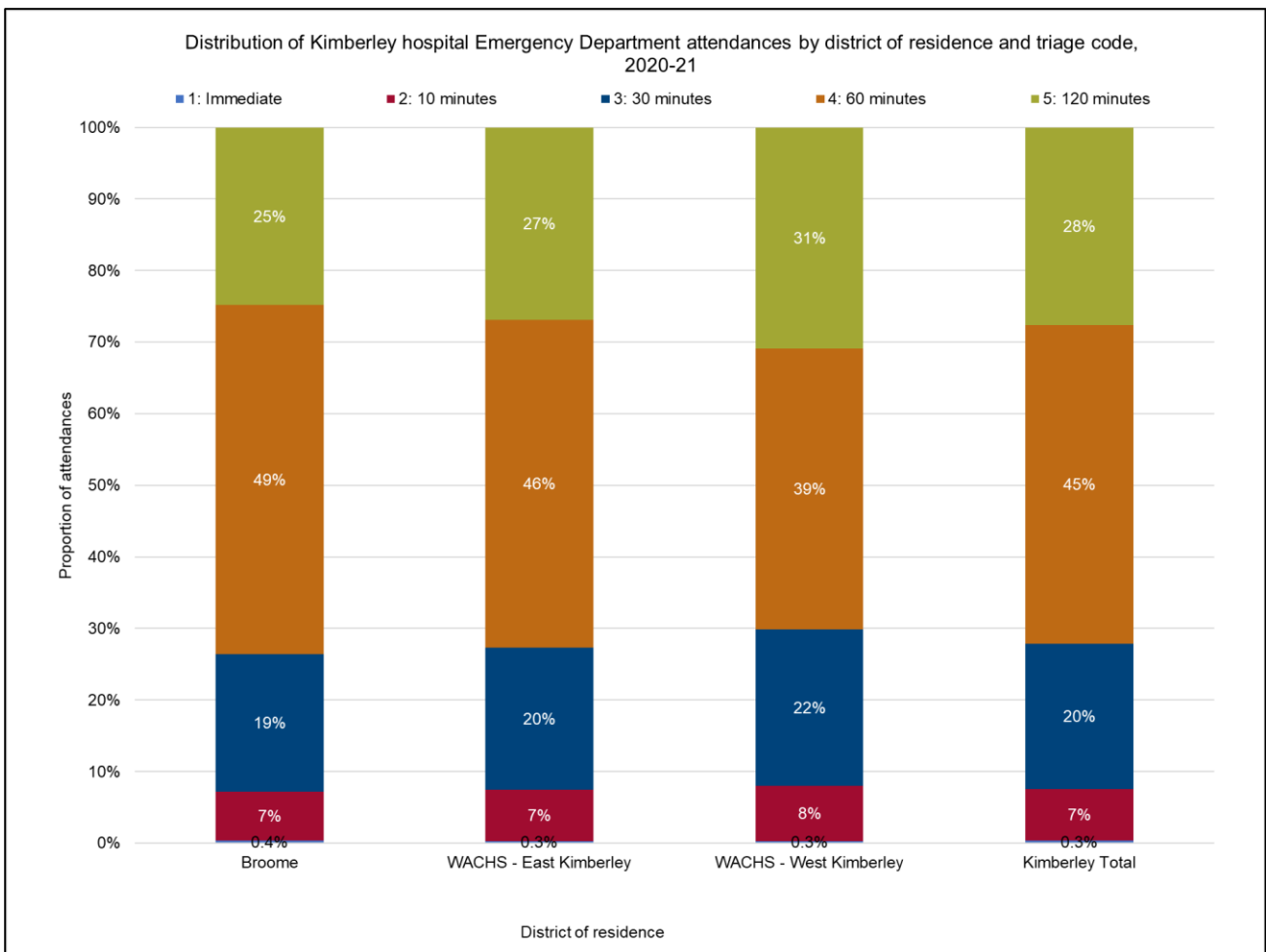
- For Aboriginal Kimberley residents, of their 45,221 attendances in 2020-21, 96% attended a Kimberley hospital, 2% in other WACHS regions and 2% at Perth metropolitan hospitals.
- Similar to the overall Kimberley population, the Aboriginal population in the East Kimberley had the highest proportion of ED attendances at a hospital in their own district (14,259 attendances or 86%), followed by Broome District (9,432 attendances or 83%) and West Kimberley (14,292 attendances or 83%).



Using operational boundaries. Source: Emergency Department Collection, WACHS Business Intelligence and Emergency Department Data Collection (for metro information), DoH

Emergency attendances for Kimberley residents, by triage, 2020-21

- The triage profile of emergency department attendances by Kimberley residents in 2020-21 was similar across the districts, an average of 72% of attendances of triage level 4 or 5.
- Attendances with a triage of 3 made up one in five attendances on average, while 7.5% of attendances to Kimberley hospitals were triaged as level 1 or 2.



Using operational boundaries.

Source: Emergency Department Collection, WACHS Business Intelligence and Emergency Department Data Collection (for metro information), DoH

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

- For Kimberley residents who attended a hospital emergency department in their region in 2020-21 (59,342 attendances), 1% were provided by the Emergency Telehealth Service (ETS).
- Of all Kimberley emergency department attendances by Kimberley residents in 2020-21, 63% occurred between the hours of 8am and 5pm, 18% were between 5pm and 9pm, and 19% were between 9pm and 8am.
- Of the Kimberley residents who attended a Kimberley emergency department in 2020-21, 76% (45,386) were discharged home, 13% (7,974) were admitted to that hospital, 8% did not wait (4474) and 1% (770) were transferred to another hospital.
- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Kimberley emergency department attendances by Kimberley residents in 2020-21 were Factors influencing health status and other contacts with health services (16%) and Diseases and disorders of the skin, subcutaneous tissue and breast (12%). The most common MDCs that led to a transfer to a metropolitan hospital were Diseases and disorder of the circulatory system (19% of metro transfers) and Diseases and Disorders of the nervous system (16% of metro transfers).

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

Major Diagnostic Category	Attendances	% of total
Factors influencing health status and other contacts with health services	9573	16%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	7384	12%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	6871	12%
Diseases and disorders of the musculoskeletal system and connective tissue	6461	11%
Injuries, Poisonings and Toxic Effects of Drugs	5198	9%

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

Major Diagnostic Category	Attendances	% of metro transfers
Diseases and Disorders of the Circulatory System	46	19%
Diseases and Disorders of the Nervous System	37	16%
Diseases and disorders of the musculoskeletal system and connective tissue	33	14%
Diseases and disorders of the respiratory system	24	10%
Injuries, Poisonings and Toxic Effects of Drugs	24	10%

*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 operational boundaries. Source: Emergency Department Collection, WACHS Business Intelligence

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

- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Aboriginal emergency department attendances by Aboriginal Kimberley residents in 2020-21 were Factors influencing health status and other contacts with health services (16%) and Diseases and disorders of the skin, subcutaneous tissue and breast (13%). For non-Aboriginal residents, the most common MDCs were Factors influencing health status and other contacts with health services (16%) and Diseases and disorders of the skin, subcutaneous tissue and breast (14%).

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

Major Diagnostic Category	Attendances	% of total
Factors influencing health status and other contacts with health services	6664	16%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	5295	13%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	4753	11%
Diseases and disorders of the musculoskeletal system and connective tissue	3993	10%
Injuries, Poisonings and Toxic Effects of Drugs	3646	9%

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

Major Diagnostic Category	Attendances	% of total
Factors influencing health status and other contacts with health services	2886	16%
Diseases and disorders of the musculoskeletal system and connective tissue	2451	14%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	2095	12%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	2078	12%
Injuries, Poisonings and Toxic Effects of Drugs	1534	9%

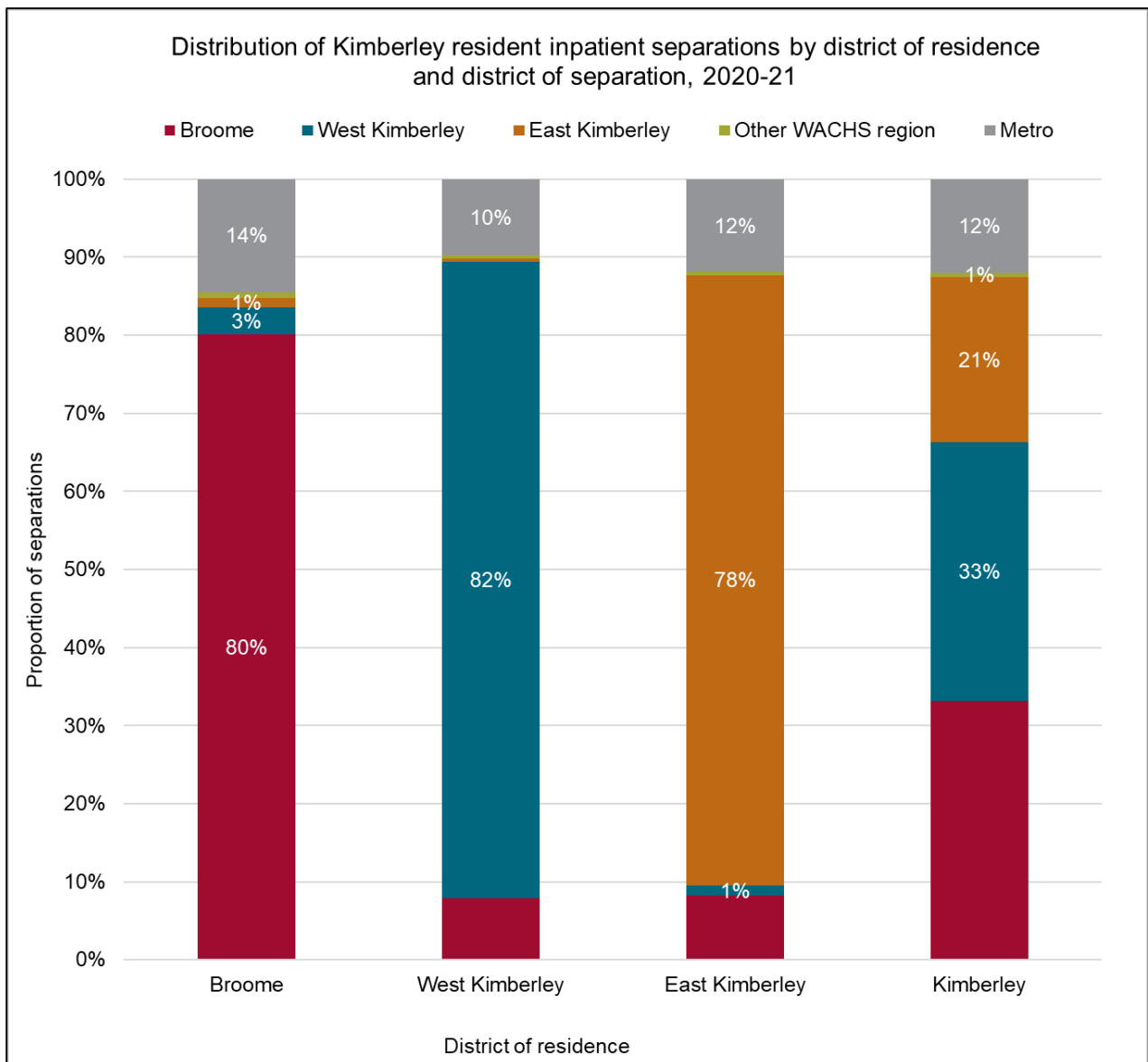
Using operational boundaries. Excludes attendances where Aboriginality status was unknown or not stated.

Source: Emergency Department Collection, WACHS Business Intelligence

Hospitalisations

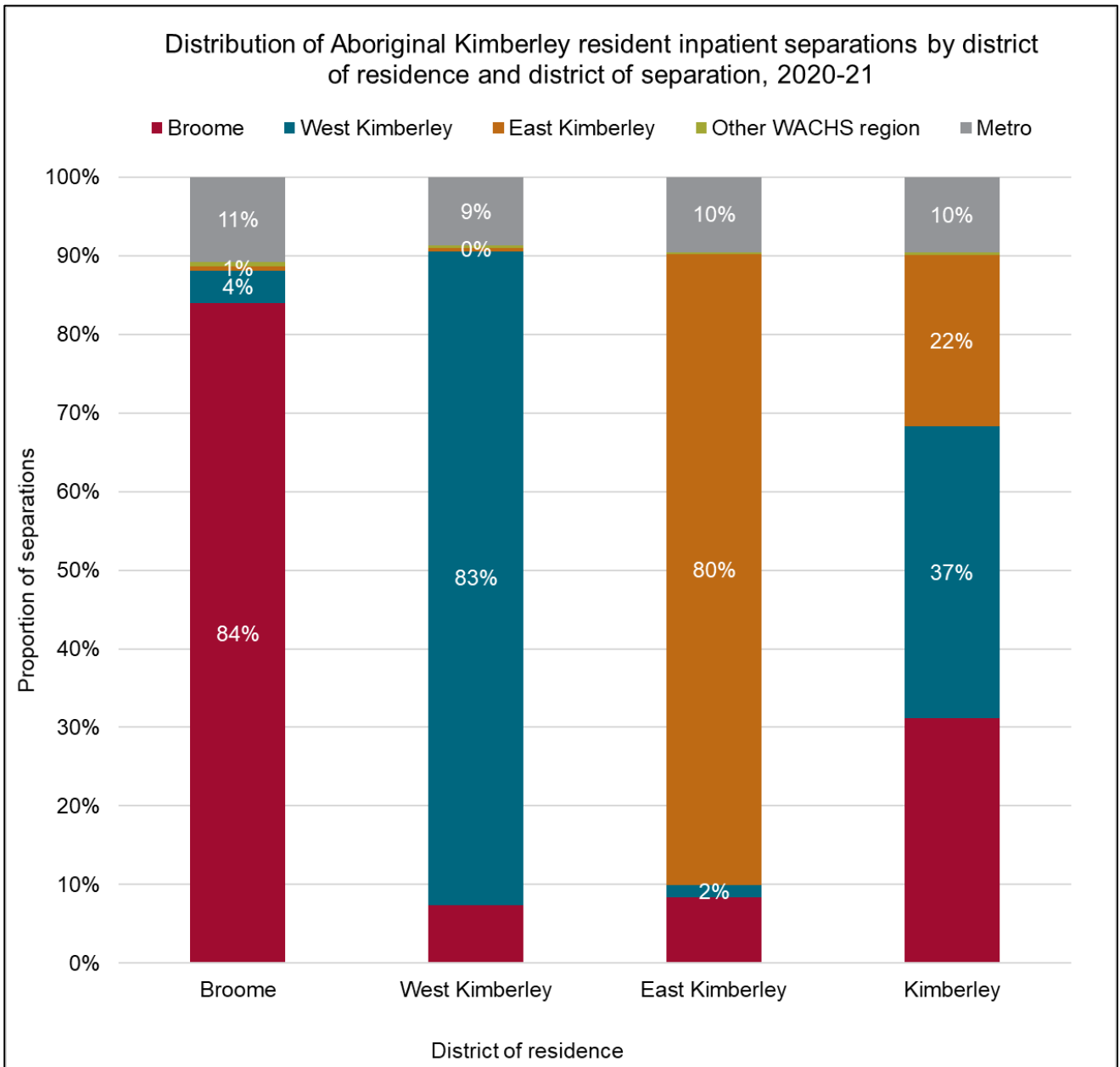
Kimberley summary

- Of the 38,077 inpatient separations by Kimberley residents across WA in 2020-21, 88% occurred in Kimberley hospitals (including 33% at Broome Hospital), while 12% occurred in a Perth metropolitan hospital.
- Residents of West Kimberley had the highest proportion of separations occurring at a hospital in their own district (82%) followed by Broome district residents (80%) and East Kimberley residents (78%). Broome district had the highest proportion of residents who had an inpatient separation from a metropolitan hospital (14%).



Using operational boundaries. Source: Hospital Morbidity Data Collection, DoH. Excludes boarders and unqualified newborns.

- For Aboriginal residents, of their 32,621 inpatient separations in 2020-21, 90% attended a Kimberley hospital while 10% occurred in a Perth metropolitan hospital.



Using operational boundaries. Source: Hospital Morbidity Data Collection, DoH. Excludes boarders and unqualified newborns.

Inpatient separations for Kimberley residents, key characteristics, 2020-21

- The most common Enhanced Service Related Group (ESRG) for the 38,077 hospital separations (across all hospitals) by Kimberley residents in 2020-21 was Renal Dialysis (23,004, 58% of separations)
- For Aboriginal residents, renal dialysis made up 67% of their 2,200 inpatient separations in 2020-21

Kimberley	Separations	% of all separations
042, Renal Dialysis	22004	58%
028, Cellulitis	633	2%
098, Injuries - Non-surgical	620	2%
045, Respiratory Infections/Inflammations	457	1%
031, Chemotherapy	453	1%
053, Other Non Subspecialty Medicine	445	1%
049, Other Respiratory Medicine	400	1%
114, Vaginal Delivery	389	1%
022, Colonoscopy	352	1%
113, Ante-natal Admission	350	1%
016, Other Endocrinology	330	1%
029, Septicaemia, HIV, Viral and Other Infectious Diseases	327	1%

Inpatient separations, Aboriginal Kimberley residents, by top ESRGs, 2020-21

Kimberley	Separations	% of all separations
042, Renal Dialysis	21708	67%
028, Cellulitis	539	2%
098, Injuries - Non-surgical	532	2%
045, Respiratory Infections/Inflammations	412	1%
049, Other Respiratory Medicine	344	1%
053, Other Non Subspecialty Medicine	342	1%
127, Unallocated	305	1%
113, Ante-natal Admission	273	1%
029, Septicaemia, HIV, Viral and Other Infectious Diseases	257	1%
016, Other Endocrinology	249	1%
122, Drug & Alcohol	247	1%
080, Injuries to limbs - Medical	236	1%

Using operational boundaries.

Source: Hospital Morbidity Data Collection, Department of Health.

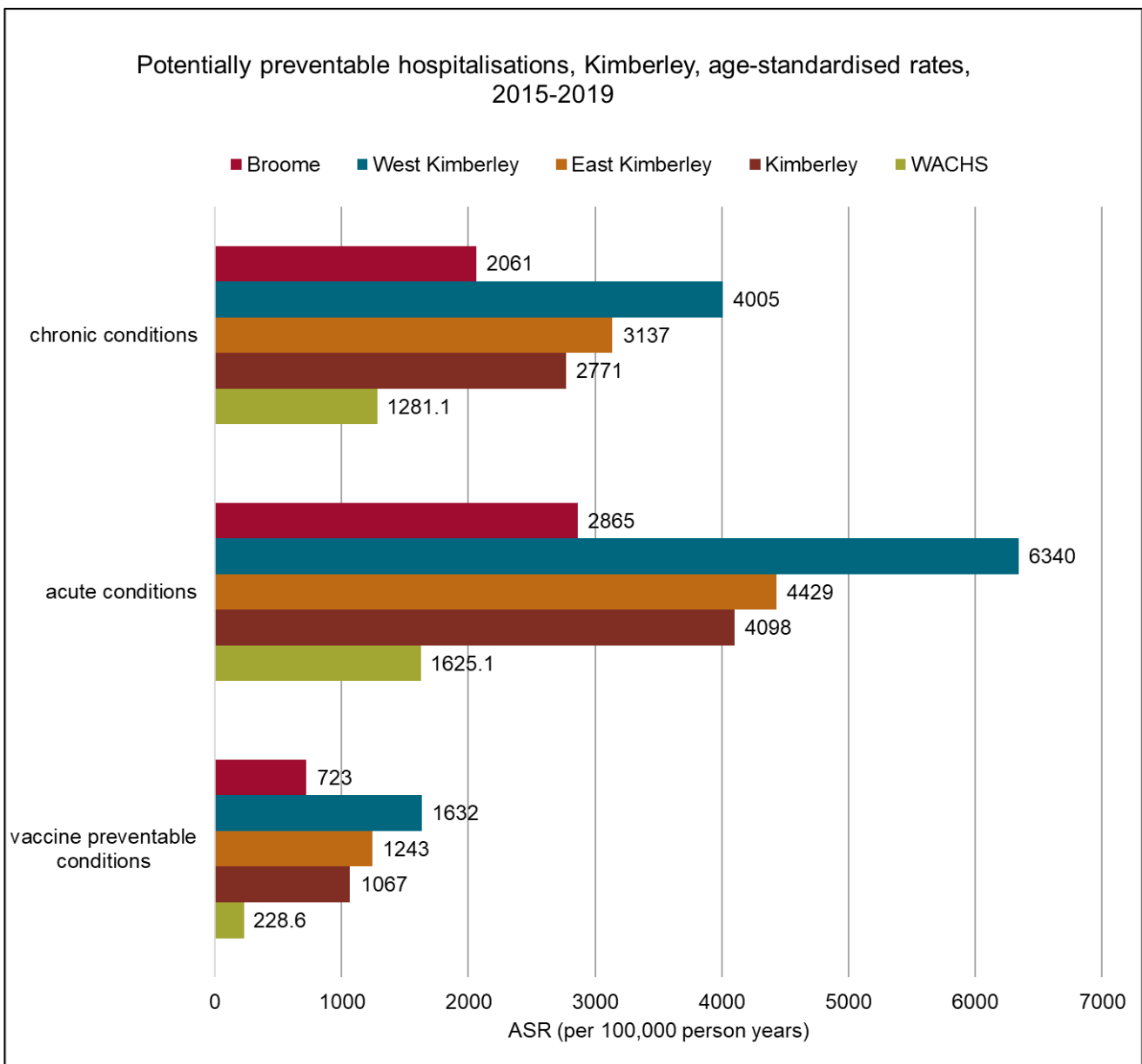
*Separations are a count of activity, not of unique client counts. Some ESRGs such as chemotherapy and renal dialysis are more likely than others to include clients who have had multiple separations over the reference period.

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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 management¹.
- For the period 2015-2019, the rate of PPHs for Kimberley residents were highly than the WACHS average across all three conditions (vaccine-preventable, acute and chronic).
- While all Kimberley PPH's are high, PPHs for chronic conditions and acute conditions are particularly high for the West Kimberley residents.

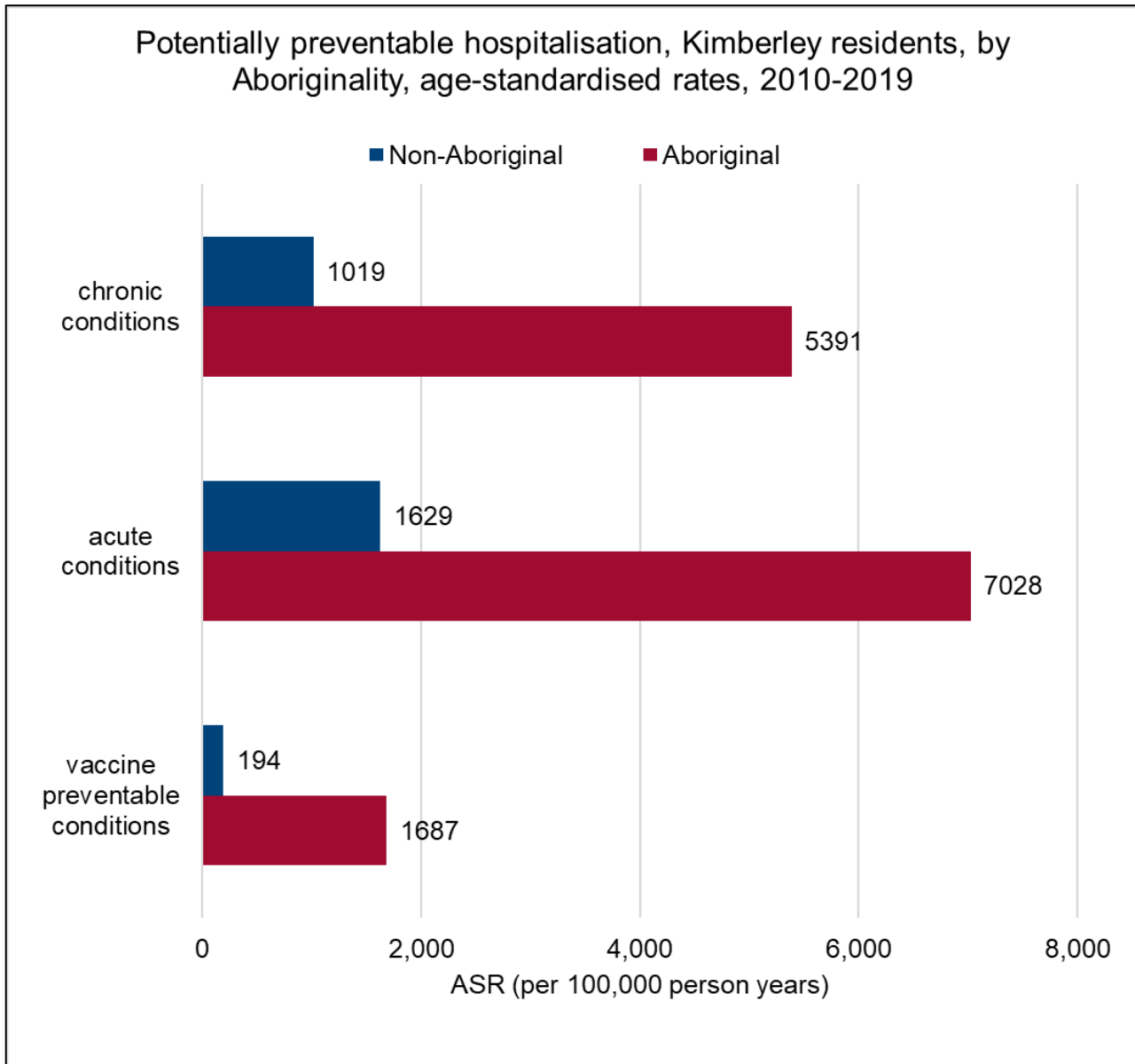


Using geographic boundaries. Source: Health Tracks, DoH

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- 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 5.3 times higher, for acute conditions the rate was 4.3 times higher and for vaccine-preventable conditions the rate was 8.7 times higher.



Kimberley leading conditions for potentially preventable hospitalisations, 2015-2019

- The leading cause of PPHs for Kimberley residents for 2015-2019 was cellulitis (18.1% of cases), urinary tract infections (8.5 %), ENT infections (8.4%), dental conditions (7.9%), chronic obstructive pulmonary disease (COPD) (6.9%).

Condition	Type	Number	% of all cases	SRR (comparison with State average)
Cellulitis	acute	2,346	18.1%	6.95
Urinary tract infections	acute	1,107	8.5%	2.89
ENT infections	acute	1,092	8.4%	3.39
Dental conditions	acute	1,025	7.9%	1.44
Chronic obstructive pulmonary disease	chronic	892	6.9%	4.02
Convulsions and epilepsy	acute	743	5.7%	3.19
Diabetes complications	chronic	705	5.4%	2.73
Pneumonia and influenza (vaccine-preventable)	vaccine preventable	615	4.7%	4.93
Gangrene	acute	598	4.6%	6.62
Congestive cardiac failure	chronic	590	4.6%	3.49

Source: HealthTracks, DoH.

Top 5 PPHs by Kimberley district, 2015-2019

		1st	2nd	3rd	4th	5th	Total
Broome	Condition	Cellulitis	Dental conditions	Iron deficiency anaemia	Urinary tract infections	Convulsions and epilepsy	
	No.	676	501	351	346	262	3812
	SRR	4.23	1.51	3.06	1.92	2.43	
West Kimberley	Condition	Cellulitis	ENT infections	Urinary tract infections	Diabetes complications	Dental conditions	
	No.	794	446	412	306	305	3870
	SRR	10.43	5.77	4.72	5.38	1.85	
East Kimberley	Condition	Cellulitis	ENT infections	Chronic obstructive pulmonary disease	Urinary tract infections	Diabetes complications	
	No.	876	409	383	349	234	3802
	SRR	8.63	4.13	5.84	3.02	3	

Using geographic boundaries. Source: HealthTracks, DoH

Top 5 PPHs for non-Aboriginal Kimberley residents, 2015-2019

- For the period 2015-2019, among non-Aboriginal Kimberley residents the top PPHs were Cellulitis (453 PPHs, 21% of total PPHs for non-Aboriginal people), which occurred at more than 3 times the non-Aboriginal State rate, followed by dental conditions (347, PPHs, 16%).

		1st	2nd	3rd	4th	5th	Total
Non-Aboriginal	Condition	Cellulitis	Dental conditions	Urinary tract infections	ENT infections	Iron deficiency anaemia	
	No.	453	347	183	170	157	2,138
	SRR	3.02	1.07	0.97	1.38	1.18	

Top 5 PPHs for Aboriginal Kimberley residents, 2010-2019

- For the period 2010-2019, the highest occurring PPH condition for Aboriginal Kimberley residents was Cellulitis (3536 PPHs, 17.5% of total PPHs for Aboriginal people) followed by ENT infections (2161, PPHs, 11%), which both occurred at more than twice the State Aboriginal rate.

		1st	2nd	3rd	4th	5th	Total
Aboriginal	Condition	Cellulitis	ENT infections	Urinary tract infections	Convulsions and epilepsy	Dental conditions	
	No.	3,536	2,161	1,826	1,544	1,307	18,231
	SRR	2.08	2.14	1.6	1.36	1.39	1.6

Source: HealthTracks, DoH.

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 Kimberley residents was (SRR = 3.61) almost four times higher than the State rate (SRR = 0.82).
- The rates for most categories was higher than the State rate except for Zoonotic diseases

Condition	Notifications	SRR
Blood-borne diseases	136	1.08
Enteric infections	1,082	2.43
Sexually transmitted infections	5,659	5.07
Vector-borne diseases	354	3.52
Vaccine-preventable diseases	2,207	2.68
Zoonotic diseases	N/A	N/A
Other notifiable diseases	57	3.52
All notifications	9,496	3.61

SRR = The standardised rate ratio is the ratio between a health region (or district) and the State. A ratio 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

Kimberley leading communicable disease notifications, 2014-2018

- The leading cause of communicable disease notifications for 2014-2018 for Kimberley residents was chlamydia (genital) (33% of cases), Gonorrhoea (24%) and influenza (13% of cases). Chlamydia was the leading cause across all districts.

Condition	Type	Notifications	SRR
Chlamydia (genital)	Sexually transmitted infections	3159	3.65
Gonorrhoea	Sexually transmitted infections	2296	10.3
Influenza	Vaccine-preventable diseases	1223	2.88
Salmonellosis	Vector-borne diseases	453	3.15
Mumps	Vaccine-preventable diseases	445	28.08
Ross River virus	Vector-borne diseases	286	4.42
Varicella (shingles)	Vaccine-preventable diseases	244	2.25
Syphilis - Infectious	Vaccine-preventable diseases	195	9.62
Campylobacteriosis	Enteric	187	0.83
Shigellosis	Enteric	154	13.53

Source: HealthTracks, DoH

Top 5 communicable disease notifications by Kimberley district, 2014-2018

		1st	2nd	3rd	4th	5th	Total
(Broome and) West Kimberley	Condition	Chlamydia (genital)	Gonorrhoea	Influenza	Salmonellosis	Ross River virus	
	No.	2117	1300	920	227	226	5899
	SRR	0.347	0.213	0.151	0.037	0.037	
East Kimberley	Condition	Chlamydia (genital)	Gonorrhoea	Influenza	Salmonellosis	Mumps	
	No.	1042	996	303	226	223	2268
	SRR	0.307	0.293	0.089	0.066	0.066	

Top 5 Communicable disease notifications, non-Aboriginal Kimberley residents, 2014-2018

- For the period 2014-2018, Chlamydia (genital) and influenza were the top 2 conditions for notifications for non-Aboriginal residents (505, 24% and 465, 22% respectively). All the top 5 conditions occurred at rates significantly higher than the State non-Aboriginal rate.

		1st	2nd	3rd	4th	5th	Total
Non- Aboriginal	Condition	Chlamydia (genital)	Influenza	Ross River virus	Salmonellosis	Varicella (shingles)	
	No.	505	465	239	207	133	2,037
	SRR	1.54	2.37	7.18	3.18	2.22	

Top 5 Communicable disease notifications, Aboriginal Kimberley residents, 2009-2018

- For the period 2009-2018, the highest number of communicable disease notifications for Aboriginal Kimberley residents was for Chlamydia (genital) (5,149 notifications, 37% of total notifications for Aboriginal people) followed by Gonorrhoea (4735 notifications, 34%). All top 5 conditions occurred at rates higher than the State Aboriginal rate.

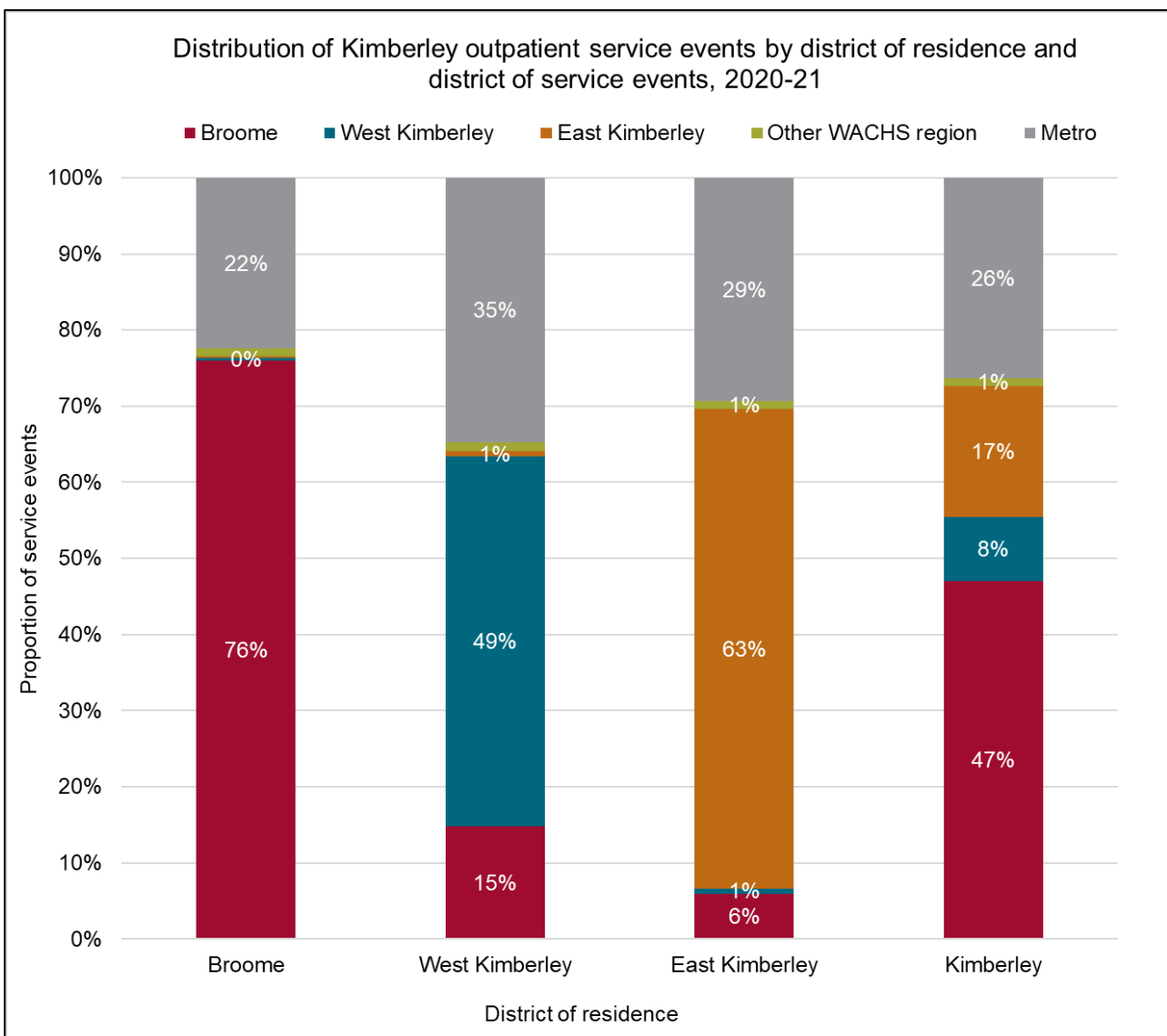
		1st	2nd	3rd	4th	5th	Total
Aboriginal	Condition	Chlamydia (genital)	Gonorrhoea	Influenza	Salmonellosis	Mumps	
		5,149	4,735	1,182	452	402	
	No.	36.90%	33.90%	8.50%	3.20%	2.90%	13645
	SRR	1.89	2.61	1.97	2.7	2.76	

Source: HealthTracks, DoH.

Outpatient

Kimberley summary

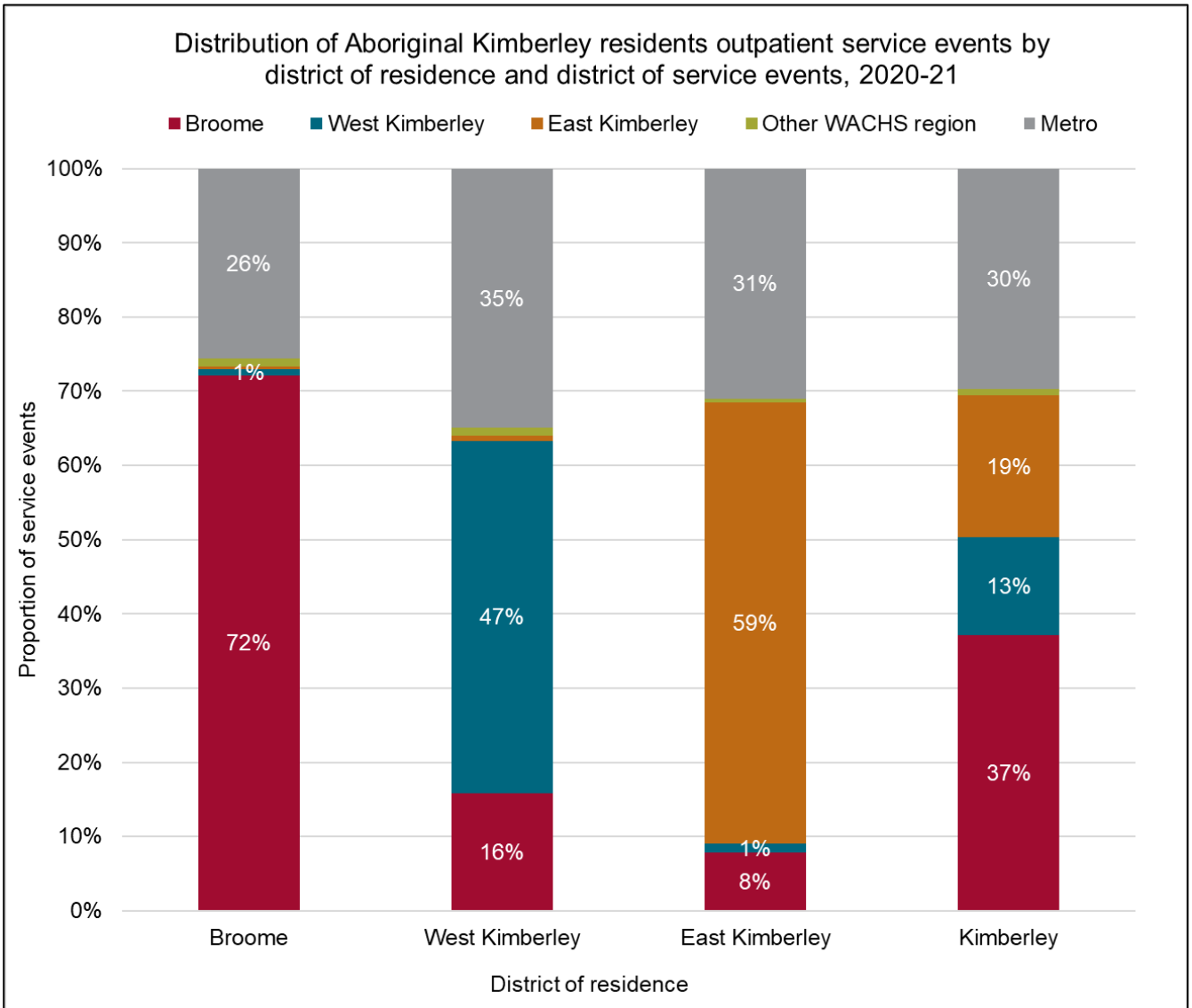
- Of the 68,725 outpatient service events for Kimberley residents across WA in 2020-21, 26% (18,104) occurred at Perth metropolitan hospitals, with 73% occurring within a Kimberley hospital
- In 2020-21 the overall proportion of appointments for Kimberley residents that were delivered by telephone/telehealth was 19% (13,155) (12% for Kimberley hospitals and 39% for metro hospitals). This overall proportion of telephone/telehealth appointments ranged from 18% for both East and West Kimberley residents to 20% for Broome district residents.



Using operational boundaries.

Source: Non-admitted Data Collection, DoH

- For Aboriginal residents, of their 28,738 outpatient service events in 2020-21, 69% attended a Kimberley hospital while 30% occurred in a Perth metropolitan hospital.
- Aboriginal residents of Broome had 72% of their outpatient activity within Broome hospital.
- Aboriginal residents of West Kimberley had 47% of their activity within the West Kimberley and 64% within any Kimberley hospital
- Aboriginal residents of East Kimberley had 59% of their activity within the East Kimberley and 68% within any Kimberley hospital



Using operational boundaries.

Source: Non-admitted Data Collection, DoH

Outpatient activity for Kimberley residents, key characteristics

- For Kimberley residents in 2020-21, the most common Tier 2 Medical code was 20.07 General Surgery (4% of total service events) and 20.02 Anaesthetics (4%), while the top Nursing codes (including allied health) were 40.28 Midwifery (9%) followed by 40.53 General Medicine (6% of total service events)

Outpatient activity, Kimberley 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
20.07 General Surgery	3000	4%	40.28 Midwifery	6012	9%
20.02 Anaesthetics	2903	4%	40.53 General Medicine	4179	6%
20.29 Orthopaedics	2622	4%	40.09 Physiotherapy	2710	4%
20.18 Ear, Nose and Throat (ENT)	2568	4%	40.06 Occupational Therapy	2348	3%
20.05 General Medicine	2476	4%	40.35 Palliative Care	2212	3%
20.17 Ophthalmology	2362	3%	40.13 Wound Management	1659	2%
20.11 Paediatric Medicine	2077	3%	40.17 Audiology	1155	2%
20.38 Gynaecology	2047	3%	40.52 Oncology	982	1%
20.40 Obstetrics	1692	2%	40.07 Pre-Admission and Pre-Anaesthesia	534	1%
20.22 Cardiology	1092	2%	40.11 Social Work	461	1%

Using operational boundaries.

Source: Non-admitted Data Collection, DoH

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 higher for East Kimberley residents (10.4%) than the West Kimberley (including Broome) (8.8%). In particular, rates for East Kimberley females (22.5%) were significantly higher than for males (7%). All districts were higher than the averages for WACHS (7.8%) and WA State (8.8%).

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

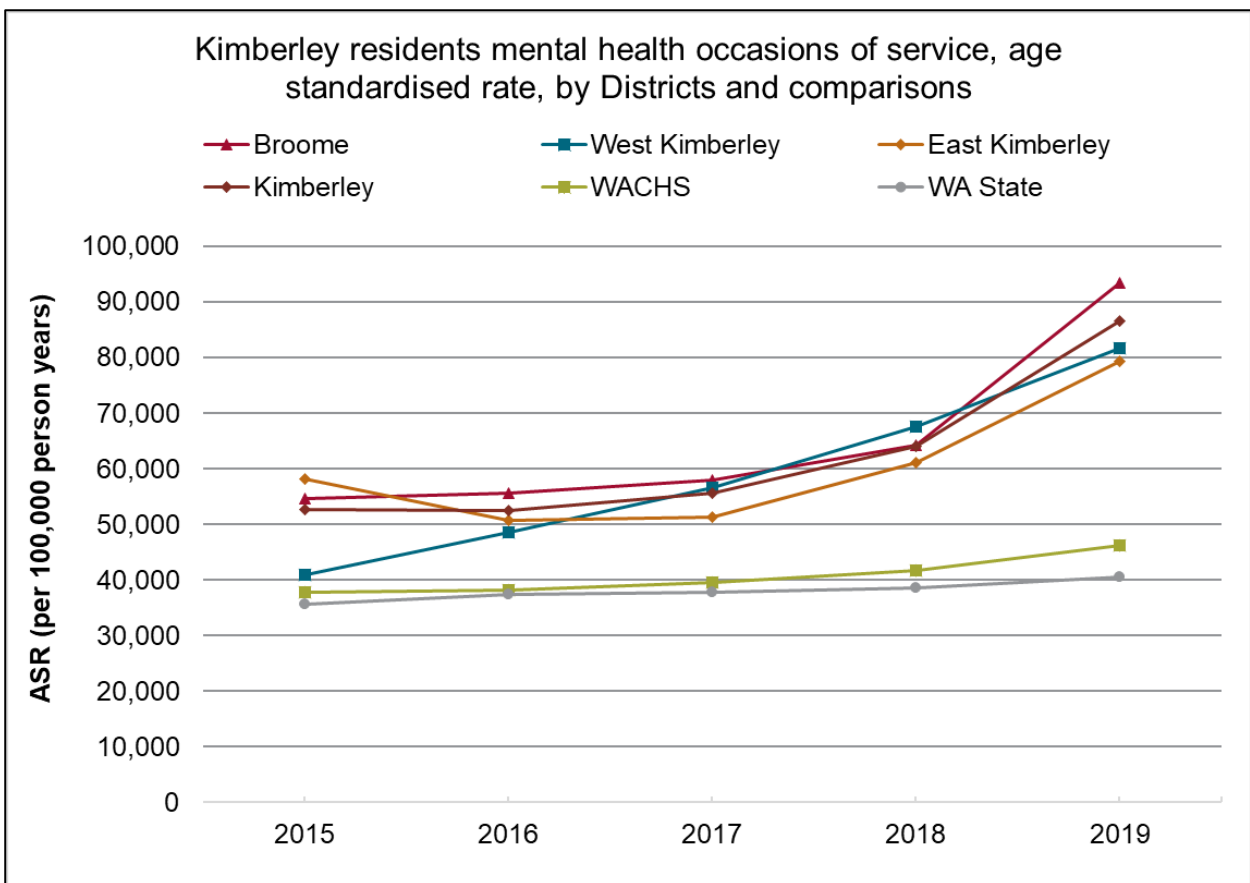
Area	Females	Males	Persons
West Kimberley (including Broome)*	10	7.8	8.8
East Kimberley	22.5	7	14.4
Kimberley	13.9	7.6	10.4
WACHS average	8.1	7.5	7.8
WA State	9.8	7.8	8.8

*Broome and Derby-West Kimberley cannot be reported separately for this indicator so are included together here as West Kimberley.

Source: HealthTracks, DoH

Mental health community hospital activity of Kimberley residents

- Between 2015 and 2019, the rate of community mental health occasions of service fluctuated across the 3 Kimberley districts but was generally highest for residents of Broome district.
- The rate increased by an annual average of 19% between 2015 and 2019 for the West Kimberley district, 14% for Broome and 8% for East Kimberley residents.
- The rates were generally significantly higher than the WACHS and WA state rate.
- Across the Kimberley, between 2015 and 2019, the male rate of mental health occasions of service increased significantly, by an annual average of 15.2%. Similarly, the female rate also increased significantly over the same period, by an annual average of 12.3%.
- For the period 2010-2019, the rate of Mental health mental health service contacts for Aboriginal people was 3.3 times higher than the non-Aboriginal rate.



Source: Department of Health, Health Tracks

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

District	Gender	2015	2016	2017	2018	2019	Annual average change in rate
Broome	Males	4,721	5,272	5,472	5,546	7,637	13%
	Females	4,884	4,286	4,479	5,301	8,099	15.3%
	Persons	9,605	9,558	9,951	10,847	15,736	14.3%
West Kimberley	Males	1,802	1,761	2,391	2,843	3,696	24.6%
	Females	1,795	2,410	2,304	2,794	3,262	15.3%
	Persons	3,598	4,171	4,695	5,637	6,958	18.9%
East Kimberley	Males	3,545	3,138	2,941	3,681	4,859	12.9%
	Females	3,390	2,676	2,839	2,916	3,798	5.6%
	Persons	6,936	5,814	5,780	6,597	8,657	8.1%
Kimberley Total	Males	10,068	10,171	10,804	12,070	16,192	15.2%
	Females	10,069	9,372	9,622	11,011	15,159	12.3%
	Persons	20,139	19,543	20,426	23,081	31,351	13.2%

- In 2020-21, there were 379 mental-health related inpatient separations for Kimberley residents (across designated mental health wards and general wards), with an average length of stay of 7.5 days. Almost all (93%) of these separations occurred in a Kimberley hospital, including 55% at Broome Hospital (which has a designated mental health ward) and 14% at Kununurra Hospital.

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

	Within Kimberley		To Metro		Other WACHS region		Total	
	separations	ALOS	separations	ALOS	separations	ALOS	separations	ALOS
Broome	136	9.2	11	13.5	5	14.2	152	9.7
West Kimberley	109	5.7	2	17.5	0		111	5.9
East Kimberley	107	5.9	4	20.5	5	1.2	116	6.2
Kimberley Total	352	7.1	17	15.6	10	7.7	379	7.5

Using operational boundaries.

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.

Causes of death

- Between 2014-2018 there were 862 deaths of Kimberley residents, with 23% of these deaths being due to Neoplasms (Cancer tumours) and 21% due to Circulatory diseases. These were the leading two causes of death across all Districts.
- Most causes of death across Kimberley residents occurred at much higher rates to the State rate, with the highest being deaths due Endocrine and nutritional diseases, which occurred almost 5 times the times the State rate. Deaths due to External causes of mortality (which includes transport accidents and intentional self-harm) also occurred at more than twice the State rate.

Top five causes of death, Kimberley residents, 2014–2018

		1st	2nd	3rd	4th	5th	Total
Broome and West Kimberley	<i>Condition</i>	Neoplasms	Circulatory diseases	External causes of mortality	Endocrine and nutritional diseases	Nervous system diseases	
	<i>No.</i>	138	108	77	57	30	558
	<i>SRR</i>	1.31	1.62	1.68	4.5	1.3	1.74
East Kimberley	<i>Condition</i>	Circulatory diseases	Neoplasms	External causes of mortality	Endocrine and nutritional diseases	Respiratory diseases	
	<i>No.</i>	73	60	55	31	26	304
	<i>SRR</i>	2.8	1.35	2.81	6.03	2.75	2.33
Kimberley	<i>Condition</i>	Neoplasms	Circulatory diseases	External causes of mortality	Endocrine and nutritional diseases	Respiratory diseases	
	<i>No.</i>	198	181	132	88	74	862
	<i>SRR</i>	1.32	1.95	2.02	4.94	2.19	1.91

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 geographic boundaries.

Source: Department of Health, Health Tracks

Maternal and child health status

Births

- For 2019, residents from the Wyndham-East Kimberley LGA had the highest age-specific birth rate (77.5 births per 1,000 women aged 15–44 years) while residents of Broome had the lowest (67.6 births per 1,000 women). Overall the Kimberley age-specific birth rate (71.3) was slightly lower than WACHS average (72.2) but higher than the WA State average (62.4).
- Residents of the Halls Creek LGA had the highest proportion of teenage births (20%) while Broome had the lowest (6.1%). Overall the Kimberley average proportion of teenage births (10.8%) was double the WACHS average (5.1%) and five times the WA State average (2.1%).
- The Broome LGA had the highest proportion of births to women aged 35 years and over (20.5%), while the Halls Creek LGA had the lowest (9.2%). Overall the Kimberley average of births to women aged 35 years and over (17.6%) was higher than the WACHS average (15.2%) but lower than the WA State average (24.3%).

Maternity key indicators, Kimberley, 2019

LGA	Age-specific birth rate*	Teenage births (%)	Births in women aged 35 years+ (%)
Broome	67.6	6.1	20.5
Derby-West Kimberley	71.2	15.9	15.9
Halls Creek	76.8	20	9.2
Wyndham-East Kimberley	77.5	10.4	17.6
Kimberley	71.3	10.8	17.6
WACHS	72.2	5.1	15.2
WA average	62.4	2.1	24.3

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

Using geographic boundaries. Source: Department of Health, Health Tracks

Numbers of births in Kimberley hospitals

Numbers of Births in Kimberley by Hospital, 2020-21.	
Hospital	Number
Broome Regional Hospital	340
Derby Hospital	88
Kununurra Hospital	117
Kimberley	545

Includes births by non-residents

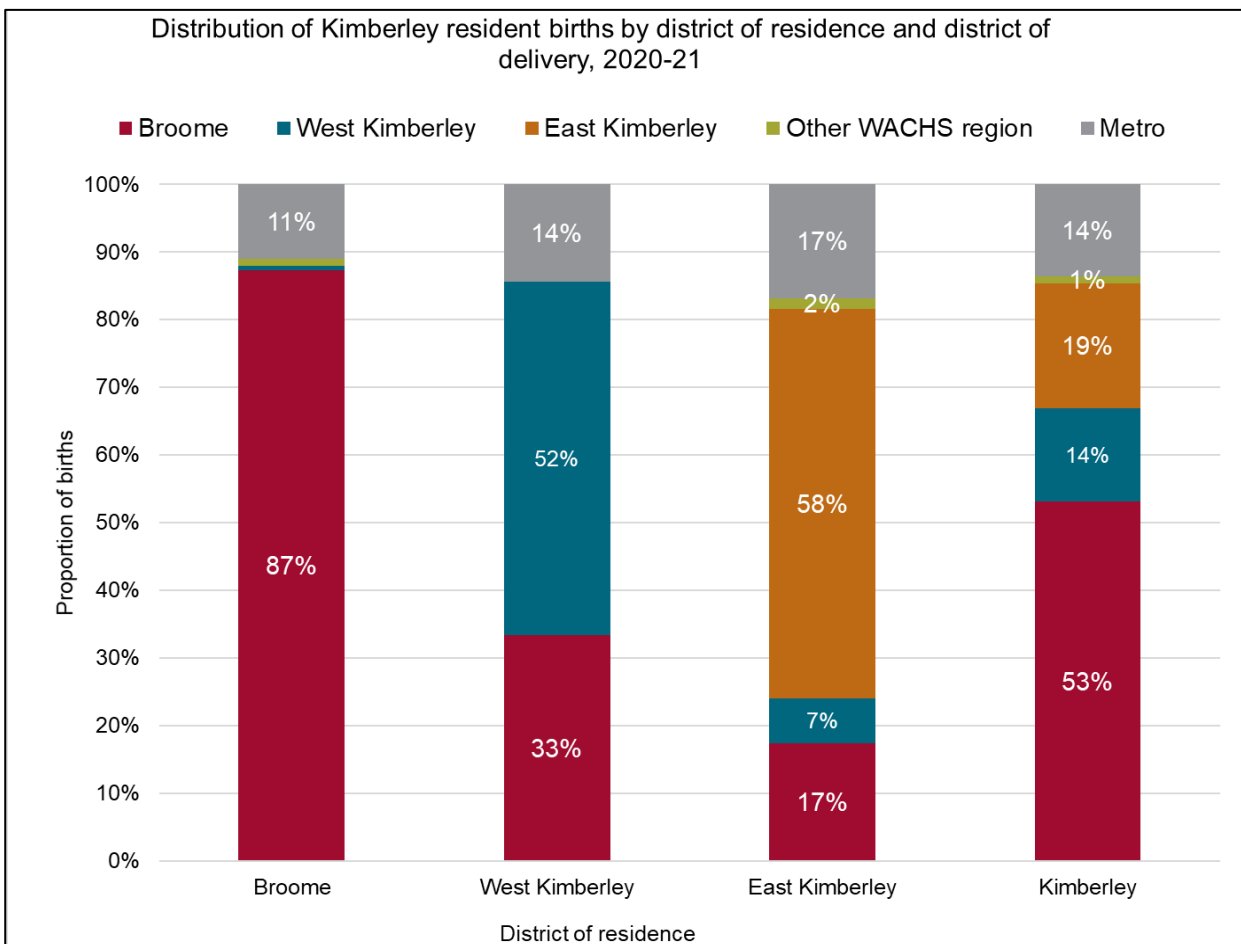
Fitzroy Crossing and Hall Creek are not planned birthing sites. No births occurred at these sites in 2020-21

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Births by Kimberley residents by area of delivery

- Of the 610 public births by Kimberley residents in 2020-21, 85% occurred at Kimberley hospitals, with 14% occurring at a Perth metropolitan hospital.
- Broome district residents had the highest proportion of births at a hospital in their own district (87% at Broome Hospital), followed by East Kimberley (58% at Kununurra Hospital) and West Kimberley (52% at Derby Hospital).
- East Kimberley residents had the highest proportion of births occurring at a hospital in another WACHS region or in Perth metropolitan area (17%).

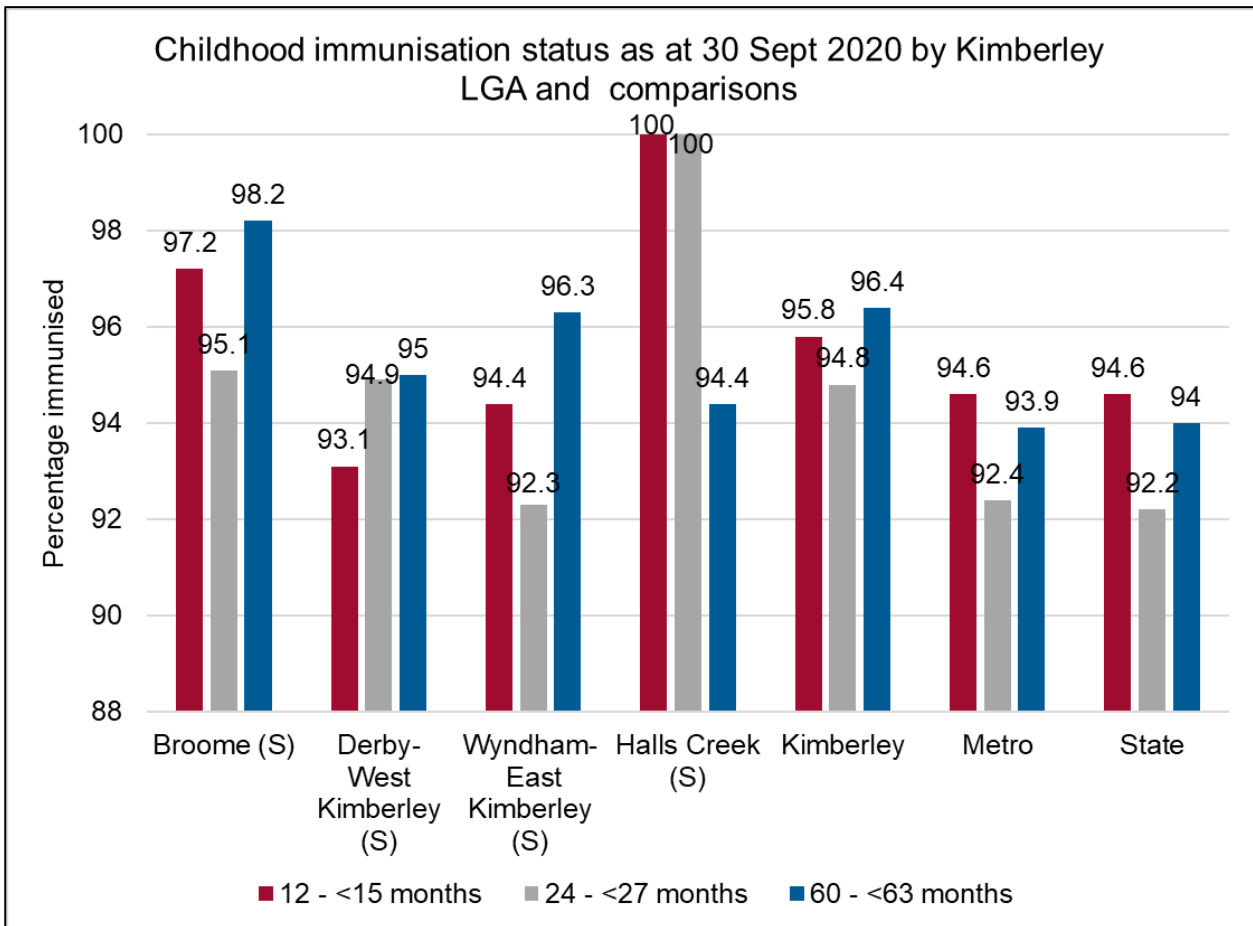


Using operational boundaries.

Source: Hospital Morbidity Data Collection, Department of Health

Childhood Immunisation

- In 2020, the Kimberley had 96.4% of children immunised at five years of age in 2020, with all areas higher than the State (94%).
- The highest rate was in the Broome LGA (98.2%) while the lowest rate was in the Halls Creek LGA (94.4%) however residents of Halls Creek had the highest rates of immunisation at 12 and 24 months of age (100%). .



Using geographic boundaries.

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)

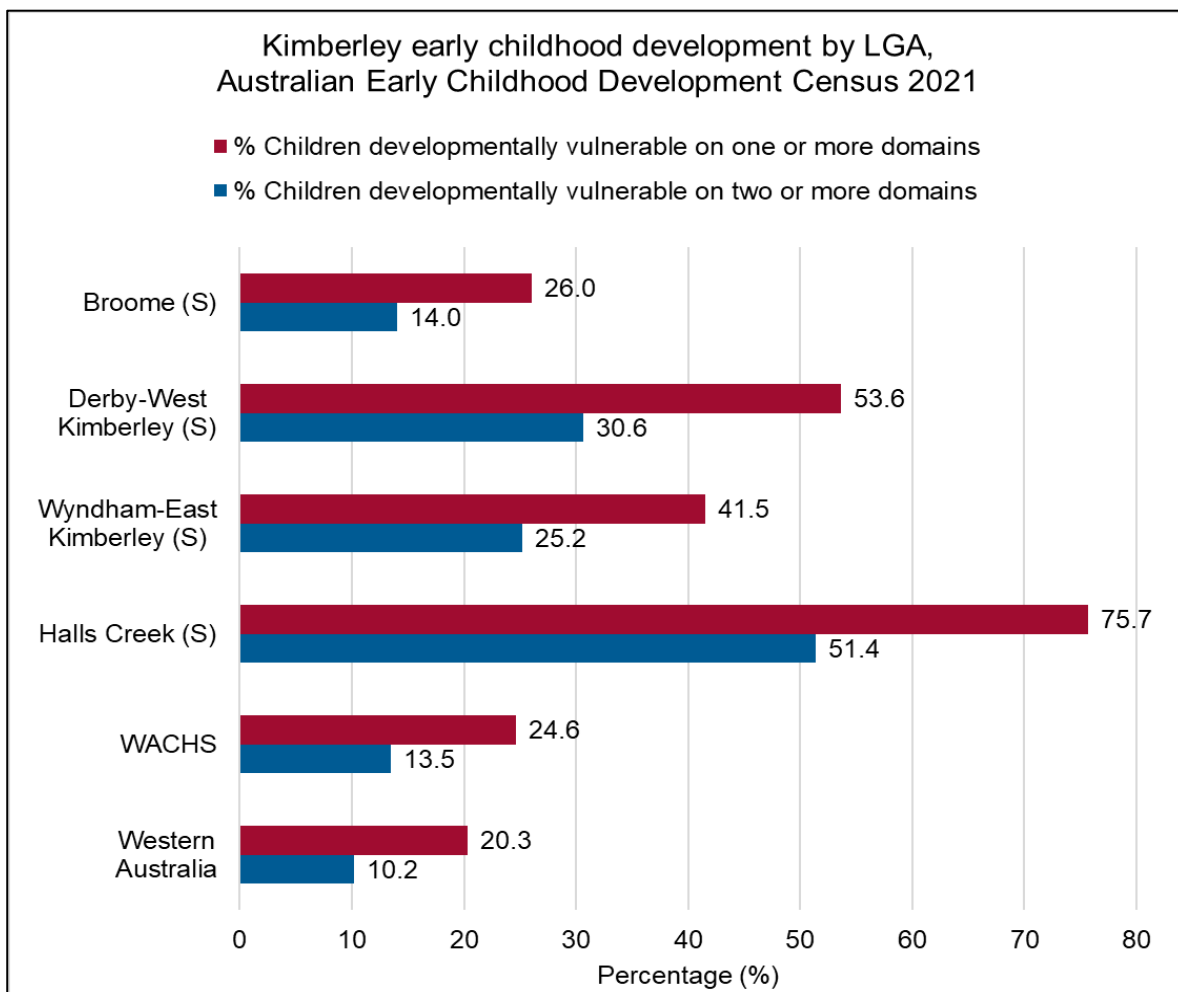
The AEDC uses the early development instrument tool to measure how young children have developed as they start their first year of full-time school.

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.

- The proportion of children rated as developmentally vulnerable on one or more domains of the AEDC across the Kimberley varies considerably depending on location, however all areas demonstrate higher levels of developmental vulnerability compared to the WACHS and State averages. Halls Creek notably has 75.7% of children assessed as vulnerable on 1 or more domain and 51.4% with vulnerability on 2 or more developmental domains.



Source: Australian Early Development Census.

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Sources for further information

WACHS Publications (<https://www.wacountry.health.wa.gov.au/About-us/Publications/Health-profiles-and-service-plans>)

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/>)

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

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